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Secure Email Encryption Service

To

Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, Marcus Rendon <Marcus_Rendon@SWN.COM>, Daniel Hughes <Daniel_Hughes@SWN.COM>, Joel Still <Joel_Still@SWN.COM>, SDC41 <SDC41@SWN.COM>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>

CC:

Submit

This message was transmitted securely but does not require a password.

My address is not listed

Preparing envelope.

Secure Email Encryption Service

To

Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov"
<gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>,
Dicky Hall <Dicky_Hall@SWN.COM>, Joel Stull <Joel_Stull@SWN.COM>,
CC "Daniel \ Hughes" <Daniel_Hughes@SWN.COM>, SDC41
<SDC41@SWN.COM>
"luke_stull@tcenergy.com" <luke_stull@tcenergy.com>,
"adam_chain@tcenergy.com" <adam_chain@tcenergy.com>

Submit

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My address is not listed


15°C 59°F 08/12/2022 03:18:49PM



15 °C 59 °F 10/12/2022 10:17:40PM 0534



16 °C 60 °F 10/12/2022 11:18:59PM 0570

East Dolly Sods 2 1932
Property Number: 821239
AFE#: 1010393
WO#: 4000478998
AFE Estimate: $604630

Reason for P&A:

The EAST DOLLY SODS 2 1932 well in Grant County, West Virginia will be plugged and abandoned. This well is on federal land. Chesapeake has agreed to P&A this well in accordance to the request of the WVDEP. No future potential remains in this wellbore.

Summary:

The East Dolly SODS 2 1932 has a first production date of 6/10/1985. The P&A will consist of pulling 2-3/8" tubing and a CIBP will be set above the top perf. A cement plug will be set in the 5-1/2" casing and CBL will be run to find TOC behind 5-1/2" casing and cut pipe 100' above and pull same. A cement plug will be set in 9-5/8" casing above cut pipe. CBL will be run again in 9-5/8" casing to verify TOC at surface and remediate if needed. There will be a final cement plug set at surface after ensuring no annular gas exists.

Plan Going Forward:

1.MIRU WOR & Equipment

2.Kill well with water. ND well head and NU 7 1/16” 5K double ram BOP

3.POOH with 8397’ of 2 3/8” tubing

4.RU wireline and run gauge ring to 8380’/ RIH with CIBP and set at 8380’

5.TIH with work string to top of CIBP

6.Load hole with fresh water (capacity of 5 ½” casing is 185 bbls). Pump 89 bbls of gel water followed by 12 bbls (57 sacks) of Class H neat cement from 8370’ to 7970’. Displace cement with 30 bbls fresh water. POOH/WOC. Monitor 5 ½” for pressure build overnight.

7.RU wireline, tag cement plug at ~7970’. Run CBL on 5 ½” casing to find TOC behind pipe. Use a jet cutter to cut the 5 ½” ~100’ above TOC.

8.POOH with 5 ½” casing (Calculated free pipe is approximately 3900’)

9.TIH with tubing to 5 ½” stub. Pump 242 bbls of gel water followed by 30 bbls (143 sacks) of Class H neat cement (Estimated plug depth is 3900’ to 3500’). Displace cement with 13 bbls fresh water. POOH/WOC. Monitor pressure build on 9 5/8” casing.

10.RU wireline, Tag cement plug at ~3500’. Run CBL on 9 5/8” casing to verify TOC is at surface. Be prepared to jet cut 9 5/8” if un-cemented pipe exists or to perforate 9 5/8” casing. If no annular gas issues, proceed to step 11.

11.TIH with tubing to 400’ and pump 30 bbls (143 sacks) of Class H neat cement from 400’ to 0’.

12. RDMO

Classification: DCL-Internal

CHESAPEAKE ENERGY

RKB	Variable
KOP	N/A
Depth of Top Perf (MD)	8,410'
Cement Yield	1.17 cu.ft/sk
Density	15.6 ppg

Casing Detail

String	OD (in)	ID (in)	Weight (lbs./ft)	Grade	Casing Cap (bbl/ft)	Annular Cap (bbl/ft)	Top (ft-MD)	Bttm (ft-MD)	TOC	Hole Size
Conductor	16		Unknown	Unknown			0	211		
Surface	13.375		Unknown	Unknown			0	211		
Intermediate	9.625		Unknown	Unknown			0	4,098		
Production	5.5		Unknown	Unknown			0	8,820		

Tubing Design

Item/No	OD (in)	ID (in)	Description	Length (ft)	Depth (ft-MD)
2-3/8" Tubing	2.375	1.995	~258 Joints	32.5	8,397

Estimated Plug Set Depths and Cement Needed

Item	Plug Height	Top of Plug	Bottom of Plug	Cement Type	% Excess Cmt	Cement Sacks	Displacement Volume (BBL)
Plug 1	400'	7,970'	8,370'	Class H	0%	44	30
Plug 2	400'	3,500'	3,900'	Class H	0%	148	13
Plug 3	400'	0'	400'	Class H	0%	143	0
Plug 4							
Plug 5							
Plug 6							
Plug 7							
Plug 8							
Plug 9							
Plug 10							

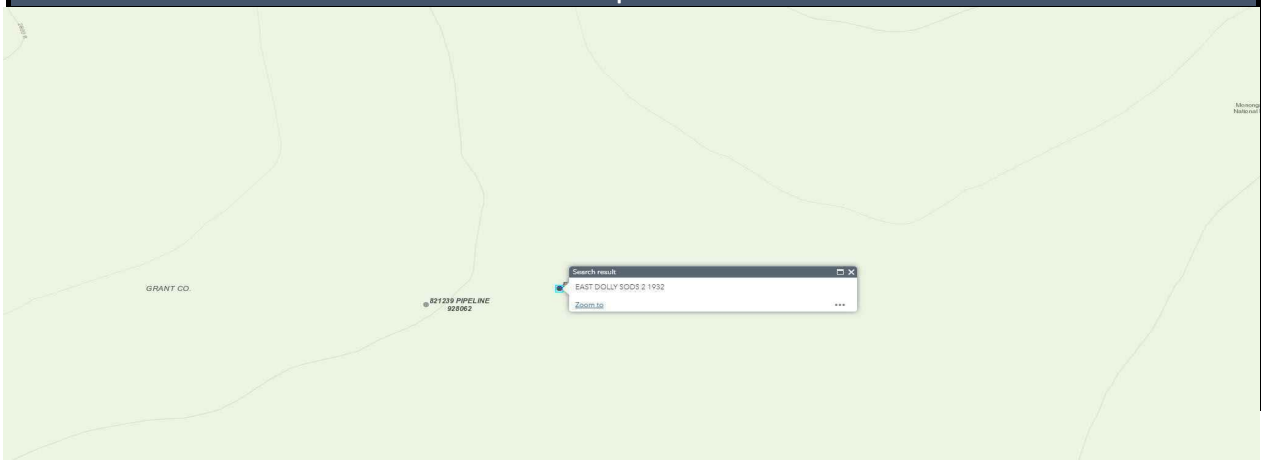
Plugging Details

Plug #	Depth Code	Depth	Csg or Open Hole?	Peforate?	Cmt Behind Csg
Plug 1	CIBP	8,380'	Csg	N/A	Yes
Plug 2	5-1/2" Casing Plug	7,970'	Csg	N/A	3909'
Plug 3	9-5/8" Casing Plug	3,500'	Csg	N/A	Yes
Plug 4	9-5/8" Surface Plug	0'	Csg	N/A	Yes
Plug 5					
Plug 6					
Plug 7					
Plug 8					
Plug 9					
Plug 10					

Well Information	
Well Name	East Dolly Sods 2 1932
Location	West Virgina
Formation	Oriskany
PN#	821239
AFE#	1010393
WO#	4000478998
WBS	PA-1082123900-01
API#	4702300007
Latitude	38.9543423
Longitude	-79.3300576

Contact Information			
Title	Name	E-mail	Phone
Production Engineer	JJ Kim	jj.kim@chk.com	405-596-0720
Production Engineer (Secondary)			
Production Manager	John Van Gels	john.vangels@chk.com	(636) 448-1104
Production Supervisor	Keeley Bergman	keeley.bergman@chk.com	(918) 991-5520
Production Superintendent	Chris Sprute	chris.sprute@chk.com	318-771-2769
Workover Foreman	Lucas Welch	lucas.welch@chk.com	(570) 423-4236
Regulatory Manager	Eric Haskins	eric.haskins@chk.com	(607) 242-3839
DEP Contact			

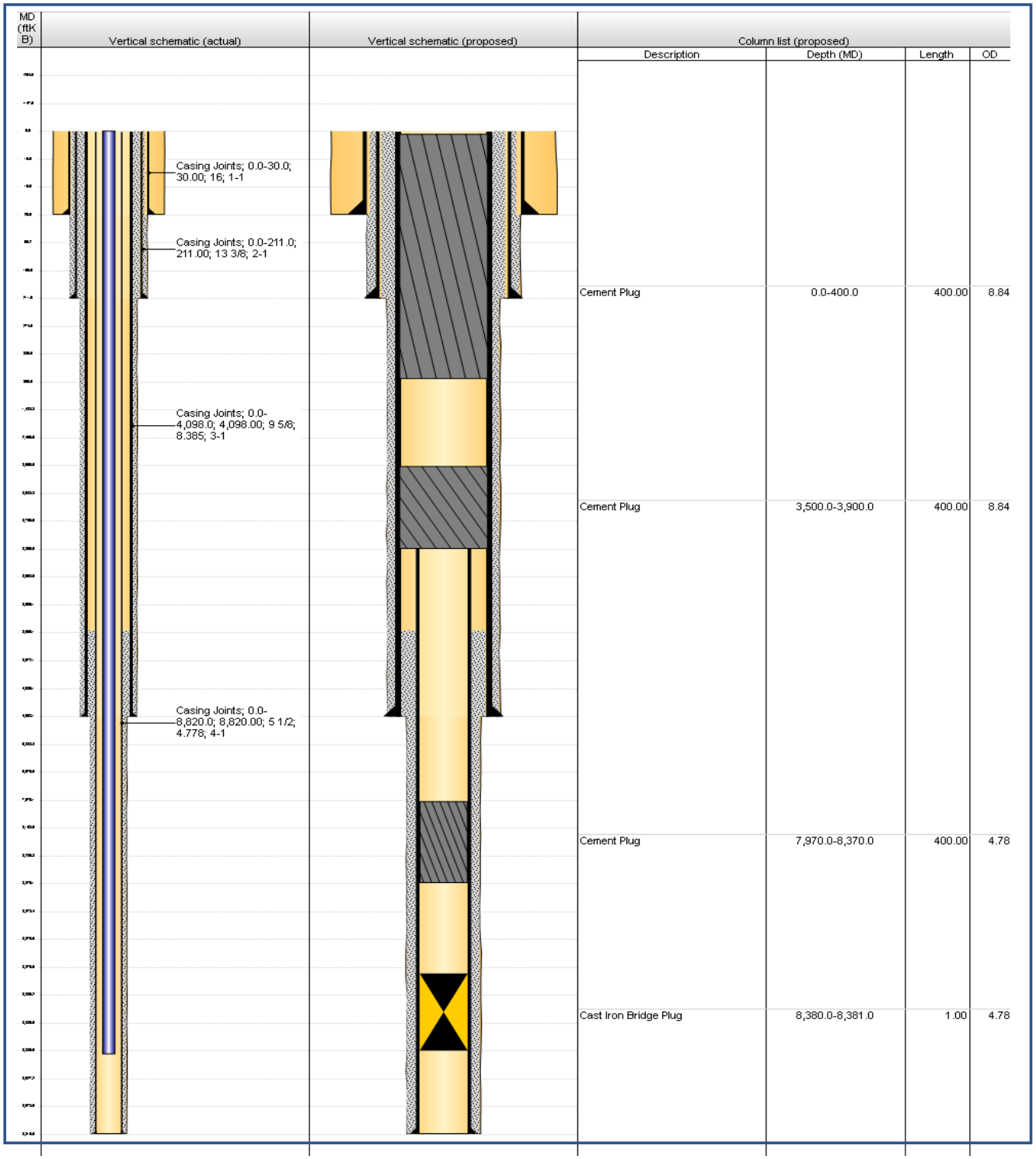
Map View



Classification: DCL-Internal

CHESAPEAKE ENERGY

RKB	Variable
KOP	N/A
Depth of Top Perf	8,410'
Cement Yield	1.17 cu.ft/sk
Density	15.6 ppg



Column list (proposed)

Description	Depth (MD)	Length	OD
Cement Plug	0.0-400.0	400.00	8.84
Cement Plug	3,500.0-3,900.0	400.00	8.84
Cement Plug	7,970.0-8,370.0	400.00	4.78
Cast Iron Bridge Plug	8,380.0-8,381.0	1.00	4.78

FORM IV-35
(REVERSE)

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

On 08/13/84 Fractured at 8410/15, 8426/27, 8434/35, 8531/32, 8536/39, 8577/78 with 2412 sks. sand, and 2620 BBL treated fluid.

WELL LOG

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Sand and Shale	0	8084	At 276 1/4" water
Purcell Limestone	8084	8197	
Lower Marcellus	8197	8227	
Tioga	8227	8232	
Needmore Shale	8243	8408	
Oriskany Sandstone	8408	8608	
Helderberg Limestone	8608	TD	

MINERAL RIGHTS OWNERS
(2) tracts of Unit
U. S. of A.
c/o U. S. Forest Service
P. O. Box 1548
Elkins, WV 26241
(1) tract of Unit
Oather H. & Hazel Heavner
Route #1, Box 243
Maysville, WV 26833

(Attach separate sheets as necessary)

UNION DRILLING, INC.
Well Operator

By: Joseph C. Pettey

Date: 08/22/84 Joseph C. Pettey, Vice President of Production

Note: Regulation 2.02(i) provides as follows:
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."

IV-35
(Rev 8-81)

RECEIVED
AUG 3 1 1984
OIL & GAS DIVISION
DEPT. OF MINES

State of West Virginia
Department of Mines
Oil and Gas Division

Date 08/22/84
Operator's
Well No. 2 - 1932
Farm East Dolly Sods #2
API No. 47 - 023 - 0007

WELL OPERATOR'S REPORT (CONFIDENTIAL WELL)
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil ___ / Gas x / Liquid Injection ___ / Waste Disposal ___ /
(If "Gas," Production x / Underground Storage ___ / Deep x / Shallow ___ /)

LOCATION: Elevation: 2705.65' Watershed High Ridge Run
District: Milroy County Grant Quadrangle Hopeville

COMPANY UNION DRILLING, INC.
ADDRESS P. O. Drawer 40, Buckhannon, WV 26201
DESIGNATED AGENT Joseph C. Vanzant, Jr.
ADDRESS P. O. Drawer 40, Buckhannon, WV 26201
SURFACE OWNER United State of America
ADDRESS c/o U.S. Forest Service, P. O. Box 1548 Elkins, WV 26241
MINERAL RIGHTS OWNER See Page 2
ADDRESS
OIL AND GAS INSPECTOR FOR THIS WORK Philip Tracy ADDRESS Forest Festival Terrace, Apt. #24, Elkins, WV 26241
PERMIT ISSUED January 23, 1984
DRILLING COMMENCED 04/14/84
DRILLING COMPLETED 05/31/84
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.		30'	
13-10"		211'	189 cf
9 5/8	4098.67'	4098.67'	1883.5cf
8 5/8			
7			
5 1/2		8881.18'	1243.2 cf
4 1/2			
3			
2		8397.34'	
Liners used			

GEOLOGICAL TARGET FORMATION Oriskany Depth 8820 feet
Depth of completed well 8820 feet Rotary x / Cable Tools ___
Water strata depth: Fresh 276 feet; Salt ___ feet
Coal seam depths: None Is coal being mined in the area? ___

GRANT 0007

OPEN FLOW DATA
Producing formation Oriskany Pay zone depth ___ feet
Gas: Initial open flow 301 Mcf/d Oil: Initial open flow ___ Bbl/d
Final open flow 933 Mcf/d Final open flow ___ Bbl/d
Time of open flow between initial and final tests ? hours
Static rock pressure 3000 psig (surface measurement) after 24 hours shut in
(If applicable due to multiple completion--)
Second producing formation ___ Pay zone depth ___ feet
Gas: Initial open flow ___ Mcf/d Oil: Initial open flow ___ Bbl/d
Final open flow ___ Mcf/d Oil: Final open flow ___ Bbl/d
Time of open flow between initial and final tests ___ hours
Static rock pressure ___ psig (surface measurement) after ___ hours shut in

(Continue on reverse side)

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. Betty Schafer MSH 3H
Well Pad Name: Betty Schafer MSH Pad

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	051-Marshal	Sand Hill	Moundsville
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Betty Schafer MSH 3H Well Pad Name: Betty Schafer MSH Pad

3) Farm Name/Surface Owner: Roy A. Schafer & Edward J. Schafer Public Road Access: Big Wheeling Creek

4) Elevation, current ground: 848.4' Elevation, proposed post-construction: 848.4'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

Gayne J Knitowski 11/10/2021

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Up-Dip well to the North, Target Top TVD- 5969', Target Base TVD- 6021', Anticipated Thickness- 52', Associated Pressure- 3913'

8) Proposed Total Vertical Depth: 6005'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 22750'

11) Proposed Horizontal Leg Length: 11,494.34'

12) Approximate Fresh Water Strata Depths: 281'

13) Method to Determine Fresh Water Depths: Salinity calculations from Betty Schafer MSH 8H (API 47-051-02297)

14) Approximate Saltwater Depths: 803' Salinity Profile

15) Approximate Coal Seam Depths: 353'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes x No _____

(a) If Yes, provide Mine Info:
Name: Ohio County Mine
Depth: 353'
Seam: Pittsburgh
Owner: American Consolidated Natural Resources

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. Charles Jamison MSH 406H
Well Pad Name: Charles Jamison MSH

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	051-Marshal	7-Liberty	278-Cameron
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Charles Jamison MSH 406H Well Pad Name: Charles Jamison MSH

3) Farm Name/Surface Owner: Charles & Jean Jamison Public Road Access: Grapevine Ridge Road

4) Elevation, current ground: 1335' Elevation, proposed post-construction: 1335'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

6) Existing Pad: Yes or No Yes

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.01.21 08:15:20 -05'00'

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Down-Dip well to the South, Target Top TVD- 7108', Target Base TVD- 7152', Anticipated Thickness- 44', Associated Pressure- 4649

8) Proposed Total Vertical Depth: 7133'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 22,759'

11) Proposed Horizontal Leg Length: 14,089.18'

12) Approximate Fresh Water Strata Depths: 322'

13) Method to Determine Fresh Water Depths: Salinity Calculations from Charles Jamison MSH 206H logs (API 47-051-02295)

14) Approximate Saltwater Depths: 1121' Salinity Profile

15) Approximate Coal Seam Depths: 1087'

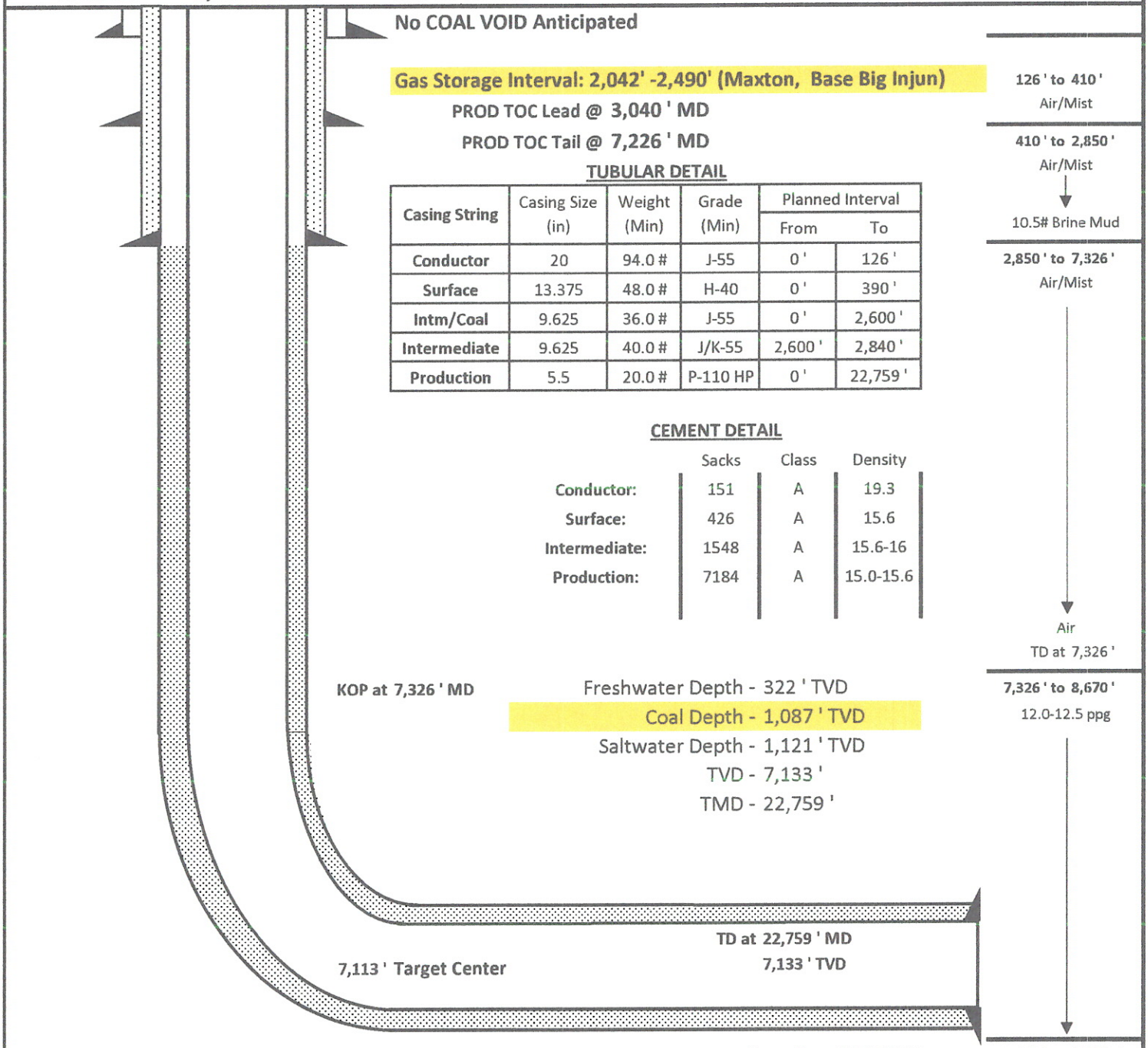
16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes x No _____

(a) If Yes, provide Mine Info:
Name: McElroy Mine/Marshall County Mine
Depth: 1060'
Seam: Pittsburgh
Owner: Murray Energy Corporation

Southwestern Energy Company | Proposed Drilling Program

Well:	CHARLES JAMISON MSH 406	**Re-entry Rig:**	SDC 41
Field:	NORTH VICTORY FIELD WET	**Prospect:**	Marcellus Shale
County:	MARSHALL	**State:**	WV
SHL:	39.7919 Latitude	-80.6077 Longitude	
BHL:	39.7611 Latitude	-80.5923 Longitude	
KB Elev:	1,361 ft MSL	KB: 26 ft AGL	**GL Elev:** 1,335 ft MSL



TUBULAR DETAIL

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval From	Planned Interval To
Conductor	20	94.0 #	J-55	0 '	126 '
Surface	13.375	48.0 #	H-40	0 '	390 '
Intm/Coal	9.625	36.0 #	J-55	0 '	2,600 '
Intermediate	9.625	40.0 #	J/K-55	2,600 '	2,840 '
Production	5.5	20.0 #	P-110 HP	0 '	22,759 '

CEMENT DETAIL

	Sacks	Class	Density
Conductor:	151	A	19.3
Surface:	426	A	15.6
Intermediate:	1548	A	15.6-16
Production:	7184	A	15.0-15.6

Created by: C R Hall on 01/20/2022

Gayne Knitowski

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Date: 2022.01.21 08:15:41 -05'00'

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. Betty Schafer MSH 3H
Well Pad Name: Betty Schafer MSH Pad

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	051-Marshal	Sand Hill	Moundsville
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Betty Schafer MSH 3H Well Pad Name: Betty Schafer MSH Pad

3) Farm Name/Surface Owner: Roy A. Schafer & Edward J. Schafer Public Road Access: Big Wheeling Creek

4) Elevation, current ground: 848.4' Elevation, proposed post-construction: 848.4'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

Gayne J Knitowski 11/10/2021

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Up-Dip well to the North, Target Top TVD- 5969', Target Base TVD- 6021', Anticipated Thickness- 52', Associated Pressure- 3913'

8) Proposed Total Vertical Depth: 6005'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 22750'

11) Proposed Horizontal Leg Length: 11,494.34'

12) Approximate Fresh Water Strata Depths: 281'

13) Method to Determine Fresh Water Depths: Salinity calculations from Betty Schafer MSH 8H (API 47-051-02297)

14) Approximate Saltwater Depths: 803' Salinity Profile

15) Approximate Coal Seam Depths: 353'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes x No _____

(a) If Yes, provide Mine Info:
Name: Ohio County Mine
Depth: 353'
Seam: Pittsburgh
Owner: American Consolidated Natural Resources

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. Charles Jamison MSH 810H
Well Pad Name: Charles Jamison MSH

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	051-Marshall	7-Liberty	278-Cameron
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Charles Jamison MSH 810H Well Pad Name: Charles Jamison MSH

3) Farm Name/Surface Owner: Charles & Jean Jamison Public Road Access: Grapevine Ridge Road

4) Elevation, current ground: 1335' Elevation, proposed post-construction: 1335'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

6) Existing Pad: Yes or No Yes

Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.01.21 08:16:33 -05'00'

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Down-Dip well to the South, Target Top TVD- 7400', Target Base TVD- 7447', Anticipated Thickness- 47', Associated Pressure- 4841'

8) Proposed Total Vertical Depth: 7431'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 29568'

11) Proposed Horizontal Leg Length: 20,882.23'

12) Approximate Fresh Water Strata Depths: 322'

13) Method to Determine Fresh Water Depths: Salinity Calculations from Charles Jamison MSH 206H logs (API 47-051-02295)

14) Approximate Saltwater Depths: 1121' Salinity Profile

15) Approximate Coal Seam Depths: 1087'

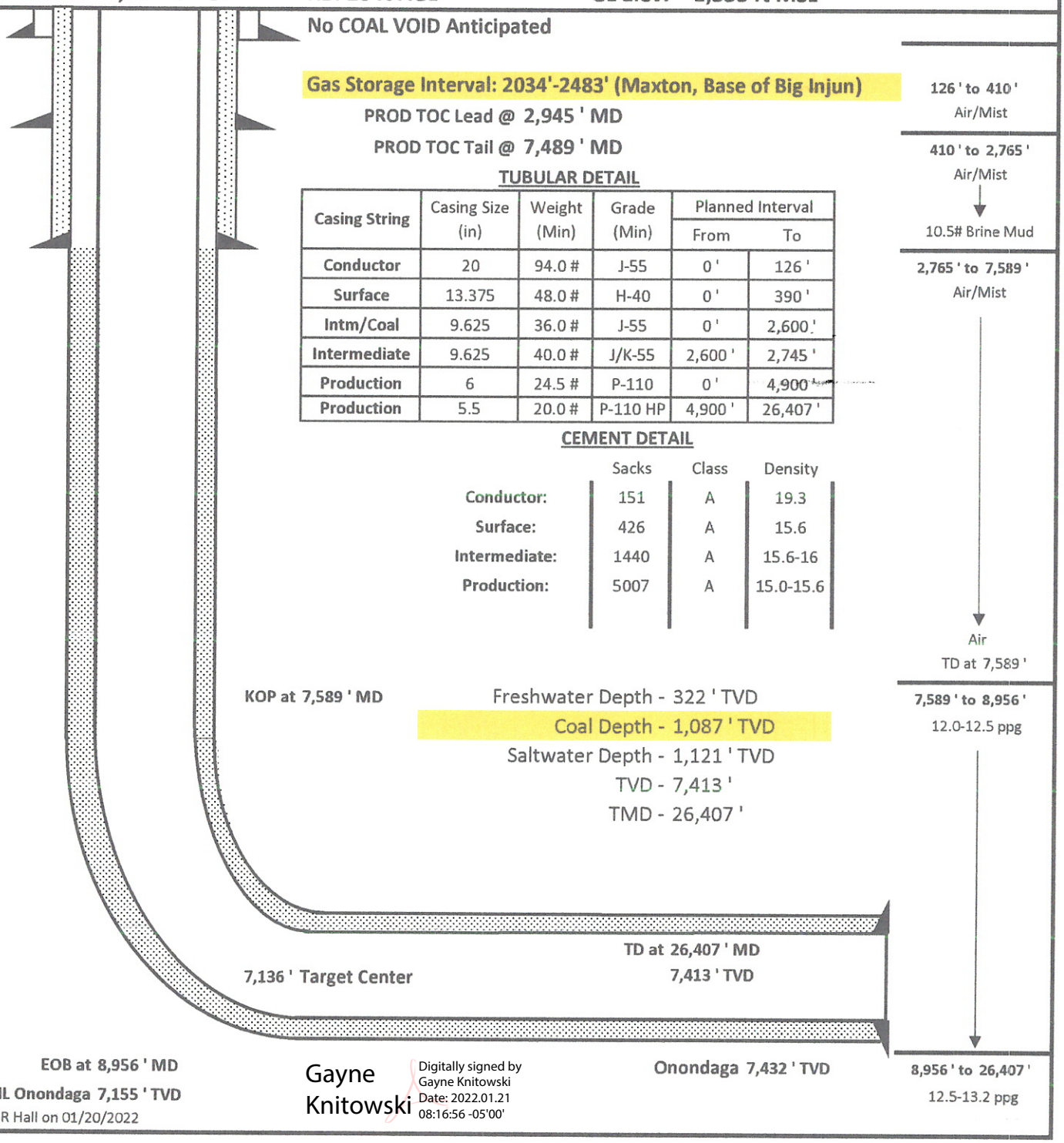
16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes x No _____

(a) If Yes, provide Mine Info: Name: McElroy Mine/Marshall County Mine
Depth: 1060'
Seam: Pittsburgh
Owner: Murray Energy Corporation

Southwestern Energy Company | Proposed Drilling Program

Well:	CHARLES JAMISON MSH 810	**Re-entry Rig:**	SDC 41
Field:	NORTH VICTORY FIELD WET	**Prospect:**	Marcellus Shale
County:	MARSHALL	**State:**	WV
SHL:	39.7919 Latitude -80.6074 Longitude		
BHL:	39.7597 Latitude -80.5651 Longitude		
KB Elev:	1,361 ft MSL KB: 26 ft AGL	**GL Elev:**	1,335 ft MSL



TUBULAR DETAIL

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval From	Planned Interval To
Conductor	20	94.0 #	J-55	0 '	126 '
Surface	13.375	48.0 #	H-40	0 '	390 '
Intm/Coal	9.625	36.0 #	J-55	0 '	2,600 '
Intermediate	9.625	40.0 #	J/K-55	2,600 '	2,745 '
Production	6	24.5 #	P-110	0 '	4,900 '
Production	5.5	20.0 #	P-110 HP	4,900 '	26,407 '

CEMENT DETAIL

	Sacks	Class	Density
Conductor:	151	A	19.3
Surface:	426	A	15.6
Intermediate:	1440	A	15.6-16
Production:	5007	A	15.0-15.6

Gayne Knitowski

Digitally signed by Gayne Knitowski
Date: 2022.01.21 08:16:56 -05'00'

Created by: C R Hall on 01/20/2022

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. Charles Jamison MSH 606H
Well Pad Name: Charles Jamison MSH

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	051-Marshal	7-Liberty	278-Cameron
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Charles Jamison MSH 606H Well Pad Name: Charles Jamison MSH

3) Farm Name/Surface Owner: Charles & Jean Jamison Public Road Access: Grapevine Ridge Road

4) Elevation, current ground: 1335' Elevation, proposed post-construction: 1335'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

Gayne Knitowski — Digitally signed by Gayne Knitowski Date: 2022.01.21 08:17:43 -05'00'

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Down-Dip well to the South, Target Top TVD- 7076', Target Base TVD- 7120', Anticipated Thickness- 44', Associated Pressure- 4628'

8) Proposed Total Vertical Depth: 7123'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 20,181'

11) Proposed Horizontal Leg Length: 11,404.51'

12) Approximate Fresh Water Strata Depths: 322'

13) Method to Determine Fresh Water Depths: Salinity Calculations from Charles Jamison MSH 206H logs (API 47-051-02295)

14) Approximate Saltwater Depths: 1121' Salinity Profile

15) Approximate Coal Seam Depths: 1087'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes x No _____

(a) If Yes, provide Mine Info:
Name: McElroy Mine/Marshall County Mine
Depth: 1060'
Seam: Pittsburgh
Owner: Murray Energy Corporation

Southwestern Energy Company

Proposed Drilling Program

Well: CHARLES JAMISON MSH 410
Field: NORTH VICTORY FIELD WET
County: MARSHALL
SHL: 39.7919 Latitude -80.6075 Longitude
BHL: 39.7552 Latitude -80.5667 Longitude
KB Elev: 1,361 ft MSL KB: 26 ft AGL GL Elev: 1,335 ft MSL

Re-entry Rig: SDC 41
Prospect: Marcellus Shale
State: WV

No COAL VOID Anticipated

Gas Storage Interval: 2034'-2483' (Maxton, Base of Big Injun)

PROD TOC Lead @ 2,970 ' MD

PROD TOC Tail @ 6,820 ' MD

TUBULAR DETAIL

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval From	Planned Interval To
Conductor	20	94.0 #	J-55	0 '	126 '
Surface	13.375	48.0 #	H-40	0 '	390 '
Intm/Coal	9.625	36.0 #	J-55	0 '	2,600 '
Intermediate	9.625	40.0 #	J/K-55	2,600 '	2,770 '
Production	6	24.5 #	P-110	0 '	4,900 '
Production	5.5	20.0 #	P-110 HP	4,900 '	27,386 '

CEMENT DETAIL

	Sacks	Class	Density
Conductor:	151	A	19.3
Surface:	426	A	15.6
Intermediate:	1472	A	15.6-16
Production:	5192	A	15.0-15.6

126 ' to 410 '
Air/Mist

410 ' to 2,790 '
Air/Mist
10.5# Brine Mud

2,790 ' to 6,920 '
Air/Mist
Air
TD at 6,920 '

6,920 ' to 8,452 '
12.0-12.5 ppg

8,452 ' to 27,386 '
12.5-13.2 ppg

KOP at 6,920 ' MD

Freshwater Depth - 322 ' TVD
Coal Depth - 1,087 ' TVD
Saltwater Depth - 1,121 ' TVD
TVD - 7,415 '
TMD - 27,386 '

TD at 27,386 ' MD
7,415 ' TVD

7,133 ' Target Center

EOB at 8,452 ' MD
SHL Onondaga 7,149 ' TVD

Onondaga 7,431 ' TVD

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.01.21 08:18:03 -05'00'

Created by: C R Hall on 01/20/2022

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. Charles Jamison MSH 610H
Well Pad Name: Charles Jamison MSH

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	051-Marshal	7-Liberty	278-Cameron
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Charles Jamison MSH 610H Well Pad Name: Charles Jamison MSH

3) Farm Name/Surface Owner: Charles & Jean Jamison Public Road Access: Grapevine Ridge Road

4) Elevation, current ground: 1335' Elevation, proposed post-construction: 1335'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

6) Existing Pad: Yes or No Yes

Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.01.21 08:18:44 -05'00'

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Down-Dip well to the South, Target Top TVD- 7400', Target Base TVD- 7447', Anticipated Thickness- 47', Associated Pressure- 4841'

8) Proposed Total Vertical Depth: 7431'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 29568'

11) Proposed Horizontal Leg Length: 20,882.23'

12) Approximate Fresh Water Strata Depths: 322'

13) Method to Determine Fresh Water Depths: Salinity Calculations from Charles Jamison MSH 206H logs (API 47-051-02295)

14) Approximate Saltwater Depths: 1121' Salinity Profile

15) Approximate Coal Seam Depths: 1087'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes x No _____

(a) If Yes, provide Mine Info: Name: McElroy Mine/Marshall County Mine
Depth: 1060'
Seam: Pittsburgh
Owner: Murray Energy Corporation

Southwestern Energy Company

Proposed Drilling Program

Well: CHARLES JAMISON MSH 610
Field: NORTH VICTORY FIELD WET
County: MARSHALL
SHL: 39.7919 Latitude -80.6075 Longitude
BHL: 39.7519 Latitude -80.5600 Longitude
KB Elev: 1,361 ft MSL KB: 26 ft AGL GL Elev: 1,335 ft MSL

Re-entry Rig: SDC 41
Prospect: Marcellus Shale
State: WV

No COAL VOID Anticipated

Gas Storage Interval: 2034'-2483'(Maxton, Base of Big Injun)

PROD TOC Lead @ 2,990 ' MD

PROD TOC Tail @ 7,116 ' MD

TUBULAR DETAIL

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval From	Planned Interval To
Conductor	20	94.0 #	J-55	0 '	126 '
Surface	13.375	48.0 #	H-40	0 '	390 '
Intm/Coal	9.625	36.0 #	J-55	0 '	2,600 '
Intermediate	9.625	40.0 #	J/K-55	2,600 '	2,790 '
Production	6	24.5 #	P-110	0 '	4,900 '
Production	5.5	20.0 #	P-110 HP	4,900 '	29,568 '

CEMENT DETAIL

	Sacks	Class	Density
Conductor:	151	A	19.3
Surface:	426	A	15.6
Intermediate:	1497	A	15.6-16
Production:	5649	A	15.0-15.6

126 ' to 410 '
Air/Mist

410 ' to 2,810 '
Air/Mist
10.5# Brine Mud

2,810 ' to 7,216 '
Air/Mist
Air
TD at 7,216 '

7,216 ' to 8,681 '
12.0-12.5 ppg

8,681 ' to 29,568 '
12.5-13.2 ppg

KOP at 7,216 ' MD

Freshwater Depth - 322 ' TVD
Coal Depth - 1,087 ' TVD
Saltwater Depth - 1,121 ' TVD
TVD - 7,413 '
TMD - 29,568 '

TD at 29,568 ' MD
7,413 ' TVD

7,130 ' Target Center

Onondaga 7,429 ' TVD

EOB at 8,681 ' MD
SHL Onondaga 7,146 ' TVD

Created by: C R Hall on 01/20/2022

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.01.21 08:19:07 -05'00'

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. Jamison MSH 410H
Well Pad Name: Charles Jamison MSH

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	051-Marshal	7-Liberty	278-Cameron
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Jamison MSH 410H Well Pad Name: Charles Jamison MSH

3) Farm Name/Surface Owner: Charles & Jean Jamison Public Road Access: Grapevine Ridge Road

4) Elevation, current ground: 1335' Elevation, proposed post-construction: 1335'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.01.21 08:19:55 -05'00'

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Down-Dip well to the South, Target Top TVD- 7383', Target Base TVD- 7431', Anticipated Thickness- 47', Associated Pressure- 4841'

8) Proposed Total Vertical Depth: 7415'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 27386'

11) Proposed Horizontal Leg Length: 18928.49'

12) Approximate Fresh Water Strata Depths: 322'

13) Method to Determine Fresh Water Depths: Salinity Calculations from Charles Jamison MSH 206H logs (API 47-051-02295)

14) Approximate Saltwater Depths: 1121' Salinity Profile

15) Approximate Coal Seam Depths: 1087'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes x No _____

(a) If Yes, provide Mine Info:
Name: McElroy Mine/Marshall County Mine
Depth: 1060'
Seam: Pittsburgh
Owner: Murray Energy Corporation

Southwestern Energy Company

Proposed Drilling Program

Well: CHARLES JAMISON MSH 410
Field: NORTH VICTORY FIELD WET
County: MARSHALL
SHL: 39.7919 Latitude -80.6075 Longitude
BHL: 39.7552 Latitude -80.5667 Longitude
KB Elev: 1,361 ft MSL KB: 26 ft AGL GL Elev: 1,335 ft MSL

Re-entry Rig: SDC 41
Prospect: Marcellus Shale
State: WV

No COAL VOID Anticipated

Gas Storage Interval: 2034'-2483' (Maxton, Base of Big Injun)

PROD TOC Lead @ 2,970 ' MD

PROD TOC Tail @ 6,820 ' MD

TUBULAR DETAIL

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Surface	13.375	48.0 #	H-40	0 '	390 '
Intm/Coal	9.625	36.0 #	J-55	0 '	2,600 '
Intermediate	9.625	40.0 #	J/K-55	2,600 '	2,770 '
Production	6	24.5 #	P-110	0 '	4,900 '
Production	5.5	20.0 #	P-110 HP	4,900 '	27,386 '

CEMENT DETAIL

	Sacks	Class	Density
Conductor:	151	A	19.3
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Production:	5192	A	15.0-15.6

126 ' to 410 '
Air/Mist

410 ' to 2,790 '
Air/Mist
↓
10.5# Brine Mud

2,790 ' to 6,920 '
Air/Mist
↓
Air
TD at 6,920 '

6,920 ' to 8,452 '
12.0-12.5 ppg

8,452 ' to 27,386 '
12.5-13.2 ppg

KOP at 6,920 ' MD

Freshwater Depth - 322 ' TVD
Coal Depth - 1,087 ' TVD
Saltwater Depth - 1,121 ' TVD
TVD - 7,415 '
TMD - 27,386 '

TD at 27,386 ' MD
7,415 ' TVD

7,133 ' Target Center

EOB at 8,452 ' MD
SHL Onondaga 7,149 ' TVD

Onondaga 7,431 ' TVD

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.01.21 08:20:18 -05'00'

Created by: C R Hall on 01/20/2022

VIOLATION NO. 11753
FORM VI-29
(Rev 7/01)

DATE 11-01-2021
API NO. 47-051-01622

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

NOTICE EXTENDING ABATEMENT TIME

LOCATION: FARM NAME Reinbeau
DISTRICT Union
WELL NO. 8H
COUNTY Marshall

TO: SWN Production Company
ADDRESS: PO Box 12359
Spring, Texas 77391-4954

DESIGNATED AGENT Brittany Woody
ADDRESS 1300 Pierpont Dr, Suite 201
Morgantown, WV 26508

The violation set forth on October 25, 2021 "Notice of Violation", Numbered ____ and/or "Imminent Danger Order", Numbered 11753, of that date has not been totally abated.

Based on the facts and circumstances of this matter, as determined by the undersigned, you are:

X Required to continue the cessation of operation until the imminent danger is totally abated.

X Granted an extension of time to totally abate the violation until December 1, 2021

This notice shall not be construed to bar the Office of Oil and Gas from additional proceedings, assessment of penalties or criminal charges arising out of this matter.

This is the first X /second ____/ final ____ extension of said Notice of Violation.

SIGNED [signature]
TITLE Inspector

ADDRESS PO Box 108
Gormania, WV 26720

TELEPHONE 304-546-8171

HALLIBURTON

Part Number: 101001643
Document Number: 802.90004
Rev. OI 03/02/2018

FAS DRILL® FRAC PLUG, BRIDGE PLUG AND PACKER OPERATING INSTRUCTIONS

SETTING PROCEDURES FOR STANDARD SHEAR SCREW OR SHEAR PIN SETTING SYSTEM

Electric Wireline

The Fas Drill® Frac Plugs, Bridge Plugs and Packers are designed to have a compatible setting procedure with commonly available powder type setting tools (HES, Baker, etc.). An adapter kit is needed to adapt the packer or plug to the setting tool.

Special Considerations:

- Always use the maximum number of shear screws/pins when setting all Fas Drill packers or plugs except with Baker 10 setting tools. See Baker setting instructions below.
- It is recommended to apply the Loctite provided with the Fas Drill packer or plug to the shear screws when making up to the adapter kit.
- Always use a powder charge that sustains a burn time longer than 15 seconds. Slow burning charges are available for most setting tools.
- Always run a gage ring and junk basket before setting the first packer or plug.
- When landing a ball on Fas Drill frac plugs the max rate is 12 BPM to seat the ball.
- All Fas Drill frac plugs can be run with the frac ball in place with an appropriate wireline adapter kit. Running the frac ball in place must be done when plugs are run in a dry well.
- Do not run the standard 1-11/16" HES (GO) Shorty Setting Tool, Use only 1-11/16" multi-stage or long stoke setting tools with these FAS DRILL packers or plugs.
- Document all tool OD's, ID, lengths, shop dates, and shear screw data prior to tool make-up and running in hole.
- In an event where plug is still attached to setting tool, Pull Out Of the Hole at a rate that is appropriate for the conditions not to exceed 100 ft/min.

Special Instructions for Baker Setting Tools

Note: *Baker 10 only* used to set Fas Drill Frac Plugs and Bridge Plugs. Install 5 shear screws only in the tool instead of 6 when using a Baker 10 setting tool. This is approximately 25,000 lbs. and is adequate setting force to set and shear off the tool effectively.

The following procedures should be followed when running Fas Drill packers and plugs with the Baker powder charge type setting tools.

- Expose oil chamber; hold in vertical position & tap down on piston, make sure it is down against shoulder.
- Fill chamber to corresponding mark on Baker oil level gauge in relation to temperature with 30W oil and reassemble setting tool.
- Use a slow burn set charge
- **Note: *Baker 10 only*** Prior to installing the Fas Drill packer or plug, back the lower portion of the setting tool off enough to expose the air relief holes in the side of the chamber. Install the Fas Drill plug and re-tighten the lower portion of the setting tool. This makes installing the plug easier because the set screw holes are totally exposed. This also reduces the gap between the outer sleeve of the adapter kit and the top shoulder of the plug thus conserving stroke.

Setting Procedure (additional information can be referenced at the end of this document)

1. Make up the coupling ring/tension mandrel and setting sleeve on setting tool. Tighten thread breaks (See Table below) between the adapter kit parts and the setting tool. Some adapter kits require the coupling ring/tension mandrel be shoved through the setting sleeve and made up on the setting tool mandrel before the setting sleeve is made up. Use clean - suitable API thread compound or grease on the mandrel and setting sleeve threads when making up to the setting tool.

KIT Size	Recommended Torque
2 ½ GO and smaller	80 to 100 lbf-in (108 to 136 N-m)
3 ½" GO and larger Baker 10 & 20	100 to 175 lbf-in (136 to 237 N-m)

2. Inspect plug for visual defects such as broken slips, damaged rubber, broken slip retaining bands, etc. Measure the plug OD above the top slips (Upper spacer ring) and below the lower slips (lower mule shoe) to ensure the proper plug is being run.
3. Slide the coupling ring/tension mandrel and setting sleeve over the top of the packer or plug.
4. Lower the setting tool/adapter kit over the top of the packer or plug so that the coupling ring/tension mandrel fully slides over the top and aligns the threaded holes with the holes in the mandrel. Ensure the setting sleeve does not contact the upper spacer ring, This could result in pre-loading of plug or packer components.
5. It is recommended to apply Loctite to the shear screws. Thread the shear screws through the coupling ring/tension mandrel into the holes in the mandrel. Holes in the setting sleeve allow access to the coupling ring/tension mandrel. Insert the screws into the coupling ring/tension mandrel and mandrel using a *star pattern*. Do not tighten the screws until all shear screws have been inserted. Tighten shear screws until the screws bottom out using the following table for recommended torque values.

Screw Size	Recommended Torque
3/8" 16 UNC	30 to 40 lbf-in (3.39 to 4.52 N-m)
1/4" 20 UNC	5 to 10 lbf-in (0.56 to 1.13 N-m)

6. Check the gap between the setting sleeve and the upper slip support.
   - For Baker setting tools this gap must be no less than 1/4" and no more than 3/4". If the gap falls outside this range, check the setting tool and/or the adapter kit to see where the error lies.
   - For HES (GO) setting tools, rotate the setting sleeve down toward the upper slip support until a 1/16" gap exists between the sleeve and upper spacer ring. Tighten the jam nut against the setting sleeve to lock the setting sleeve in place
7. Confirm pump rates and associated running speeds on the pump down calculator. Running speeds are only dictated by the rate allowed to stay below the fluid by-pass rating of individual plug assemblies.
   Composite Pump Down Plug Calculator
8. Confirm setting depth with customer. Set the packer or plug.

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FAS DRILL SLIDING VALVE PACKER OPERATION:

To operate the set Fas Drill Sliding Valve Packers, an operating mandrel or stinger must be run to the packer on pipe. This stinger seals the workstring and distributes weight to the slips and packer rubbers and the stinger operates the sliding valve. A centralizer, or star guide, helps to keep the stinger in the center of the casing to provide easy access to the packer bore.

- Run appropriate starguide and stinger on the workstring to just above the packer (10 ft minimum (3.3 m)).
  CAUTION: Do not suddenly impact the set packer with the star guide and stinger.
- Slowly lower the stinger into the packer bore and mark the pipe at the first indication on the weight indicator that the packer is taking weight. This is a reference mark for stinging in and out of the packer.
- To pressure test the workstring when using a Fas Drill Sliding Valve Packer, pick up 4"- 6" above the reference mark on the pipe.
- Pressure the workstring, taking care not to exceed the maximum differential pressure. Always bleed off pressure before moving the workstring.
- After pressure testing, pick up as high as possible before spotting fluids.

Note: Pressure testing the workstring can be accomplished by running a mechanical setting tool in the pressure test position instead of a star guide and stinger. The following "Mechanical Setting Tool" section (see pressure testing instruction under the Fas Drill Sliding Valve Packer) has details for this operation.

Slickline

The Fas Drill packers and plugs are designed to be set with the HES Downhole Power Unit on slickline. The DPU is a battery operated setting tool that requires no external pressure source or forces to set the packer or plug. Further details of the DPU's operation are available from the slickline engineering group in Carrollton, Texas. An adapter kit is needed to adapt packers and plugs to the DPU.

Setting Procedure

Follow the first five (5) steps in the Setting Procedure of the Electric Wireline Section of this document before completing the following steps:

6. Check the gap between the setting sleeve and the upper slip support. A minimum gap of 1/16" (2 mm) must be maintained between the setting sleeve and upper slip support. This gap can be adjusted by rotating the packer or plug.
7. Confirm setting depth with customer.
8. Confirm pump rates and associated running speeds on the pump down calculator. Running speeds are only dictated by the rate allowed to stay below the fluid by-pass rating of individual plug assemblies.
   Composite Pump Down Plug Calculator
9. Set the packer or plug.

Coiled Tubing

Two methods exist for setting Fas Drill packers and plugs on coiled tubing, hydraulically and pressure activated firing system. All the systems listed below can also be run on jointed tubing or drillpipe.

Pressure Activated Firing System

The Fas Drill packers and plugs can be set on coiled tubing using an HES or Baker wireline powder type setting tool and a Pressure Activated Firing Head (PAFH). This system allows operators to use readily available setting tools and adapter kits with coiled tubing. Details of the system and its operation are outlined in the Coiled Tubing Tools Manual 101335389. Setting procedures are identical to the Electric Wireline section of this document.

Hydraulically

The Fas Drill packers and plugs can be set on coiled tubing using a hydraulic setting tool and tubing pressure. The BP Hydraulic Setting Tool is designed to provide a setting tool that does not need a ball to operate. The HCT Hydraulic Setting Tool is designed to operate with a pumped down ball. Both systems set the Fas Drill packers and plugs but their different operating methods make each better for certain operating conditions.

HCT Hydraulic Setting Tool - Since the HCT Hydraulic Setting Tools are designed with a Baker and HES setting tool bottoms depending on size, conventional wireline setting kits will work with this setting tool. The 3.81" HCT HST has a Baker 20 bottom; the 1.81" HCT HST has a 1-11/16" HES (GO) bottom. Consult Drillable Tools Manual or Setting Adapter Kit information found on the Unconventional webpage for the correct setting kits.

Setting Procedure

Follow the first seven (7) steps in the Setting Procedure of the Electric Wireline Section of this document before completing the following steps:

8. Confirm setting depth with customer.
9. Take a weight check and note the reading. Insert the proper size ball (see below) into the coiled tubing and circulate it through the reel at 1 bbl/min. Continue pumping until the ball is approximately 1/2 the distance to the setting tool.

Assembly Number	Description	Ball Size
101203462	3.81" OD HCT Hydraulic Setting Tool	5/8"
120125425	1.81" OD HCT Hydraulic Setting Tool	7/16"

10. Stop pumping at the halfway mark and allow the ball to freefall for 15-20 minutes.
11. Resume pumping at 1/2 bbl/min while closely watching the pump pressure. If using a flapper check valve, it may be necessary to use short bursts at 1 bbl/min to pass the ball through the flappers.
12. When the pressure spikes; slow the pump and stage the pressure up in 1/3's with a 1-2 minute wait in between until the packer or plug sets and releases.
13. Pick up the coiled tubing to check for full release, then run down to tag the packer or plug to check set.
14. Pick up 5 -10 feet (1.5 -3 m) and resume pumping slowly. Pressure to shear the pins in the ball drop seat and open the bypass. **DO NOT** exceed 5000 psi (34,470 kpa).
15. Pull out of the hole. The bypass can be used to spot cement on top of the packer or plug before tripping out.

BP Hydraulic Setting Tool - The BP HST has unique adapter kits for adapting to Fas Drill packers and plugs.

There are two versions of the BP Hydraulic Setting Tool: fill and non-fill.

1. Fill Version - With the fill version, the workstring fills until reaching a predetermined, preset pressure. Shear pins installed during dressing control the operating pressure of the fill valve.
2. Non-Fill Version - The non-fill version requires the workstring to be filled from the surface.

In the fill version, a fill valve permits fluid to enter the workstring while going in the hole. Upon reaching a predetermined, preset hydrostatic pressure, the fill valve closes. Once the fill valve closes, the setting piston can be activated to set the packer or plug.

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In both versions, the setting piston is activated by applying a predetermined internal pressure to the workstring. This pressure shears the shear pins holding the setting piston, driving it down against the plug and setting the top slips. Further pressure fully sets the plug/packer.

After the plug/packer sets, the workstring should be raised 4-5 feet. Continued internal pressure to the workstring causes the setting piston to move down, opening the tool so circulation can be established. Cement can be spotted on top of the plug and the workstring pulled out of the hole.

Setting Procedure
Details for using BP Hydraulic Setting Tools are outlined in the Drillable Tools Manual. Consult this manual for the setting procedure for Fas Drill packers and plugs.

Mechanical Setting Tool

The Fas Drill packer and plugs are designed to have a compatible setting procedure with commonly available Halliburton mechanical setting tools. A setting kit is required that contains the proper lower end components so that the setting tool can set and function the packers and plugs.
It is NOT RECOMMENDED to set the 4 ½" or 5 ½" Fas Drill Bridge and Frac plugs with the Mechanical Setting Tool due to setting loads required to set the plugs.

Special Considerations
- Avoid all right hand rotation in tubing while running in hole with MST.
- Always use the maximum number of pins when setting the Fas Drill packer or plug.
- It is recommended to apply the Loctite provided with the Fas Drill packer or plug to the shear screws when making up the shear screws through the coupling ring/tension mandrel into the holes in the mandrel.
- Always make a bit and scraper run before setting any Fas Drill packer or plug.
- It is recommended that you wait a minimum of four (4) hours after fracturing down the casing before running the next plug or packer. This allows time for sand to settle from the casing. Running the packer or plug before waiting the minimum of four (4) hours increases the risk of not meeting the objective.
- Please note that it is not recommend that the 4 ½" and 5 ½" Fas Drill Bridge and Frac Plugs be set with the MST.

Setting Procedure
1. Before using the tool, check drag blocks and drag springs against part numbers on individual setting tools to match correct blocks and springs to casing size and weight.
2. Return setting tool split releasing ring or key to its groove in the setting tool mandrel to ensure the setting sleeve is locked properly.
3. Also, conduct a trial run with setting tool only in one or two joints of casing to help ensure the tool will pass through casing.
4. Lightly grease setting tool stinger seal and fully insert into the packer bore. The weight of one or two joints of tubing/drillpipe should be enough to move the stinger seal through the bore of the packer. If it is not enough, raise packer and tubing 2-3 inch(5-8 cm) and bump packer bottom on rig floor to force stinger into the packer.
5. It is recommended to apply Loctite to the shear screws. Thread shear screws through the coupling ring/tension mandrel into the holes in the mandrel. Holes in the setting sleeve allow access to the coupling ring/tension mandrel. Insert the screws into the coupling ring/tension mandrel and mandrel using a star pattern. Do not tighten the screws until all shear screws have been inserted. Tighten shear screws until the screws bottom out using the following table for recommended torque values.

Screw Size	Recommended Torque
3/8" 16 UNC	30 to 40 lbf-in (3.39 to 4.52 N-m)
1/4" 20 UNC	5 to 10 lbf-in (0.56 to 1.13 N-m)

6. Before running in the well, manually rotate setting sleeve down near the packer upper spacer ring and see how far the setting sleeve can be moved up.
   NOTE: If the setting sleeve moves up **more** than 1/2 inch (1 cm), the setting tool is not properly dressed. Disassemble setting tool to put the split ring releasing ring or key in its groove in the setting tool mandrel. If setting sleeve moves up **less** than 1/2 inch (1 cm), the split releasing ring or key is in the right place.
7. Rotate the setting sleeve to its uppermost position before running in well.
8. Start the packer and setting tool through surface equipment and first few joints of casing. The packer and setting tool may have to be pushed into the first joint of casing by using the weight of blocks and elevators. If so, be prepared to catch the tubing if the packer and setting tools start to drop suddenly in workstring elevators.
   Note: To catch a falling workstring, hold a strain on the workstring above the elevators using the rig catline. A short pup joint between the elevators and block hook can be used to directly apply block weight to workstring.
9. Avoid sudden stopping of workstring when running into the well. This could cause premature setting of upper slips and will prevent further downward movement into the well. The packer must then be set at this point and drilled out to clear the well bore.
10. Avoid sudden upward movement and clockwise rotation when removing workstring slips.
11. When the packer reaches setting depth in casing string, hook up steel hose and swivel to top of work string.
12. Start circulation around the packer while working up and down **five to ten** times to clear debris from tool. Do not work packer across perforations unnecessarily as this could damage the tool.
13. Stop circulation, and immediately rotate the workstring 20 turns (7" and larger tools can take 25 turns) to the right before solids have time to settle around the packer. Right-hand rotation moves the setting sleeve down to set the top packer slips.
14. Pull up on the workstring with force equal to the pipe weight plus **one-third** the shear screw parting load, and hesitate 1 to 2 minutes. Applying the load in stages and hesitating between loads expands the packer elements against casing for an initial seal.
    CAUTION: After setting top slips, do not apply weight to packer until the shear screws have parted. Weight could damage packer rubbers and slips.
15. Pull up again on the workstring with force equal to the pipe weight plus **two-thirds** the shear screw parting load, and hesitate for 1 to 2 minutes.
16. Pull until shear screws part.
17. After the shear screws part, apply up to 1/2 the maximum allowable weight (Consult Drillable Tools Manual or the Composite Packer, Bridge Plugs and Frac Plugs technical information found on the Unconventional webpage for the for the maximum allowable weight.) on the packer to help set slips and packer element.
18. To circulate the workstring after setting the packer, raise the workstring about 30 ft (9 m), or as high as possible, to avoid jetting debris into packer.

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Before squeeze cementing, test tubing as described below.

FAS DRILL Sliding Valve Packer

19. Rotate workstring 15 turns (10 turns on 7" and larger) to the right to place the mechanical setting tool in the pressure test position.
20. Tag the packer and set down weight up to 1/2 the maximum allowable weight(Consult Drillable Tools Manual or the Composite Packer, Bridge Plugs and Frac Plugs technical information found on the Unconventional webpage for the for the maximum allowable weight.). Additional weight can damage the LTD mechanical setting tool.
21. Pressure test the workstring taking care not to exceed the pressure rating of the packer. Bleed off pressure before moving the workstring.
22. Pick up workstring at least 5 feet (1.5 m) above the packer and rotate at least 20 additional turns to the right to function the setting tool to the operating position.
23. Set down workstring and sting back into the packer, setting weight up to the maximum allowable weight (Consult Drillable Tools Manual or the Composite Packer, Bridge Plugs and Frac Plugs technical information found on the Unconventional webpage for the for the maximum allowable weight.). Pump into the perforations to establish an injection rate.
24. Pick up out of the packer after shutting down pumps and raise the workstring as high above the packer as possible.
25. Spot cement taking care not to let cement exit the workstring.
26. Sting back into the packer after cement is spotted.

FAS DRILL PACKER OPERATION

The Fas Drill squeeze packers are operated by inserting the operating mandrel, or stinger, into the packer bore. This operation allows the stinger to seal the workstring, distribute weight to the slips and packer rubbers and operate a sliding valve. Always set as much weight as possible, up to the setting shear value, on the packer to help set tighter.

Note: Hydraulic forces can occur that add or subtract weight to or from the packer during the job. Hydraulic calculations must be completed before using the packer to help ensure against overloading or pumping out of the packer.

- After stinging in, set weight on the packer before pumping. Hydraulic calculations should determine the amount of weight placed on the packer at this time. At no time should the weight applied exceed the maximum weight listed in the Drillable Tools Manual or the Composite Packer, Bridge Plugs and Frac Plugs technical information found on the Unconventional webpage for the for the maximum allowable weight.
- Pump cement taking care not to exceed the maximum differential pressure (hydrostatic and/or pump pressure) of the packer.
- After placing cement, equalize pressure trapped in the workstring (or over pressure to help ensure reversing) with annulus pressure before stinging out. Seal damage can occur if the stinger is pulled out of the packer with greater than 500 psi (3450 kpa) differential pressure.
- Reverse excess cement from the workstring. Never pump cement up the annulus to clear the workstring.

FAS DRILL PACKER PUMP RATE RECOMMENDATION

The recommend Pump Rates for all the Fas Drill SVB tools:

Size range (in)	Rate for 1 hour max	Rate for >1 hour	Cement Weight
4-1/2 & 5-1/2	4 bbls/min	2 bbls/min	11 lb/gal
4-1/2 & 5-1/2	3 bbls/min	1 bbls/min	16.4 lb/gal
7 to 13-3/8	6 bbls/min	4 bbls/min	11 lb/gal
16 & 18	10 bbls/min	8 bbls/min	11 lb/gal

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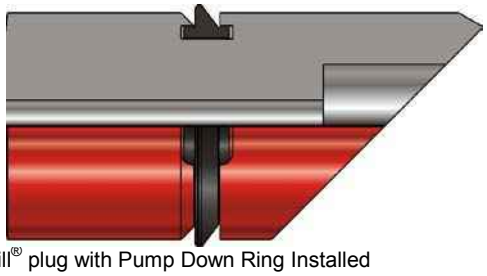
FAS DRILL FRAC PLUG OPERATION

To help prevent damage to the Fas Drill frac plug or frac ball, do not drop the ball from the surface if no fluid exists above the frac plug. When pumping a frac ball to seat on a Fas Drill frac plug, it is recommended to land it at a maximum rate of 12 bpm. All Fas Drill frac plugs can be run with the frac ball in place with an appropriate wireline adapter kit. Running the frac ball in place must be done when Fas Drill frac plugs are run in a dry well.

SUGGESTED PRACTICE FOR RUNNING COMPOSITE PLUGS IN HORIZONTAL APPLICATIONS

When running Composite Plugs on electric wireline using pump pressure to assist in achieving well depth, the following should be considered.

1. When pumping composite plugs in extend horizontal sections the first consideration should be the type of plug used. Please consult your local HES representative for tools specifically designed for these types of environments and applications. It should also be pointed out that for pump down applications some type of pumpdown assist is suggested. HES recommends installing our pump-down ring in the groove in the muleshoe as can be seen below, this HES design allows the rubber ring to fold over when restrictions are encountered. Field results have shown that using the pump-down ring can reduce the volume of fluid used and pump rate required to get the tools to bottom. For the purpose of this document we will be using a Fas Drill frac plug as the example.



Fas Drill® plug with Pump Down Ring Installed

2. Another point to consider is the Bottom Hole Assembly (BHA) length, OD and maximum build angle in the well. Please consult your local HES representative in your pre job planning
3. Check Fas Drill frac plug OD, measure plug and check part number to make sure you have the correct Fas Drill frac plug for the well conditions (i.e. BHST, expected differential pressure) and procedure. Confirm equipment is compatible with casing size and weight and document Fas Drill frac plug part number, revision level, shop date and the batch information from the shear screws. If a pump down ring is to be used, it should be noted that some locations have been using HOWCO weld to glue the rings into position.
4. It is recommended that a gauge ring and junk basket run is made prior to running the Fas Drill frac plug, to ensure the well is as clean as possible. Gauge ring OD's usually range from 0.03" to 0.06" larger than plug/tool OD with 0.06" being the preferred value. If there is a concern about the Fas Drill frac plug achieving setting depth, then it would be advisable to run a "dummy plug" made of aluminum the same length and 0.03" to 0.06" larger OD than the Fas Drill frac plug being used.
5. Ensure that the wireline setting tool is properly maintained and check to make sure the oil level is correct for the expected BHT and ensure all air is removed from lower chamber if oil is used. This is very critical to help ensure correct operation of the setting tool.
6. It is suggested to use a powder charge that sustains a burn time longer than 15 seconds in the setting tool.
7. Make up Fas Drill frac plug onto the setting tool using the correct setting adapter. The Fas Drill frac plug may be attached to the setting tool as follows:
    a. Use the holes in the setting sleeve to thread the shear screws through the coupling ring/tension mandrel into the holes in the mandrel.
    b. Install each shear screw with screwdriver half way into the tool.
    c. Install shear screws in a star pattern.
    d. Unless otherwise specified all shear screws should be installed.
    e. Continue to tighten shear screws up until they all bottom out in the Fas Drill frac plug, again in a star pattern.
8. Tighten setting sleeve to the setting tool. Ensure that the correct gap spacing is between the setting sleeve and tool.
9. Measure length from collar locator to top of Fas Drill frac plug. This length must be added to collar locator depth to set Fas Drill frac plug at correct depth.
10. Confirm setting depth with customer.
    NOTE: It is suggested that the Fas Drill frac plug be set a minimum of 50 ft away from any perforations. This will help ensure a good set and seal is established with the Fas Drill frac plug and help prevent any damage to the set Fas Drill frac plug when perforating above it.
11. Confirm pump rates and associated running speeds on the pump down calculator. Running speeds are only dictated by the rate allowed to stay below the fluid by-pass rating of individual plug assemblies.
    Composite Pump Down Plug Calculator
12. The BHA should be slowly stopped before correlating and/or entering the horizontal section.
    Note: When pumping these tool strings in the well it is critically important for good communication between the pumping unit and the logging unit to help ensure safety and successful job performance.
13. Reduce running in speed to 75 ft/min when 400 ft above the desired setting depth by adjusting the pump rate to maintain the 800 lbs to 1200 lbs line tension.
14. Run the top of the BHA slightly below the target setting depth and stop. Caution: Do not pass through any existing perforations below target setting depth.
15. Confirm setting depth with the customer and wireline operator to ensure proper Fas Drill frac plug placement.
16. Pull back up to the target setting depth while pumping at a minimum of ½ bpm, or as much as wireline tension allows. Note: It is not recommended to exceed 80% of the rope socket value.
17. Set the Fas Drill frac plug. Record time and date of plug set, plug setting depth and burn time on setting tool
18. When the setting tool has been removed for the well, inspect the setting tool for any damage or wear. Examine adapter kit for any damage or wear.
19. If the Fas Drill frac plug did not set properly attempt to determine if setting tool stroked properly and if the setting charge burned correctly. Record any batch or traceability information from the setting tool to assist in job analysis and document and take photographs of any anomalies.
20. Before leaving location, discuss drillout procedures with the customer and provide HES recommended drillout instructions provided with the tools.

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VIOLATION NO. 11753_____ DATE 10/25/21_____
FORM VI-28 API NO. 47-051-01622_____
(Rev. 7-01)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FINDING OF IMMINENT DANGER AND CEASE OPERATIONS ORDER

LOCATION: FARM NAME REINBEAU MSH 8H 835461 WELL NO.8H
DISTRICT Union COUNTY Marshall
TO: SWN Production Company, LLC DESIGNATED AGENT Brittany Woody
ADDRESS P. O. Box 12359 ADDRESS 1300 Fort Pierpont Drive, Ste 201
Spring, TX 77391-4954 Morgantown, WV 26508

Notice is hereby given that the undersigned, upon making an inspection of this well on October 25, 2021, found the existence of an imminent danger: __XXX___ that may cause death or serious physical harm to persons or; _____ that a fresh water supply will be lost or contaminated; before the condition can be abated. The imminent danger is a violation of West Virginia Code 22-6-3 and may result in any or all actions available to the Office under West Virginia Code 22-6, including but not limited to assessment of civil penalties, filing of misdemeanor charges, and injunctive relief. In addition, this is a violation of West Virginia Code 22-6 _____ and/or 35CSR, Series 8, Section 9.5, of the Legislative rules of the Office of Oil and Gas of the Department of Environmental Protection, set forth in detail as follows: (Use additional sheets as necessary)

Finding: Shale Production was on-site October 22. 2021 servicing a compressor. For reasons unknown at this time, fire broke out, possibly following an explosion, at approximately 5:17 PM, resulting in two injuries:a twisted ankle and a hurt arm. Ohio Valley VFD on scene, put out fire and secured enmergency shutdown. Some diesel, antifreeze, oil and possibly brine were spilled. Miller Environmenental on-site and doing cleanup.

Abatement and lifting the cease operations order requires the following:
1. Gain control of the the activities occurring on the Reinbau Pad
2. Submit to OOG and the Marshall County inspector, a report on or before November 1, 2021 that addresses the following:

A. Demonstrates a knowledge and understanding incident cause.
B. Demonstrates the ability to safely resume operations on the well pad.
C. Explains future plans of SOPs that will safeguard personnel.
D. Confirms that any possible pollutants were confined to the well pad.

Accordingly, you are hereby ordered to cease further operations until the undersigned has determined that the imminent danger has been abated.

Copies of this order have been posted at the wellsite and sent by certified or registered mail to the Designated Agent named above.

An informal conference with the Oil and Gas Inspector should be arranged prior to the date set forth above for abatement of the violation.

In accordance with West Virginia Code 22-6-4, you, or a complaining coal operator, owner, or lessee may apply for a formal hearing concerning this order with 15 days of this order.

SIGNED _____ ADDRESS _____
TITLE Oil and Gas Inspector P. O. Box 108
304-546-8171 Gormania, WV 26720

11/10/2016 PLUGGING PERMIT CHECKLIST

Plugging Permit

- [x] WW-4B
- [ ] WW-4B signed by inspector
- [x] WW-4A
- [x] SURFACE OWNER WAIVER or PROOF THAT APPLICATION WAS SENT BY REGISTERED OR CERITFIED MAIL
- [x] COAL OWNER/COAL OPERATOR/COAL LESSEE WAIVERS or PROOF THAT APPLICATION WAS SENT BY REGISTERED OR CERTIFIED MAIL
- [x] WW-9 PAGE 1 (NOTARIZED)
- [x] WW-9 PAGE 2 with attached drawing of road, location, pit and proposed area for land application
- [ ] WW-9 GPP PAGE 1 and 2 if well effluent will be land applied
- [x] RECENT MYLAR PLAT OR WW-7
- [x] WELL RECORDS/COMPLETION REPORT
- [x] TOPOGRAPHIC MAP OF WELL, SHOWING PIT IF PIT IS USED
- [x] MUST HAVE VALID BOND IN OPERATOR'S NAME
- [ ] CHECK FOR $100 IF PIT IS USED

WW-4A
Revised 6-07

1) Date: 2/16/2022
2) Operator's Well Number
CHESAPEAKE APPALACHIA LLC

3) API Well No.: 47 - 023 - 00020

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE 0F APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:
(a) Name: VIRGINIA ELECTRIC AND POWER CO
Address: PO BOX 27026
RICHMOND, VA 23267
(b) Name: UNITED STATES OF AMERICA/US FOREST SERVICE
Address: 1400 INDEPENDENCE AVE., SW
WASHINGTON, DC 20250
(c) Name:
Address:

6) Inspector: GAYNE J KNITOWSKI
Address: 601 57TH STREET SE
CHARLESTON WV 25304
Telephone: 304546-8171

5) (a) Coal Operator
Name:
Address:

(b) Coal Owner(s) with Declaration
Name: VIRGINIA ELECTRIC AND POWER CO
Address: PO BOX 27026
RICHMOND, VA 23267
Name: UNITED STAES OF AMERICA / US FOREST SERVICE
Address: 1400 INDEPENDENCE AVE., SW
WASHINGTON, DC 20250

(c) Coal Lessee with Declaration
Name:
Address:

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

(1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
(2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator: CHESAPEAKE APPALACHIA LLC
By: KERI FIENO
Its: REGULATORY SPECIALIST
Address: PO BOX 18496
OKLAHOMA CITY, OK 73154-0496
Telephone: 405-935-1154

Subscribed and sworn before me this _____ day of _____

_____ Notary Public

My Commission Expires _____

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyoffier@wv.gov.

WW-4B
Rev. 2/01

1) Date February 16, 2022
2) Operator's
Well No. VEPCO 2565
3) API Well No. 47- 23 - 00020

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil _____/ Gas X____/ Liquid injection _____/ Waste disposal _____/
(If "Gas, Production ____ or Underground storage ____) Deep ____/ Shallow____

5) Location: Elevation 3480' Watershed LUCINE CREEK
District UNION County GRANT Quadrangle BLACKBIRD KNOB

6) Well Operator CHESAPEAKE APPALACHIA LLC
Address PO BOX 18496
OKLAHOMA CITY, OK 73154-0496

7) Designated Agent ERIC HASKINS - MANAGER REG OPS
Address 14 CHESAPEAKE LANE
SAYRE, PA 18840

8) Oil and Gas Inspector to be notified
Name GAYNE J KNITOWSKI
Address 601 57TH STREET SE
CHARLESTON, WV 25304

9) Plugging Contractor
Name PLANTS AND GOODWIN
Address 360 HIGH STREET
BRADFORD, PA 16701

10) Work Order: The work order for the manner of plugging this well is as follows:

SEE ATTACHED

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector _____ Date _____

VEPCO 2565
Property Number: 821704
AFE#: 1010392
WO#: 4000478997
AFE Estimate: $623880

Reason for P&A:

The Vepco 2565 well in Grant County, West Virginia will be plugged and abandoned. This well is on federal land. Chesapeake has agreed to P&A this well in accordance to the request of the WVDEP and BLM. No future potential remains in this wellbore.

Summary:

The Vepco 2565 was drilled in 1987. The P&A will consist of pulling 2-3/8" tubing and a CIBP will be set above the top perf. A cement plug will be set in the 5-1/2" casing above the CIBP. A CBL will be run to find TOC behind 5-1/2" casing and cut pipe 100' above and pull same. All free pipe should attempt to be pulled 1-1.5x string weight. A caliper log will be run on open hole section to determine open hole size then a CBL will be run on 9 5/8" casing to verify TOC behind 9 5/8" casing. A cement plug will be set in the open hole portion and across 9-5/8" shoe. There will be a final cement plug set at surface after ensuring no annular gas exists.

Plan Going Forward:

NOTE: Two barriers are required through the course of this work. Please reference Chesapeake Barrier Standard and consult Superintendent, Foreman, and Engineer if you have any questions or concerns.

1. MIRU WOR & Equipment.

2. Kill well with water. ND well head and NU 7 1/16" 5K double ram BOP.

3. Pull 9700' of 2 3/8" tubing

4. RU wireline and run gauge ring to 9350'/ RIH with CIBP and set at 9350'.

5. TIH with work string to top of CIBP.

6. Load hole with fresh water (capacity of 5 ½" casing is 207 bbls). Pump 89 bbls of gel water followed by 8 bbls (38 sacks) of Class H neat cement from 9350' to 9000'. Displace cement with 34 bbls of gel water. POOH/WOC. Monitor 5 ½" for pressure build overnight.

7. NU annular BOP/RU wireline, tag cement plug at ~9000'. Run CBL on 5 ½" casing to find TOC behind pipe. Use a jet cutter to cut the 5 ½" ~100' above TOC.

8. POOH with 5 ½" casing (Calculated free pipe is approximately 9000').

9. RU wireline and run caliper log on open hole section to determine hole size. Run CBL on 9 5/8" casing to determine TOC behind 9 5/8" casing.

10. TIH with tubing to 5 ½" stub. Pump 367 bbls of gel water followed by 30 bbls (143 sacks) of Class H neat cement (Estimated plug depth is 9000' to 8600'). Displace cement with 33 bbls gel water. POOH/WOC. Monitor pressure build on 9 5/8" casing.

11. TIH with tubing to tag cement plug at ~8600'.

12. Pull tubing back to 3700' and pump 208 bbls of gel water followed by 30 bbls (143 sacks) of Class H neat cement from 3700' to 3300'. Displace cement with 12 bbls of gel water. POOH/WOC.

13. TIH with tubing to tag plug at ~3300'. Pull tubing back to 400'. Pump 30 bbls (143 sacks) of Class H neat cement from 400' to 0'.

14. RDMO.

Well Information	
Well Name	VEPCO 2565
Location	West Virgina
Formation	Oriskany
PN#	821704
AFE#	1010392
WO#	4000478997
WBS	PA-1082170400-01
API#	47-023-00020
Latitude	39.0734781
Longitude	-79.2942593

Contact Information			
Title	Name	E-mail	Phone
Production Engineer	JJ Kim	jj.kim@chk.com	(405) 596-0720
Production Engineer (Secondary)			
Production Manager	John Van Gels	john.vangels@chk.com	(636) 448-1104
Production Supervisor	Keeley Bergman	keeley.bergman@chk.com	(918) 991-5520
Production Superintendent	Chris Sprute	chris.sprute@chk.com	(318) 771-2769
Workover Foreman	Lucas Welch	lucas.welch@chk.com	(570) 423-4236
Regulatory Manager	Eric Haskins	eric.haskins@chk.com	(607) 242-3839
DEP Contact	Jeffrey. W. McLaughlin	Jeffrey.W.McLaughlin@wv.gov	(304) 926-0440
BLM Contact	Trey Mitchell	tmitchell@blm.gov	(414) 297-4438

Map View



Classification: DCL-Internal

CHESAPEAKE ENERGY

RKB	Variable
KOP	N/A
Depth of Top Perf (MD)	9,396'
Cement Yield	1.17 cu.ft/sk
Density	15.6 ppg

Casing Detail

String	OD (in)	ID (in)	Weight (lbs/ft)	Grade	Casing Cap (bbl/ft)	Annular Cap (bbl/ft)	Top (ft-MD)	Bttm (ft-MD)	TOC	Hole Size
Intermediate	9.625	8.835	40	J-55	0.076		0	3,502	Surface	Unknown
Production	5.5	4.892	17	N-80	0.023		0	9,887	9,200	Unknown

Tubing Design

Item/No	OD (in)	ID (in)	Description	Length (ft)	Depth (ft-MD)
2-3/8" Tubing	2.375	1.995	Records show N-80 Tubing	32.5	9,700

Estimated Plug Set Depths and Cement Needed

Item	Plug Height	Top of Plug	Bottom of Plug	Cement Type	% Excess Cmt	Cement Sacks	Gel Volume (BBL)	Displacement Volume (BBL)
Plug 1	350'	9,000'	9,350'	Class H	0%	38	89	34
Plug 2	400'	8,600'	9,000'	Class H	0%	143	367	33
Plug 3	400'	3,300'	3,700'	Class H	0%	157	208	12
Plug 4	400'	0'	400'	Class H	0%	143	0	0
Plug 5								
Plug 6								
Plug 7								
Plug 8								
Plug 9								
Plug 10								

Plugging Details

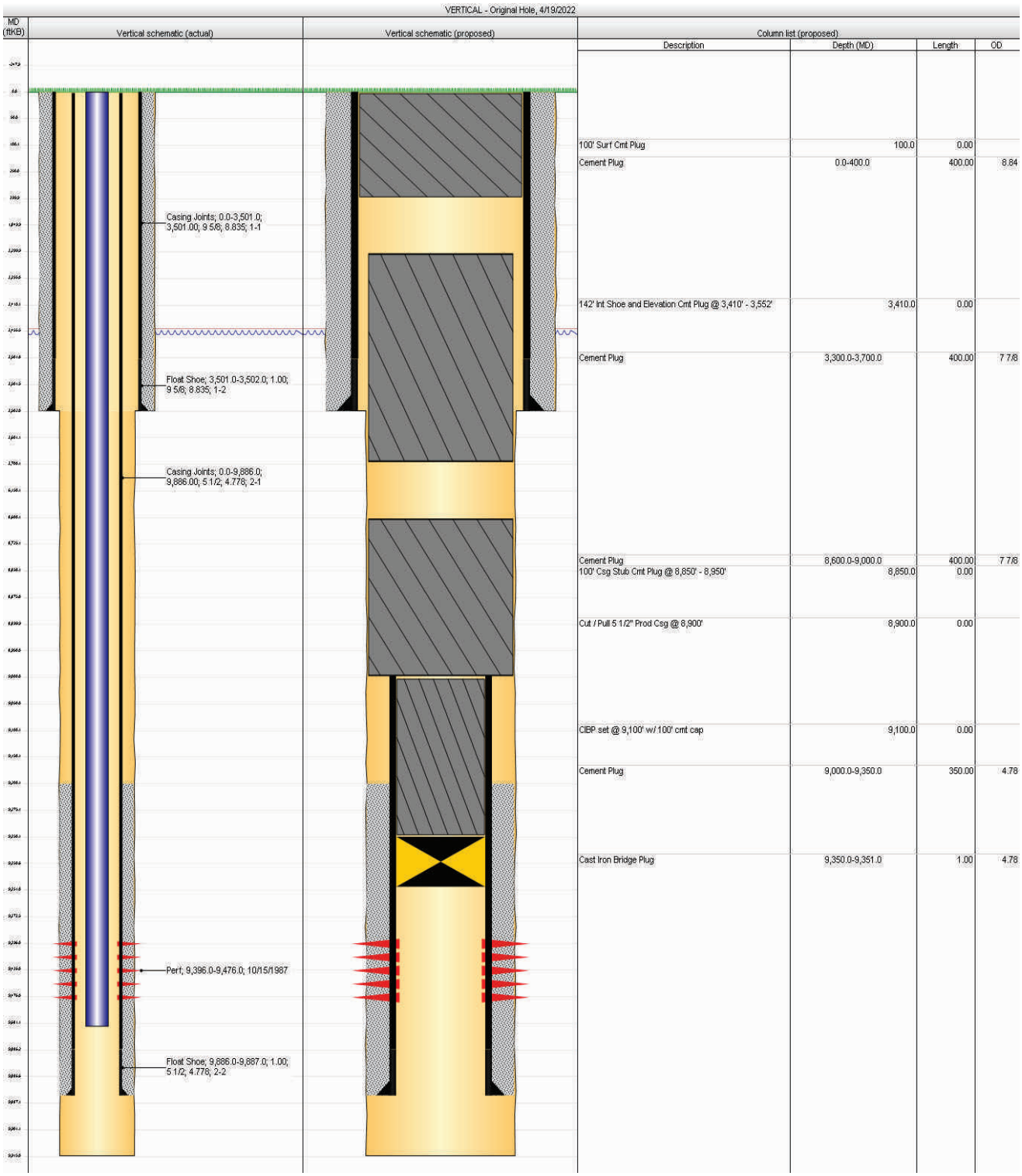
Plug #	Depth Code	Depth	Csg or Open Hole?	Peforate?	Cmt Behind Csg
Plug 1	5-1/2" Casing Plug	9,350'	Csg	N/A	Yes
Plug 2	5-1/2" Casing Plug	9,000'	Csg	N/A	Yes
Plug 3	Open Hole Plug	8,600'	Open Hole	N/A	No
Plug 4	9-5/8" Shoe and OH Plug	3,300'	Open Hole and Casing	N/A	Mixed
Plug 5	9-5/8" Surface Plug	0'	Casing	N/A	Yes
Plug 6					
Plug 7					
Plug 8					
Plug 9					
Plug 10					

Please Note: All gel spacers between plugs will exceed 9 ppg

Classification: DCL-Internal

CHESAPEAKE ENERGY

RKB	Variable
KOP	N/A
Depth of Top Perf	9,396'
Cement Yield	1.17 cu.ft/sk
Density	15.6 ppg



Column list (proposed)

Description	Depth (MD)	Length	OD
100' Surf Cmt Plug	100.0	0.00	
Cement Plug	0.0-400.0	400.00	8.84
142' Int Shoe and Elevation Cmt Plug @ 3,410' - 3,552'	3,410.0	0.00	
Cement Plug	3,300.0-3,700.0	400.00	7 7/8
Cement Plug	8,600.0-9,000.0	400.00	7 7/8
100' Csg Stub Cmt Plug @ 8,850' - 8,950'	8,850.0	0.00	
Cut / Pull 5 1/2" Prod Csg @ 8,900'	8,900.0	0.00	
CIBP set @ 9,100' w/ 100' cmt cap	9,100.0	0.00	
Cement Plug	9,000.0-9,350.0	350.00	4.78
Cast Iron Bridge Plug	9,350.0-9,351.0	1.00	4.78

WW-9
(5/16)

API Number 47 - 023 - 00020
Operator's Well No. VEPCO 2565

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name CHESAPEAKE APPALACHIA LLC OP Code 2528

Watershed (HUC 10) LUNINE CREEK Quadrangle BLACKBIRD KNOB

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ☑ No ☐

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste: _____

Will a synthetic liner be used in the pit? Yes ☐ No ☐ If so, what ml.?_____

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application (if selected provide a completed form WW-9-GPP)
_____ Underground Injection (UIC Permit Number_____)
_____ Reuse (at API Number_____)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
_____ Other (Explain_____

Will closed loop system be used? If so, describe: DRILL CUTTINS WILL BE CIRCULATED BACK INTO AN OPEN TANK

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. FRESH WATER

-If oil based, what type? Synthetic, petroleum, etc. N/A

Additives to be used in drilling medium? NONE

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. LANDFILL

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) SAWDUST AND CITRIC ACID

-Landfill or offsite name/permit number? KIMBLE SANITARY LANDFILL OR MUD MASTERS

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature_____

Company Official (Typed Name) KERI FIENO

Company Official Title REGULATORY SPECIALIST

Subscribed and sworn before me this_____ day of_____, 20_____

_____ Notary Public

My commission expires_____

Form WW-9

Operator's Well No. VEPCO 2565

Proposed Revegetation Treatment: Acres Disturbed 10 Prevegetation pH _____

Lime 3.90 Tons/acre or to correct to pH 7

Fertilizer type 8-16-16 +

Fertilizer amount 968 lbs/acre

Mulch 3 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
OATS/ANNUAL RYE	40LBS/ACRE	BIRDSFOOT TREFOIL	8LBS/ACRE
HAY/STRAW MULCH	3 TONS/ACRE	TALL FESCUE	40LBS/ACRE

Attach:
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: _____

Comments: _____

Title: _____ Date: _____

Field Reviewed? (_____) Yes (_____) No

Classification: DCL-Internal

RECOMMENDED PERMANENT SEEDING MIXTURE FOR ALL DISTURBED AREAS

MIXTURE NUMBER	SEASON	SPECIES	SEEDING RATE (lb/ac)
2	COOL	BIRDSFOOT TREFOIL TALL FESCUE	8 / 40

MULCHING

MATERIAL SHALL BE HAY OR STRAW WHICH IS FREE OF WEED AND SEEDS, NOT MOLDY, ROTTEN, AND SHALL BE APPLY TO ALL SLOPES FATTER THAN 3:1 AT A RATE OF 140 LBS/1,000 SF. (APPROXIMATELY TWO BALES PER 1,000 SF OR 3 TON PER AC)

HYDROSEEDING SPECIFICATION

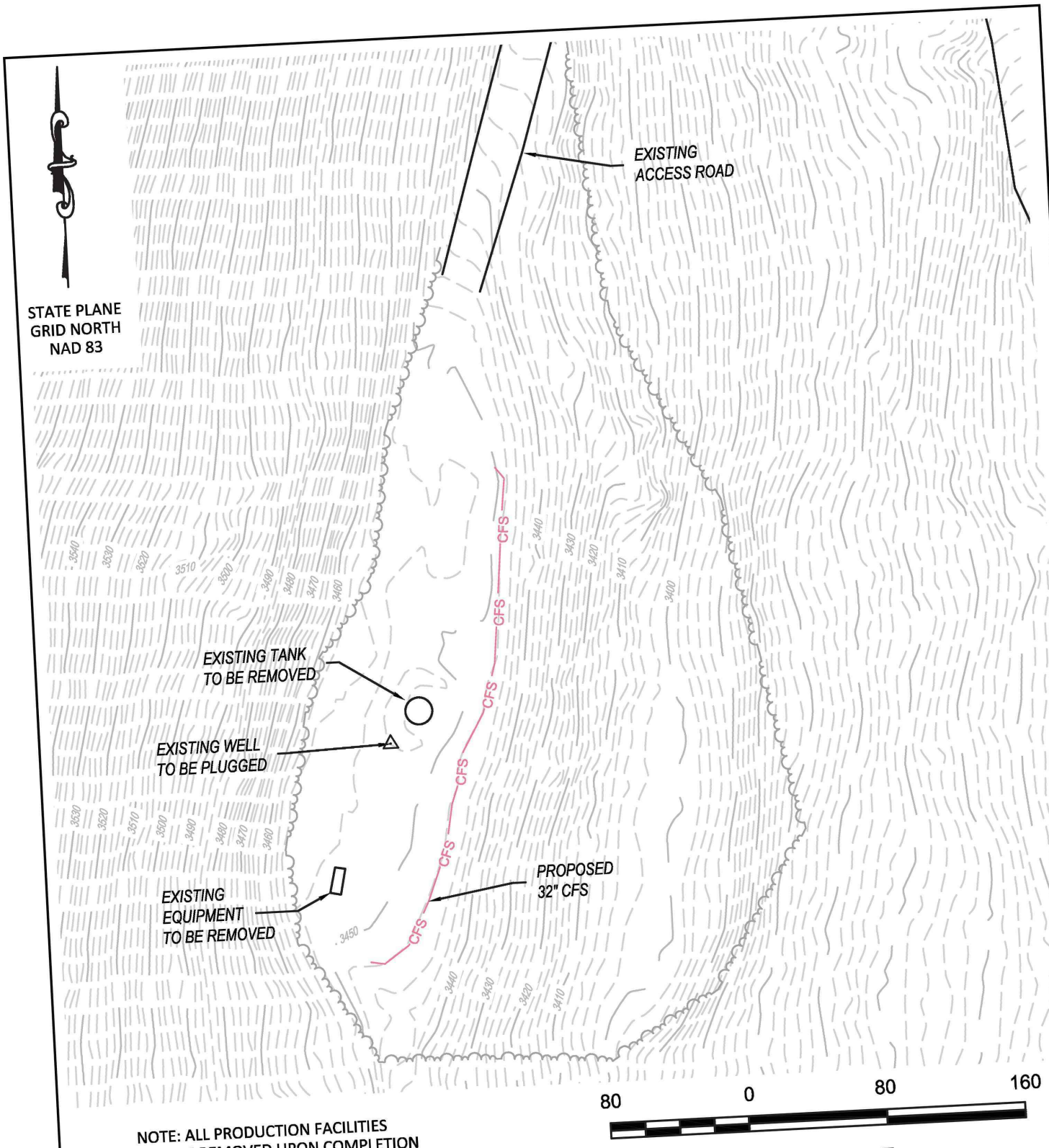
MATERIAL	DESCRIPTION	APPLICATION RATE (PER 1,000 SY)
(1) SEE MIXTURE (% BY WEIGHT)	REDTOP – 10% PENNLAWN FESCUE – 45% KENTUCKY BLUEGRASS – 45%	27 LBS
(2) 8–16–16	COMMERCIAL FERTILIZER	200 LBS
(3) LIME	GROUND COMMERCIAL LIMESTONE	1,650 LBS
(4) MULCH	WOOD CELLULOSE FIBER	750 LBS

APPROXIMATE TACK COAT

PROCEDURE: SURFACE TO BE HYDROSEEDED SHALL BE CLEANED OF ALL DEBRIS AND OTHER MATTER HARMFUL TO UNIFORM GERMINATION. A WATER–SURRY MIXTURE COMMPOSED OF THE ABOVE "MATERIALS". ITEMS (1) THROUGHT (3) INCLUSIVE, SHALL BE SPRAYED UNIFORMLY OVER THE AREAS TO BE HYDROSEEDED. IMMEDIATELY, THEREAFTER, ITEM (4) "MULCH" SHALL BE BLOWN ON THE SAME AREA AND TACK–COATED. RATES AND TYPE OF MATERIALS SHALL BE SPECIFIED.

MAINTENANCE AND GUARANTEE

THE CONTRACTOR SHALL GUARANTEE A GOOD STAND OF GRASS IN THE SWALES AND ON BANKS. THE MEANS OF GUARANTEE SHALL BE BY WATERING, MOWING, REGRADING, REMULCHING, AND RESEEDING TO THE SATISFACTION OF THE OWNER UNTIL FINAL ACCEPTANCE. ANY AREAS WHICH FAIL TO SHOW A UNIFORM STAND WITHIN ONE YEAR SHALL BE RESEEDED AND REMULCHED AT THE CONTRACTORS EXPENSE WITH THE SAME MIXTURE ORIGINALLY USED THEREON. ERODED AREAS SHALL BE REPAIRED AND RESTORED TO FINISHED GRADE PRIOR TO RESEEDING AND REMULCHING. ALL SUCH REPAIRING OF EROSION, RESEEDING, AND REMULCHING SHALL BE REPEATED UNTIL ALL EFFECTED AREAS ARE COVERED WITH GRASS.



NOTE: ALL PRODUCTION FACILITIES WILL BE REMOVED UPON COMPLETION OF THE PLUGGING OPERATIONS.

VEPCO 2565
SITE RECLAMATION
API# 47-023-00020

FOR

CHESAPEAKE ENERGY

LOCATED IN

GRANT COUNTY, WEST VIRGINIA

SITE PLAN

FILE STATUS	DATE	SHEET
FINAL	02/08/2022	1

LEGEND

- EXISTING CONTOUR
- EXISTING TREE LINE
- EXISTING ACCESS ROAD EDGE
- WELLHEAD
- COMPOSITE FILTER SOCK (CFS)

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WW-7
8-30-06

West Virginia Department of Environmental Protection
Office of Oil and Gas
WELL LOCATION FORM: GPS

API: 47-023-00020 **WELL NO.:** 2565

FARM NAME: VEPCO

RESPONSIBLE PARTY NAME: CHESAPEAKE APPALACHIA LLC

COUNTY: GRANT **DISTRICT:** UNION

QUADRANGLE: BLACKBIRD KNOB

SURFACE OWNER: VIRGINIA ELECTRIC AND POWER CO

ROYALTY OWNER: VIRGINIA ELECTRIC AND POWER CO

UTM GPS NORTHING: 39.0734781

UTM GPS EASTING: -79.2942593 **GPS ELEVATION:** 3480'

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:

Survey grade GPS X : Post Processed Differential X

Real-Time Differential _____

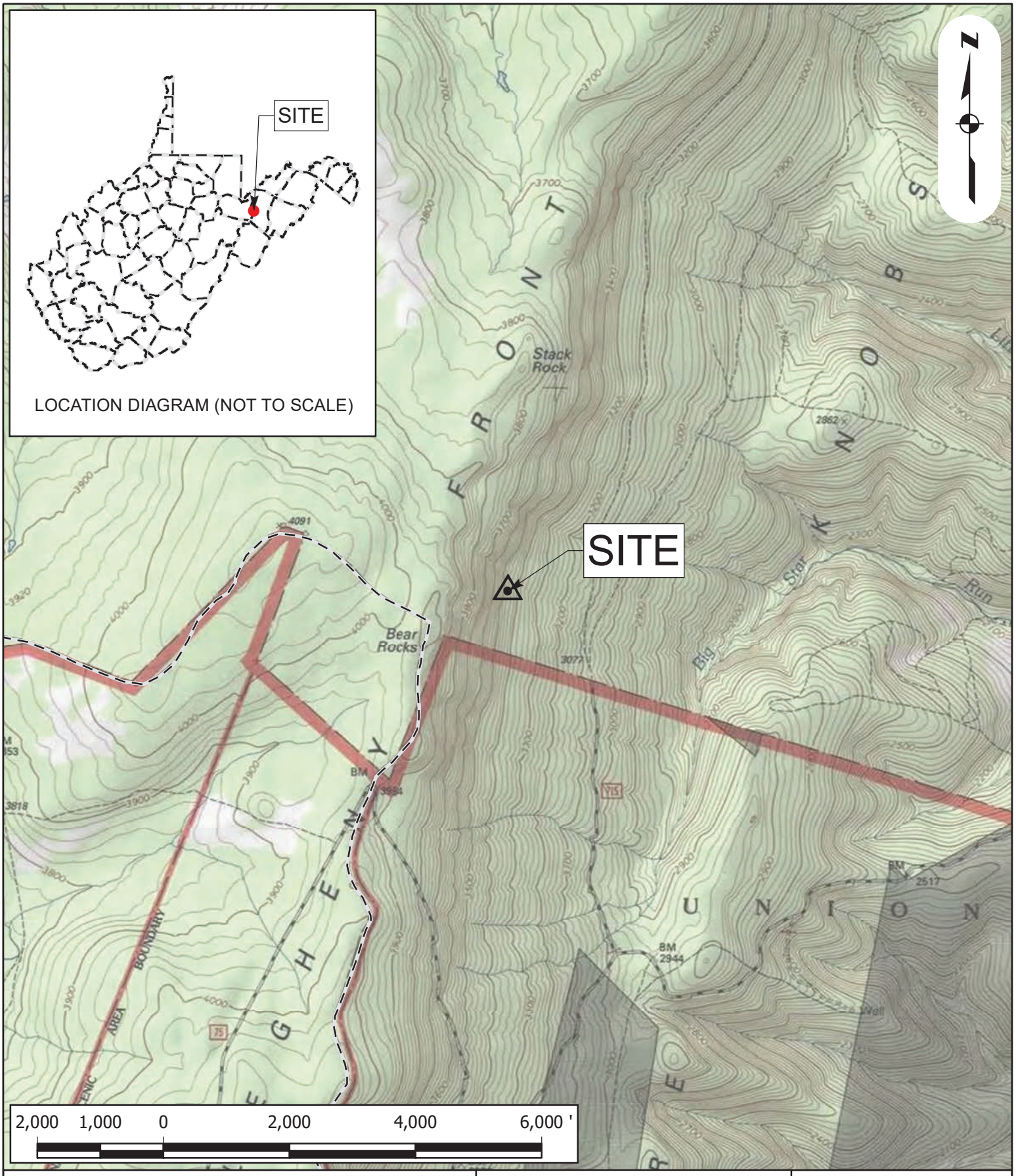
Mapping Grade GPS ____: Post Processed Differential _____

Real-Time Differential _____

4. **Letter size copy of the topography map showing the well location.**

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

	REGULATORY SPECIALIST	
Signature	Title	Date



USGS LOCATION MAP

PREPARED FOR

VEPCO 2565 SITE

GRANT COUNTY, WEST VIRGINIA
BLACKBIRD KNOB USGS QUAD

PROJECT -	VEPCO 2565
DATE -	2/8/2022
SCALE -	1 " = 2,000 '
DRAWN -	JKANE
FILE -	VEPCO 2565_USGS_LOCATION_MAP.mxd

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Casing Offload Tally

Well Name: CARL ROTTER OHI 8 **Intermediate, Set Depth: 2,211.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003300000	4001165868	SWN PRODUCTION COMPANY L...	1,336.70	25.30	1,362.00 KB2,9/16/2020 00:00	3/30/2022 14:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Intermediate	2,211.00	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	9.625	36.00		Yes	1.88	No	Weatherford Float Shoe		2,209.1	1.88
2	1	Casing Joints	9.625	36.00	K-55	Yes	38.09	Yes			2,171.0	39.97
3		Float Collar	9.625	36.00		Yes	1.49	No	Weatherford Float Collar		2,169.5	41.46
4	2	Casing Joints	9.625	36.00	K-55	Yes	37.73	Yes			2,131.8	79.19
5	3	Casing Joints	9.625	36.00	K-55	Yes	36.86	Yes			2,095.0	116.05
6	4	Casing Joints	9.625	36.00	K-55	Yes	37.74	Yes			2,057.2	153.79
7	5	Casing Joints	9.625	36.00	K-55	Yes	36.89	No			2,020.3	190.68
8	6	Casing Joints	9.625	36.00	K-55	Yes	38.12	Yes			1,982.2	228.80
9	7	Casing Joints	9.625	36.00	K-55	Yes	38.11	No			1,944.1	266.91
10	8	Casing Joints	9.625	36.00	K-55	Yes	38.13	Yes			1,906.0	305.04
11	9	Casing Joints	9.625	36.00	K-55	Yes	37.30	No			1,868.7	342.34
12	10	Casing Joints	9.625	36.00	K-55	Yes	37.70	Yes			1,831.0	380.04
13	11	Casing Joints	9.625	36.00	K-55	Yes	36.77	No			1,794.2	416.81
14	12	Casing Joints	9.625	36.00	K-55	Yes	36.76	Yes			1,757.4	453.57
15	13	Casing Joints	9.625	36.00	K-55	Yes	38.85	No			1,718.6	492.42
16	14	Casing Joints	9.625	36.00	K-55	Yes	38.95	Yes			1,679.6	531.37
17	15	Casing Joints	9.625	36.00	K-55	Yes	36.60	No			1,643.0	567.97
18	16	Casing Joints	9.625	36.00	K-55	Yes	37.94	Yes			1,605.1	605.91
19	17	Casing Joints	9.625	36.00	K-55	Yes	36.86	No			1,568.2	642.77
20	18	Casing Joints	9.625	36.00	K-55	Yes	37.74	Yes			1,530.5	680.51
21	19	Casing Joints	9.625	36.00	K-55	Yes	36.35	No			1,494.1	716.86
22	20	Casing Joints	9.625	36.00	K-55	Yes	36.46	Yes			1,457.7	753.32
23	21	Casing Joints	9.625	36.00	K-55	Yes	37.73	No			1,420.0	791.05
24	22	Casing Joints	9.625	36.00	K-55	Yes	36.17	Yes			1,383.8	827.22
25	23	Casing Joints	9.625	36.00	K-55	Yes	37.73	No			1,346.1	864.95
26	24	Casing Joints	9.625	36.00	K-55	Yes	35.87	Yes			1,310.2	900.82
27	25	Casing Joints	9.625	36.00	K-55	Yes	38.08	No			1,272.1	938.90
28	26	Casing Joints	9.625	36.00	K-55	Yes	38.08	Yes			1,234.0	976.98
29	27	Casing Joints	9.625	36.00	K-55	Yes	36.22	No			1,197.8	1,013.20
30	28	Casing Joints	9.625	36.00	K-55	Yes	38.34	Yes			1,159.5	1,051.54
31	29	Casing Joints	9.625	36.00	K-55	Yes	36.55	No			1,122.9	1,088.09
32	30	Casing Joints	9.625	36.00	K-55	Yes	34.53	Yes			1,088.4	1,122.62
33	31	Casing Joints	9.625	36.00	K-55	Yes	38.12	No			1,050.3	1,160.74
34	32	Casing Joints	9.625	36.00	K-55	Yes	39.29	Yes			1,011.0	1,200.03
35	33	Casing Joints	9.625	36.00	K-55	Yes	37.70	No			973.3	1,237.73
36	34	Casing Joints	9.625	36.00	K-55	Yes	37.73	Yes			935.5	1,275.46
37	35	Casing Joints	9.625	36.00	K-55	Yes	38.04	No			897.5	1,313.50
38	36	Casing Joints	9.625	36.00	K-55	Yes	38.61	Yes			858.9	1,352.11
39	37	Casing Joints	9.625	36.00	K-55	Yes	38.55	No			820.3	1,390.66
40	38	Casing Joints	9.625	36.00	K-55	Yes	38.67	Yes			781.7	1,429.33
41	39	Casing Joints	9.625	36.00	K-55	Yes	35.37	No			746.3	1,464.70
42	40	Casing Joints	9.625	36.00	K-55	Yes	38.56	Yes			707.7	1,503.26
43	41	Casing Joints	9.625	36.00	K-55	Yes	36.52	No			671.2	1,539.78
44	42	Casing Joints	9.625	36.00	K-55	Yes	38.16	Yes			633.1	1,577.94
45	43	Casing Joints	9.625	36.00	K-55	Yes	37.73	No			595.3	1,615.67
46	44	Casing Joints	9.625	36.00	K-55	Yes	35.78	Yes			559.6	1,651.45
47	45	Casing Joints	9.625	36.00	K-55	Yes	37.74	No			521.8	1,689.19
48	46	Casing Joints	9.625	36.00	K-55	Yes	37.09	Yes			484.7	1,726.28
49	47	Casing Joints	9.625	36.00	K-55	Yes	37.72	No			447.0	1,764.00
50	48	Casing Joints	9.625	36.00	K-55	Yes	37.49	Yes			409.5	1,801.49
51	49	Casing Joints	9.625	36.00	K-55	Yes	38.11	No			371.4	1,839.60
52	50	Casing Joints	9.625	36.00	K-55	Yes	38.09	Yes			333.3	1,877.69
53	51	Casing Joints	9.625	36.00	K-55	Yes	37.79	No			295.5	1,915.48
54	52	Casing Joints	9.625	36.00	K-55	Yes	38.13	Yes			257.4	1,953.61
55	53	Casing Joints	9.625	36.00	K-55	Yes	38.05	No			219.3	1,991.66
56	54	Casing Joints	9.625	36.00	K-55	Yes	37.74	Yes			181.6	2,029.40
57	55	Casing Joints	9.625	36.00	K-55	Yes	36.18	No			145.4	2,065.58
58	56	Casing Joints	9.625	36.00	K-55	Yes	38.14	Yes			107.3	2,103.72
59	57	Casing Joints	9.625	36.00	K-55	Yes	35.73	No			71.6	2,139.45
60	58	Casing Joints	9.625	36.00	K-55	Yes	37.54	No			34.0	2,176.99
61		Mandrel Hanger	9.625	36.00		Yes	1.00	No	Mandrel Hanger		33.0	2,177.99
62		Landing Joint	9.625	36.00		Yes	36.70	No	Landing Joint		-3.7	2,214.69
	59	Casing Joints	9.625	36.00	K-55	No	36.81	No	Out #1			
	60	Casing Joints	9.625	36.00	K-55	No	35.06	No	Out #2			
	61	Casing Joints	9.625	36.00	K-55	No	36.85	No	Out #3			
		Casing Joints	9.625	36.00	K-55	No	20.97	No	20' Pup Joint - Out			
		Casing Joints	9.625	36.00	K-55	No	10.22	No	10' Pup Joint - Out			

Casing Offload Tally

Well Name: BETTY SCHAFER MSH 1 **Intermediate, Set Depth: 1,714.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47051023820000	4001163434	SWN PRODUCTION COMPANY L...	848.40	26.70	875.10 KB1,10/20/2020 14:34	2/9/2022 09:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	MARSHALL	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Intermediate	1,714.00	2/12/2022 11:30

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	9.625	36.00		Yes	1.89	No	Weatherford Float shoe		1,712.1	1.89
2	1	Casing Joints	9.625	36.00	J-55	Yes	37.78	Yes	BS		1,674.3	39.67
3		Float Collar	9.625	36.00		Yes	1.48	No	Weatherford Float Collar		1,672.9	41.15
4	2	Casing Joints	9.625	36.00	J-55	Yes	36.94	Yes	BS		1,635.9	78.09
5	3	Casing Joints	9.625	36.00	J-55	Yes	37.79	Yes	BS		1,598.1	115.88
6	4	Casing Joints	9.625	36.00	J-55	Yes	38.72	Yes	BS		1,559.4	154.60
7	5	Casing Joints	9.625	36.00	J-55	Yes	34.90	No			1,524.5	189.50
8	6	Casing Joints	9.625	36.00	J-55	Yes	36.13	Yes	BS		1,488.4	225.63
9	7	Casing Joints	9.625	36.00	J-55	Yes	38.89	No			1,449.5	264.52
10	8	Casing Joints	9.625	36.00	J-55	Yes	38.73	Yes	BS		1,410.8	303.25
11	9	Casing Joints	9.625	36.00	J-55	Yes	35.97	No			1,374.8	339.22
12	10	Casing Joints	9.625	36.00	J-55	Yes	36.80	Yes	BS		1,338.0	376.02
13	11	Casing Joints	9.625	36.00	J-55	Yes	36.75	No			1,301.2	412.77
14	12	Casing Joints	9.625	36.00	J-55	Yes	36.70	Yes	BS		1,264.5	449.47
15	13	Casing Joints	9.625	36.00	J-55	Yes	39.36	No			1,225.2	488.83
16	14	Casing Joints	9.625	36.00	J-55	Yes	38.75	Yes	BS		1,186.4	527.58
17	15	Casing Joints	9.625	36.00	J-55	Yes	35.50	No			1,150.9	563.08
18	16	Casing Joints	9.625	36.00	J-55	Yes	37.10	Yes	BS		1,113.8	600.18
19	17	Casing Joints	9.625	36.00	J-55	Yes	36.22	No			1,077.6	636.40
20	18	Casing Joints	9.625	36.00	J-55	Yes	35.10	Yes	BS		1,042.5	671.50
21	19	Casing Joints	9.625	36.00	J-55	Yes	38.81	No			1,003.7	710.31
22	20	Casing Joints	9.625	36.00	J-55	Yes	37.23	Yes	BS		966.5	747.54
23	21	Casing Joints	9.625	36.00	J-55	Yes	36.88	No			929.6	784.42
24	22	Casing Joints	9.625	36.00	J-55	Yes	35.50	Yes	BS		894.1	819.92
25	23	Casing Joints	9.625	36.00	J-55	Yes	38.38	No			855.7	858.30
26	24	Casing Joints	9.625	36.00	J-55	Yes	37.87	Yes	BS		817.8	896.17
27	25	Casing Joints	9.625	36.00	J-55	Yes	36.94	No			780.9	933.11
28	26	Casing Joints	9.625	36.00	J-55	Yes	37.25	Yes	BS		743.6	970.36
29	27	Casing Joints	9.625	36.00	J-55	Yes	36.98	No			706.7	1,007.34
30	28	Casing Joints	9.625	36.00	J-55	Yes	35.72	Yes	BS		670.9	1,043.06
31	29	Casing Joints	9.625	36.00	J-55	Yes	37.81	No			633.1	1,080.87
32	30	Casing Joints	9.625	36.00	J-55	Yes	37.55	Yes	BS		595.6	1,118.42
33	31	Casing Joints	9.625	36.00	J-55	Yes	37.35	No			558.2	1,155.77
34	32	Casing Joints	9.625	36.00	J-55	Yes	36.03	Yes	BS		522.2	1,191.80
35	33	Casing Joints	9.625	36.00	J-55	Yes	36.22	No			486.0	1,228.02
36	34	Casing Joints	9.625	36.00	J-55	Yes	38.40	Yes	BS		447.6	1,266.42
37	35	Casing Joints	9.625	36.00	J-55	Yes	36.03	No			411.6	1,302.45
38	36	Casing Joints	9.625	36.00	J-55	Yes	37.80	Yes	BS		373.8	1,340.25
39	37	Casing Joints	9.625	36.00	J-55	Yes	38.15	No			335.6	1,378.40
40	38	Casing Joints	9.625	36.00	J-55	Yes	38.71	Yes	BS		296.9	1,417.11
41	39	Casing Joints	9.625	36.00	J-55	Yes	38.73	No			258.2	1,455.84
42	40	Casing Joints	9.625	36.00	J-55	Yes	38.70	Yes	BS		219.5	1,494.54
43	41	Casing Joints	9.625	36.00	J-55	Yes	39.25	No			180.2	1,533.79
44	42	Casing Joints	9.625	36.00	J-55	Yes	38.72	Yes	BS		141.5	1,572.51
45	43	Casing Joints	9.625	36.00	J-55	Yes	38.12	No			103.4	1,610.63
46	44	Casing Joints	9.625	36.00	J-55	Yes	37.78	Yes	BS		65.6	1,648.41
47	45	Casing Joints	9.625	36.00	J-55	Yes	35.72	No			29.9	1,684.13
48		Mandrel Hanger	9.625	36.00		Yes	1.00	No			28.9	1,685.13
49		Landing Joint	9.625	36.00		Yes	32.52	No			-3.7	1,717.65
	46	Casing Joints	9.625	36.00	J-55	No	35.72	No	Out #1			
	47	Casing Joints	9.625	36.00	J-55	No	37.12	No	Out #2			
	48	Casing Joints	9.625	36.00	J-55	No	38.30	No	Out #3			
	49	Casing Joints	9.625	36.00	J-55	No	37.81	No	Out #4			
	50	Casing Joints	9.625	36.00	J-55	No	37.77	No	Out #5			
	51	Casing Joints	9.625	36.00	J-55	No	36.50	No	Out #6			
	52	Casing Joints	9.625	36.00	J-55	No	37.72	No	Out #7			
		Casing Joints	9.625	36.00	J-55	No	19.60	No	Out - Pup Joint			

Casing Offload Tally

Well Name: TIMMY MINCH OHI 8 **Intermediate, Set Depth: 1,911.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003350000	4001164218	SWN PRODUCTION COMPANY L...	1,208.30	25.70	1,234.00 KB1,6/28/2016 07:06	5/16/2022 23:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Intermediate	1,911.00	5/22/2022 08:00

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	9.625	36.00		Yes	1.88	No	Weatherford Float shoe		1,909.1	1.88
2	1	Casing Joints	9.625	36.00	K-55	Yes	39.53	Yes	1 BS		1,869.6	41.41
3		Float Collar	9.625	36.00		Yes	1.49	No	Weatherford Float Collar		1,868.1	42.90
4	2	Casing Joints	9.625	36.00	K-55	Yes	36.78	Yes	2 BS		1,831.3	79.68
5	3	Casing Joints	9.625	36.00	K-55	Yes	38.53	Yes	3 BS		1,792.8	118.21
6	4	Casing Joints	9.625	36.00	K-55	Yes	37.13	Yes	4 BS		1,755.7	155.34
7	5	Casing Joints	9.625	36.00	K-55	Yes	37.82	No			1,717.8	193.16
8	6	Casing Joints	9.625	36.00	K-55	Yes	38.16	Yes	5 BS		1,679.7	231.32
9	7	Casing Joints	9.625	36.00	K-55	Yes	39.21	No			1,640.5	270.53
10	8	Casing Joints	9.625	36.00	K-55	Yes	38.46	Yes	6 BS		1,602.0	308.99
11	9	Casing Joints	9.625	36.00	K-55	Yes	38.54	No			1,563.5	347.53
12	10	Casing Joints	9.625	36.00	K-55	Yes	38.31	Yes	7 BS		1,525.2	385.84
13	11	Casing Joints	9.625	36.00	K-55	Yes	38.52	No			1,486.6	424.36
14	12	Casing Joints	9.625	36.00	K-55	Yes	37.52	Yes	8 BS		1,449.1	461.88
15	13	Casing Joints	9.625	36.00	K-55	Yes	38.21	No			1,410.9	500.09
16	14	Casing Joints	9.625	36.00	K-55	Yes	38.17	Yes	9 BS		1,372.7	538.26
17	15	Casing Joints	9.625	36.00	K-55	Yes	40.28	No			1,332.5	578.54
18	16	Casing Joints	9.625	36.00	K-55	Yes	38.21	Yes	10 BS		1,294.3	616.75
19	17	Casing Joints	9.625	36.00	K-55	Yes	38.92	No			1,255.3	655.67
20	18	Casing Joints	9.625	36.00	K-55	Yes	38.40	Yes			1,216.9	694.07
21	19	Casing Joints	9.625	36.00	K-55	Yes	36.05	No			1,180.9	730.12
22	20	Casing Joints	9.625	36.00	K-55	Yes	35.73	Yes			1,145.2	765.85
23	21	Casing Joints	9.625	36.00	K-55	Yes	36.66	No			1,108.5	802.51
24	22	Casing Joints	9.625	36.00	K-55	Yes	36.41	Yes			1,072.1	838.92
25	23	Casing Joints	9.625	36.00	K-55	Yes	39.73	No			1,032.4	878.65
26	24	Casing Joints	9.625	36.00	K-55	Yes	35.21	Yes			997.1	913.86
27	25	Casing Joints	9.625	36.00	K-55	Yes	38.21	No			958.9	952.07
28	26	Casing Joints	9.625	36.00	K-55	Yes	35.33	Yes			923.6	987.40
29	27	Casing Joints	9.625	36.00	K-55	Yes	35.55	No			888.0	1,022.95
30	28	Casing Joints	9.625	36.00	K-55	Yes	35.12	Yes			852.9	1,058.07
31	29	Casing Joints	9.625	36.00	K-55	Yes	36.63	No			816.3	1,094.70
32	30	Casing Joints	9.625	36.00	K-55	Yes	38.20	Yes			778.1	1,132.90
33	31	Casing Joints	9.625	36.00	K-55	Yes	36.59	No			741.5	1,169.49
34	32	Casing Joints	9.625	36.00	K-55	Yes	36.53	Yes			705.0	1,206.02
35	33	Casing Joints	9.625	36.00	K-55	Yes	37.59	No			667.4	1,243.61
36	34	Casing Joints	9.625	36.00	K-55	Yes	37.78	Yes			629.6	1,281.39
37	35	Casing Joints	9.625	36.00	K-55	Yes	38.15	No			591.5	1,319.54
38	36	Casing Joints	9.625	36.00	K-55	Yes	38.69	Yes	20 BS		552.8	1,358.23
39	37	Casing Joints	9.625	36.00	K-55	Yes	34.26	No			518.5	1,392.49
40	38	Casing Joints	9.625	36.00	K-55	Yes	37.89	Yes			480.6	1,430.38
41	39	Casing Joints	9.625	36.00	K-55	Yes	38.53	No			442.1	1,468.91
42	40	Casing Joints	9.625	36.00	K-55	Yes	38.15	Yes			403.9	1,507.06
43	41	Casing Joints	9.625	36.00	K-55	Yes	37.21	No			366.7	1,544.27
44	42	Casing Joints	9.625	36.00	K-55	Yes	36.85	Yes			329.9	1,581.12
45	43	Casing Joints	9.625	36.00	K-55	Yes	36.27	No			293.6	1,617.39
46	44	Casing Joints	9.625	36.00	K-55	Yes	35.17	Yes			258.4	1,652.56
47	45	Casing Joints	9.625	36.00	K-55	Yes	37.04	No			221.4	1,689.60
48	46	Casing Joints	9.625	36.00	K-55	Yes	38.22	Yes			183.2	1,727.82
49	47	Casing Joints	9.625	36.00	K-55	Yes	36.50	No			146.7	1,764.32
50	48	Casing Joints	9.625	36.00	K-55	Yes	38.22	Yes			108.5	1,802.54
51	49	Casing Joints	9.625	36.00	K-55	Yes	38.02	No			70.4	1,840.56
52	50	Casing Joints	9.625	36.00	K-55	Yes	36.31	Yes			34.1	1,876.87
53		Mandrel Hanger	9.625	36.00		Yes	1.00	No	Mandrel Hanger		33.1	1,877.87
54		Landing Joint	9.625	36.00		Yes	36.70	No	Landing Joint		-3.6	1,914.57
		Casing Joints	9.625	36.00	K-55	No	20.05	No	Casing Pup Joint - OUT			
		Casing Joints	9.625	36.00	K-55	No	9.84	No	Casing Pup Joint - OUT			
	51	Casing Joints	9.625	36.00	K-55	No	34.85	No	OUT - 1			
	52	Casing Joints	9.625	36.00	K-55	No	36.45	No	OUT - 2			
	53	Casing Joints	9.625	36.00	K-55	No	38.68	No	OUT - 3			
	54	Casing Joints	9.625	36.00	K-55	No	37.34	No	OUT - 4			

Casing Offload Tally

Well Name: TIMMY MINCH OHI 10 **Intermediate, Set Depth: 1,902.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003360000	4001164286	SWN PRODUCTION COMPANY L...	1,208.10	25.90	1,234.00 KB1,6/28/2016 07:07	6/4/2022 12:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Intermediate	1,902.00	6/9/2022 15:00

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	9.625	36.00		Yes	1.88	No	Weatherford Float shoe		1,900.1	1.88
2	1	Casing Joints	9.625	36.00	K-55	Yes	37.12	Yes	1 BS		1,863.0	39.00
3		Float Collar	9.625	36.00		Yes	1.49	No	Weatherford Float Collar		1,861.5	40.49
4	2	Casing Joints	9.625	36.00	K-55	Yes	37.61	Yes	2 BS		1,823.9	78.10
5	3	Casing Joints	9.625	36.00	K-55	Yes	37.11	Yes	3 BS		1,786.8	115.21
6	4	Casing Joints	9.625	36.00	K-55	Yes	36.86	Yes	4 BS		1,749.9	152.07
7	5	Casing Joints	9.625	36.00	K-55	Yes	36.86	No			1,713.1	188.93
8	6	Casing Joints	9.625	36.00	K-55	Yes	37.21	Yes	5 BS		1,675.9	226.14
9	7	Casing Joints	9.625	36.00	K-55	Yes	38.08	No			1,637.8	264.22
10	8	Casing Joints	9.625	36.00	K-55	Yes	37.16	Yes	6 BS		1,600.6	301.38
11	9	Casing Joints	9.625	36.00	K-55	Yes	34.88	No			1,565.7	336.26
12	10	Casing Joints	9.625	36.00	K-55	Yes	36.87	Yes	7 BS		1,528.9	373.13
13	11	Casing Joints	9.625	36.00	K-55	Yes	36.86	No			1,492.0	409.99
14	12	Casing Joints	9.625	36.00	K-55	Yes	36.98	Yes	8 BS		1,455.0	446.97
15	13	Casing Joints	9.625	36.00	K-55	Yes	37.21	No			1,417.8	484.18
16	14	Casing Joints	9.625	36.00	K-55	Yes	34.58	Yes	9 BS		1,383.2	518.76
17	15	Casing Joints	9.625	36.00	K-55	Yes	37.20	No			1,346.0	555.96
18	16	Casing Joints	9.625	36.00	K-55	Yes	37.21	Yes	10 BS		1,308.8	593.17
19	17	Casing Joints	9.625	36.00	K-55	Yes	37.29	No			1,271.5	630.46
20	18	Casing Joints	9.625	36.00	K-55	Yes	36.97	Yes			1,234.6	667.43
21	19	Casing Joints	9.625	36.00	K-55	Yes	35.58	No			1,199.0	703.01
22	20	Casing Joints	9.625	36.00	K-55	Yes	36.37	Yes			1,162.6	739.38
23	21	Casing Joints	9.625	36.00	K-55	Yes	37.21	No			1,125.4	776.59
24	22	Casing Joints	9.625	36.00	K-55	Yes	37.11	Yes			1,088.3	813.70
25	23	Casing Joints	9.625	36.00	K-55	Yes	37.13	No			1,051.2	850.83
26	24	Casing Joints	9.625	36.00	K-55	Yes	34.88	Yes			1,016.3	885.71
27	25	Casing Joints	9.625	36.00	K-55	Yes	37.22	No			979.1	922.93
28	26	Casing Joints	9.625	36.00	K-55	Yes	36.29	Yes			942.8	959.22
29	27	Casing Joints	9.625	36.00	K-55	Yes	37.00	No			905.8	996.22
30	28	Casing Joints	9.625	36.00	K-55	Yes	37.10	Yes			868.7	1,033.32
31	29	Casing Joints	9.625	36.00	K-55	Yes	35.91	No			832.8	1,069.23
32	30	Casing Joints	9.625	36.00	K-55	Yes	35.95	Yes			796.8	1,105.18
33	31	Casing Joints	9.625	36.00	K-55	Yes	36.40	No			760.4	1,141.58
34	32	Casing Joints	9.625	36.00	K-55	Yes	34.30	Yes			726.1	1,175.88
35	33	Casing Joints	9.625	36.00	K-55	Yes	37.10	No			689.0	1,212.98
36	34	Casing Joints	9.625	36.00	K-55	Yes	36.87	Yes			652.2	1,249.85
37	35	Casing Joints	9.625	36.00	K-55	Yes	35.99	No			616.2	1,285.84
38	36	Casing Joints	9.625	36.00	K-55	Yes	37.22	Yes	20 BS		578.9	1,323.06
39	37	Casing Joints	9.625	36.00	K-55	Yes	36.98	No			542.0	1,360.04
40	38	Casing Joints	9.625	36.00	K-55	Yes	34.68	Yes			507.3	1,394.72
41	39	Casing Joints	9.625	36.00	K-55	Yes	37.21	No			470.1	1,431.93
42	40	Casing Joints	9.625	36.00	K-55	Yes	37.12	Yes			433.0	1,469.05
43	41	Casing Joints	9.625	36.00	K-55	Yes	36.38	No			396.6	1,505.43
44	42	Casing Joints	9.625	36.00	K-55	Yes	35.69	Yes			360.9	1,541.12
45	43	Casing Joints	9.625	36.00	K-55	Yes	37.11	No			323.8	1,578.23
46	44	Casing Joints	9.625	36.00	K-55	Yes	36.57	Yes			287.2	1,614.80
47	45	Casing Joints	9.625	36.00	K-55	Yes	35.08	No			252.1	1,649.88
48	46	Casing Joints	9.625	36.00	K-55	Yes	37.32	Yes			214.8	1,687.20
49	47	Casing Joints	9.625	36.00	K-55	Yes	36.11	No			178.7	1,723.31
50	48	Casing Joints	9.625	36.00	K-55	Yes	36.89	Yes			141.8	1,760.20
51	49	Casing Joints	9.625	36.00	K-55	Yes	35.26	No			106.5	1,795.46
52	50	Casing Joints	9.625	36.00	K-55	Yes	37.21	Yes	27 BS		69.3	1,832.67
53	51	Casing Joints	9.625	36.00	K-55	Yes	35.21	No			34.1	1,867.88
54		Mandrel Hanger	9.625	36.00		Yes	1.00	No	Mandrel Hanger		33.1	1,868.88
55		Landing Joint	9.625	36.00		Yes	36.70	No	Landing Joint		-3.6	1,905.58
		Casing Joints	9.625	36.00	K-55	No	9.89	No	Casing Pup Joint - OUT			
		Casing Joints	9.625	36.00	K-55	No	20.04	No	Casing Pup Joint - OUT			
	52	Casing Joints	9.625	36.00	K-55	No	37.00	No	OUT - 1			
	53	Casing Joints	9.625	36.00	K-55	No	37.34	No	OUT - 2			
	54	Casing Joints	9.625	36.00	K-55	No	36.21	No	OUT - 3			
	55	Casing Joints	9.625	36.00	K-55	No	36.29	No	OUT - 4			
	56	Casing Joints	9.625	36.00	K-55	No	37.21	No	OUT - 5			
	57	Casing Joints	9.625	36.00	K-55	No	34.85	No	OUT - 6			
	58	Casing Joints	9.625	36.00	K-55	No	36.44	No	OUT - 7			
	59	Casing Joints	9.625	36.00	K-55	No	38.67	No	OUT - 8			

Casing Offload Tally

Well Name: CARL ROTTER OHI 10 **Intermediate, Set Depth: 2,206.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003280000	4001171228	SWN PRODUCTION COMPANY L...	1,336.70	25.40	1,362.10 KB2,9/16/2020 00:00	4/14/2022 04:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Intermediate	2,206.00	4/16/2022 12:00

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	9.625	36.00		Yes	1.88	No	Weatherford Float Shoe		2,204.1	1.88
2	1	Casing Joints	9.625	36.00	K-55	Yes	36.82	Yes			2,167.3	38.70
3		Float Collar	9.625	36.00		Yes	1.49	No	Weatherford Float Collar		2,165.8	40.19
4	2	Casing Joints	9.625	36.00	K-55	Yes	35.05	Yes			2,130.8	75.24
5	3	Casing Joints	9.625	36.00	K-55	Yes	36.85	Yes			2,093.9	112.09
6	4	Casing Joints	9.625	36.00	K-55	Yes	35.95	Yes			2,058.0	148.04
7	5	Casing Joints	9.625	36.00	K-55	Yes	36.46	No			2,021.5	184.50
8	6	Casing Joints	9.625	36.00	K-55	Yes	37.25	Yes			1,984.3	221.75
9	7	Casing Joints	9.625	36.00	K-55	Yes	39.35	No			1,944.9	261.10
10	8	Casing Joints	9.625	36.00	K-55	Yes	38.95	Yes			1,906.0	300.05
11	9	Casing Joints	9.625	36.00	K-55	Yes	37.69	No			1,868.3	337.74
12	10	Casing Joints	9.625	36.00	K-55	Yes	36.44	Yes			1,831.8	374.18
13	11	Casing Joints	9.625	36.00	K-55	Yes	37.37	No			1,794.5	411.55
14	12	Casing Joints	9.625	36.00	K-55	Yes	37.26	Yes			1,757.2	448.81
15	13	Casing Joints	9.625	36.00	K-55	Yes	37.51	No			1,719.7	486.32
16	14	Casing Joints	9.625	36.00	K-55	Yes	38.25	Yes			1,681.4	524.57
17	15	Casing Joints	9.625	36.00	K-55	Yes	37.52	No			1,643.9	562.09
18	16	Casing Joints	9.625	36.00	K-55	Yes	37.47	Yes			1,606.4	599.56
19	17	Casing Joints	9.625	36.00	K-55	Yes	35.88	No			1,570.6	635.44
20	18	Casing Joints	9.625	36.00	K-55	Yes	34.39	Yes			1,536.2	669.83
21	19	Casing Joints	9.625	36.00	K-55	Yes	37.37	No			1,498.8	707.20
22	20	Casing Joints	9.625	36.00	K-55	Yes	37.48	Yes			1,461.3	744.68
23	21	Casing Joints	9.625	36.00	K-55	Yes	35.72	No			1,425.6	780.40
24	22	Casing Joints	9.625	36.00	K-55	Yes	37.52	Yes			1,388.1	817.92
25	23	Casing Joints	9.625	36.00	K-55	Yes	37.49	No			1,350.6	855.41
26	24	Casing Joints	9.625	36.00	K-55	Yes	37.52	Yes			1,313.1	892.93
27	25	Casing Joints	9.625	36.00	K-55	Yes	37.25	No			1,275.8	930.18
28	26	Casing Joints	9.625	36.00	K-55	Yes	37.55	Yes			1,238.3	967.73
29	28	Casing Joints	9.625	36.00	K-55	Yes	34.85	Yes			1,203.4	1,002.58
30	29	Casing Joints	9.625	36.00	K-55	Yes	34.97	No			1,168.5	1,037.55
31	30	Casing Joints	9.625	36.00	K-55	Yes	36.23	Yes			1,132.2	1,073.78
32	31	Casing Joints	9.625	36.00	K-55	Yes	39.34	No			1,092.9	1,113.12
33	32	Casing Joints	9.625	36.00	K-55	Yes	37.49	Yes			1,055.4	1,150.61
34	33	Casing Joints	9.625	36.00	K-55	Yes	38.39	No			1,017.0	1,189.00
35	34	Casing Joints	9.625	36.00	K-55	Yes	39.13	Yes			977.9	1,228.13
36	35	Casing Joints	9.625	36.00	K-55	Yes	38.30	No			939.6	1,266.43
37	36	Casing Joints	9.625	36.00	K-55	Yes	37.37	Yes			902.2	1,303.80
38	37	Casing Joints	9.625	36.00	K-55	Yes	38.46	No			863.7	1,342.26
39	38	Casing Joints	9.625	36.00	K-55	Yes	38.11	Yes			825.6	1,380.37
40	39	Casing Joints	9.625	36.00	K-55	Yes	38.10	No			787.5	1,418.47
41	40	Casing Joints	9.625	36.00	K-55	Yes	38.83	Yes			748.7	1,457.30
42	41	Casing Joints	9.625	36.00	K-55	Yes	37.55	No			711.2	1,494.85
43	42	Casing Joints	9.625	36.00	K-55	Yes	36.87	Yes			674.3	1,531.72
44	43	Casing Joints	9.625	36.00	K-55	Yes	37.83	No			636.5	1,569.55
45	44	Casing Joints	9.625	36.00	K-55	Yes	35.22	Yes			601.2	1,604.77
46	45	Casing Joints	9.625	36.00	K-55	Yes	37.71	No			563.5	1,642.48
47	46	Casing Joints	9.625	36.00	K-55	Yes	38.05	Yes			525.5	1,680.53
48	47	Casing Joints	9.625	36.00	K-55	Yes	38.10	No			487.4	1,718.63
49	48	Casing Joints	9.625	36.00	K-55	Yes	36.74	Yes			450.6	1,755.37
50	49	Casing Joints	9.625	36.00	K-55	Yes	38.09	No			412.5	1,793.46
51	50	Casing Joints	9.625	36.00	K-55	Yes	36.31	Yes			376.2	1,829.77
52	51	Casing Joints	9.625	36.00	K-55	Yes	38.08	No			338.2	1,867.85
53	52	Casing Joints	9.625	36.00	K-55	Yes	38.03	Yes			300.1	1,905.88
54	53	Casing Joints	9.625	36.00	K-55	Yes	36.34	No			263.8	1,942.22
55	54	Casing Joints	9.625	36.00	K-55	Yes	38.54	Yes			225.2	1,980.76
56	55	Casing Joints	9.625	36.00	K-55	Yes	38.87	No			186.4	2,019.63
57	56	Casing Joints	9.625	36.00	K-55	Yes	38.05	Yes			148.3	2,057.68
58	57	Casing Joints	9.625	36.00	K-55	Yes	37.81	No			110.5	2,095.49
59	58	Casing Joints	9.625	36.00	K-55	Yes	39.09	No			71.4	2,134.58
60	59	Casing Joints	9.625	36.00	K-55	Yes	38.05	No	Replaces jt # 27		33.4	2,172.63
61		Mandrel Hanger	9.625	36.00		Yes	1.00	No	Mandrel Hanger		32.4	2,173.63
		Landing Joint	9.625	36.00		No	36.70	No	Landing Joint			
	27	Casing Joints	9.625	36.00	K-55	No	37.48	No	Out #1 (damaged Threads)			
	60	Casing Joints	9.625	36.00	K-55	No	38.05	No	Out #2			
		Casing Joints	9.625	36.00	K-55	No	10.23	No	10' Pup Joint - Out			

Casing Offload Tally

Well Name: CARL ROTTER OHI 10 **Intermediate, Set Depth: 2,206.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003280000	4001171228	SWN PRODUCTION COMPANY L...	1,336.70	25.40	1,362.10 KB2,9/16/2020 00:00	4/14/2022 04:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
		Casing Joints	9.625	36.00	K-55	No	20.97	No	20' Pup Joint - Out			

Casing Offload Tally

Well Name: CARL ROTTER OHI 6 **Intermediate, Set Depth: 2,200.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003270000	4001166132	SWN PRODUCTION COMPANY L...	1,336.70	25.30	1,362.00 KB2,9/16/2020 00:00	3/18/2022 01:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Conductor Set

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Intermediate	2,200.00	3/22/2022 22:30

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	9.625	36.00		Yes	1.88	No	Weatherford Float Shoe		2,198.1	1.88
2	1	Casing Joints	9.625	36.00	J-55	Yes	37.90	Yes	BS 1		2,160.2	39.78
3		Float Collar	9.625	36.00		Yes	1.49	No	Weatherford Float Collar		2,158.7	41.27
4	2	Casing Joints	9.625	36.00	J-55	Yes	36.71	Yes	BS 2		2,122.0	77.98
5	3	Casing Joints	9.625	36.00	J-55	Yes	38.08	Yes	BS 3		2,083.9	116.06
6	4	Casing Joints	9.625	36.00	J-55	Yes	38.27	Yes	BS 4		2,045.7	154.33
7	5	Casing Joints	9.625	36.00	J-55	Yes	38.52	No			2,007.2	192.85
8	6	Casing Joints	9.625	36.00	J-55	Yes	37.77	Yes	BS 5		1,969.4	230.62
9	7	Casing Joints	9.625	36.00	J-55	Yes	38.13	No			1,931.3	268.75
10	8	Casing Joints	9.625	36.00	J-55	Yes	37.87	Yes	BS 6		1,893.4	306.62
11	9	Casing Joints	9.625	36.00	J-55	Yes	35.72	No			1,857.7	342.34
12	10	Casing Joints	9.625	36.00	J-55	Yes	37.36	Yes	BS 7		1,820.3	379.70
13	11	Casing Joints	9.625	36.00	J-55	Yes	37.54	No			1,782.8	417.24
14	12	Casing Joints	9.625	36.00	J-55	Yes	36.95	Yes	BS 8		1,745.8	454.19
15	13	Casing Joints	9.625	36.00	J-55	Yes	38.13	No			1,707.7	492.32
16	14	Casing Joints	9.625	36.00	J-55	Yes	38.06	Yes	BS 9		1,669.6	530.38
17	15	Casing Joints	9.625	36.00	J-55	Yes	37.08	No			1,632.5	567.46
18	16	Casing Joints	9.625	36.00	J-55	Yes	39.74	Yes	BS 10		1,592.8	607.20
19	17	Casing Joints	9.625	36.00	J-55	Yes	37.96	No			1,554.8	645.16
20	18	Casing Joints	9.625	36.00	J-55	Yes	39.46	Yes	BS 11		1,515.4	684.62
21	19	Casing Joints	9.625	36.00	J-55	Yes	38.13	No			1,477.3	722.75
22	20	Casing Joints	9.625	36.00	J-55	Yes	38.28	Yes	BS 12		1,439.0	761.03
23	21	Casing Joints	9.625	36.00	J-55	Yes	37.33	No			1,401.6	798.36
24	22	Casing Joints	9.625	36.00	J-55	Yes	39.28	Yes	BS 13		1,362.4	837.64
25	23	Casing Joints	9.625	36.00	J-55	Yes	40.85	No			1,321.5	878.49
26	24	Casing Joints	9.625	36.00	J-55	Yes	38.73	Yes	BS 14		1,282.8	917.22
27	25	Casing Joints	9.625	36.00	J-55	Yes	37.91	No			1,244.9	955.13
28	26	Casing Joints	9.625	36.00	J-55	Yes	38.75	Yes	BS 15		1,206.1	993.88
29	27	Casing Joints	9.625	36.00	J-55	Yes	36.36	No			1,169.8	1,030.24
30	28	Casing Joints	9.625	36.00	J-55	Yes	36.56	Yes	BS 16		1,133.2	1,066.80
31	29	Casing Joints	9.625	36.00	J-55	Yes	37.72	No			1,095.5	1,104.52
32	30	Casing Joints	9.625	36.00	J-55	Yes	35.42	Yes	BS 17		1,060.1	1,139.94
33	31	Casing Joints	9.625	36.00	J-55	Yes	36.76	No			1,023.3	1,176.70
34	32	Casing Joints	9.625	36.00	J-55	Yes	38.73	Yes	BS 18		984.6	1,215.43
35	33	Casing Joints	9.625	36.00	J-55	Yes	37.21	No			947.4	1,252.64
36	34	Casing Joints	9.625	36.00	J-55	Yes	39.34	Yes	BS 19		908.0	1,291.98
37	35	Casing Joints	9.625	36.00	J-55	Yes	37.48	No			870.5	1,329.46
38	36	Casing Joints	9.625	36.00	J-55	Yes	37.37	Yes	BS 20		833.2	1,366.83
39	37	Casing Joints	9.625	36.00	J-55	Yes	37.44	No			795.7	1,404.27
40	38	Casing Joints	9.625	36.00	J-55	Yes	38.70	Yes	BS 21		757.0	1,442.97
41	39	Casing Joints	9.625	36.00	J-55	Yes	37.82	No			719.2	1,480.79
42	40	Casing Joints	9.625	36.00	J-55	Yes	38.44	Yes	BS 22		680.8	1,519.23
43	41	Casing Joints	9.625	36.00	J-55	Yes	38.33	No			642.4	1,557.56
44	42	Casing Joints	9.625	36.00	J-55	Yes	37.13	Yes	BS 23		605.3	1,594.69
45	43	Casing Joints	9.625	36.00	J-55	Yes	38.12	No			567.2	1,632.81
46	44	Casing Joints	9.625	36.00	J-55	Yes	38.19	Yes	BS 24		529.0	1,671.00
47	45	Casing Joints	9.625	36.00	J-55	Yes	38.74	No			490.3	1,709.74
48	46	Casing Joints	9.625	36.00	J-55	Yes	38.07	Yes	BS 25		452.2	1,747.81
49	47	Casing Joints	9.625	36.00	J-55	Yes	40.84	No			411.4	1,788.65
50	48	Casing Joints	9.625	36.00	J-55	Yes	36.40	Yes	BS 26		375.0	1,825.05
51	49	Casing Joints	9.625	36.00	J-55	Yes	37.81	No			337.1	1,862.86
52	50	Casing Joints	9.625	36.00	J-55	Yes	40.96	Yes	BS 27		296.2	1,903.82
53	51	Casing Joints	9.625	36.00	J-55	Yes	39.20	No			257.0	1,943.02
54	52	Casing Joints	9.625	36.00	J-55	Yes	36.65	Yes	BS 28		220.3	1,979.67
55	53	Casing Joints	9.625	36.00	J-55	Yes	35.05	No			185.3	2,014.72
56	54	Casing Joints	9.625	36.00	J-55	Yes	38.24	Yes	BS 29		147.0	2,052.96
57	55	Casing Joints	9.625	36.00	J-55	Yes	38.52	No			108.5	2,091.48
58	56	Casing Joints	9.625	36.00	J-55	Yes	37.82	Yes	BS 30		70.7	2,129.30
59	57	Casing Joints	9.625	36.00	J-55	Yes	37.85	No			32.8	2,167.15
60		Mandrel Hanger	9.625	36.00		Yes	1.00	No	Mandrel Hanger		31.8	2,168.15
61		Landing Joint	9.625	36.00		Yes	36.70	No	Landing Joint		-4.9	2,204.85
	58	Casing Joints	9.625	36.00	J-55	No	36.17	No	Casing Joint Out			
	59	Casing Joints	9.625	36.00	J-55	No	36.80	No	Casing Joint Out			
	60	Casing Joints	9.625	36.00	J-55	No	36.86	No	Casing Joint Out			
	61	Casing Joints	9.625	36.00	J-55	No	35.05	No	Casing Joint Out			

Casing Offload Tally

Well Name: CARL ROTTER OHI 6 **Intermediate, Set Depth: 2,200.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003270000	4001166132	SWN PRODUCTION COMPANY L...	1,336.70	25.30	1,362.00 KB2,9/16/2020 00:00	3/18/2022 01:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Conductor Set

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
		Casing Joints	9.625	36.00	J-55	No	10.22	No	Pup Joint 1 Out			
		Casing Joints	9.625	36.00	J-55	No	20.98	No	Pup Joint 2 Out			

IR-26 Rev 08 INSPECTORS PERMIT SUMMARY FORM

PAGE 1 **GPS YES** ☐ **NO** ☐

DATE STARTED/LOCATION:		API #:		WELL NO.	
DRILLING COMMENCED:		OPERATOR:			
TD DATE:		DEPTH:		FARM:	
WATER DEPTHS		COAL DEPTHS			

QUESTIONS FOR THIS REPORT ARE IN ACCORDANCE OF WV CODE 22-6-30
AND REGULATIONS 35CSR 4-12.1 AND 35CSR 4-16 AND THE GENERAL WATER POLLUTION CONTROL PERMIT

POINTS ARE TO BE GIVEN UP TO MAXIMUM AS SHOWN BASED ON PERFORMANCE.

1. DID OPERATOR GIVE PROPER NOTICE TO INSPECTOR BEFORE THE FOLLOWING:
A. CONSTRUCTION YES ☐ NO ☐ (2_ PTS) B. DRILLING YES ☐ NO ☐ (2_PTS)
(4 PTS)_____

2. WAS THE TIMBER CUT, STACKED, AND BRUSH USED FOR SEDIMENT BARRIERS BEFORE DIRT WORK STARTED? YES ☐ NO ☐ (4_ PTS) **(4 PTS) _____**

3. ARE ALL LOCATION AND/OR ROAD BANKS BEING SLOPED? YES ☐ NO ☐ (4_ PTS) **(4 PTS) _____**

4. CONSTRUCTION:
WERE THE FOLLOWING SEDIMENT CONTROL STRUCTURES PROPERLY INSTALLED/MAINTAINED?
A. ROAD DITCHES (1)_ (2)_(3)_(4)_ (PTS) B. CROSS DRAINS (1)_ (2)_(3)_(4)_ (5)_(PTS)
C. CULVERTS (1)_ (2)_(3)_(4)_ (5)_(PTS). D. CREEK CROSSINGS (1)_ (2)_(3)_ (PTS)
E. DIVERSION DITCHES (1)_ (2)_(3)_ (PTS) F. BARRIERS (1)_ (2)_(3)_ (PTS)
G. TEMPORARY SEEDING YES ☐ NO ☐ (10_ PTS) **POINTS AVAILABLE FOR QUESTION 4: (33 PTS)_____**

5. HAS TOP SOIL (IF ANY) BEEN STOCKED PILED? YES ☐ NO ☐ (2_PTS) **(2 PTS) _____**

6. IS THE PIT PROPERLY INSTALLED AND MAINTAINED? YES ☐ NO ☐ (9_PTS) **(9 PTS) _____**

7. RECLAMATION:
A. ROADWAY (1)_ (2)_(3)_ (PTS B. LOCATION (1)_ (2)_(3)_ (PTS)
C. PITS (1)_ (2)_(3)_ (PTS) D. PIPELINES (1)_ (2)_(3)_ (PTS)
E. TANK DIKES (1)_ (2)_(3)_ (PTS) F. API INSTALLED YES OR NO 3_(PTS)
G. ADEQUATE SEEDING MATERIALS (1)_ (2)_(3)_ (PTS)
H. WAS SEED BED ADEQUATE (1)_ (2)_(3)_ (PTS) **POINTS AVAILABLE FOR QUESTION 7: (24 PTS)_____**

8. WAS RECLAMATION COMPLETED WITHIN:
☐ MTHS OF TD 6_ PTS ONLY; ☐ MTHS OF TD 12_ PTS ONLY; ☐ MTHS OF TD 19_ PTS ONLY.
MAXIMUM POINTS AVAILABLE FOR QUESTION 8: (19 PTS)_____

TOTAL MAXIMUM POSSIBLE SCORE OF 99.

TOTAL RECLAMATION SCORE: _____

INSPECTIONS :

_____ _____
DATE RELEASED INSPECTOR

INSPECTORS PERMIT SUMMARY FORM

API :

INSPECTIONS :

IR-26 Rev 08 INSPECTORS PERMIT SUMMARY FORM

PAGE 1 **GPS YES** ☐ **NO** ☐

DATE STARTED/LOCATION:		API #:		WELL NO.	
DRILLING COMMENCED:		OPERATOR:			
TD DATE:		DEPTH:		FARM:	
WATER DEPTHS		COAL DEPTHS			

QUESTIONS FOR THIS REPORT ARE IN ACCORDANCE OF WV CODE 22-6-30
AND REGULATIONS 35CSR 4-12.1 AND 35CSR 4-16 AND THE GENERAL WATER POLLUTION CONTROL PERMIT

POINTS ARE TO BE GIVEN UP TO MAXIMUM AS SHOWN BASED ON PERFORMANCE.

1. DID OPERATOR GIVE PROPER NOTICE TO INSPECTOR BEFORE THE FOLLOWING:
A. CONSTRUCTION YES ☐ NO ☐ (2_ PTS) B. DRILLING YES ☐ NO ☐ (2_PTS)
(4 PTS)_____

2. WAS THE TIMBER CUT, STACKED, AND BRUSH USED FOR SEDIMENT BARRIERS BEFORE DIRT WORK STARTED? YES ☐ NO ☐ (4_ PTS) **(4 PTS) _____**

3. ARE ALL LOCATION AND/OR ROAD BANKS BEING SLOPED? YES ☐ NO ☐ (4_ PTS) **(4 PTS) _____**

4. CONSTRUCTION:
WERE THE FOLLOWING SEDIMENT CONTROL STRUCTURES PROPERLY INSTALLED/MAINTAINED?
A. ROAD DITCHES (1)_ (2)_(3)_(4)_ (PTS) B. CROSS DRAINS (1)_ (2)_(3)_(4)_ (5)_(PTS)
C. CULVERTS (1)_ (2)_(3)_(4)_ (5)_(PTS). D. CREEK CROSSINGS (1)_ (2)_(3)_ (PTS)
E. DIVERSION DITCHES (1)_ (2)_(3)_ (PTS) F. BARRIERS (1)_ (2)_(3)_ (PTS)
G. TEMPORARY SEEDING YES ☐ NO ☐ (10_ PTS) **POINTS AVAILABLE FOR QUESTION 4: (33 PTS)_____**

5. HAS TOP SOIL (IF ANY) BEEN STOCKED PILED? YES ☐ NO ☐ (2_PTS) **(2 PTS) _____**

6. IS THE PIT PROPERLY INSTALLED AND MAINTAINED? YES ☐ NO ☐ (9_PTS) **(9 PTS) _____**

7. RECLAMATION:
A. ROADWAY (1)_ (2)_(3)_ (PTS B. LOCATION (1)_ (2)_(3)_ (PTS)
C. PITS (1)_ (2)_(3)_ (PTS) D. PIPELINES (1)_ (2)_(3)_ (PTS)
E. TANK DIKES (1)_ (2)_(3)_ (PTS) F. API INSTALLED YES OR NO 3_(PTS)
G. ADEQUATE SEEDING MATERIALS (1)_ (2)_(3)_ (PTS)
H. WAS SEED BED ADEQUATE (1)_ (2)_(3)_ (PTS) **POINTS AVAILABLE FOR QUESTION 7: (24 PTS)_____**

8. WAS RECLAMATION COMPLETED WITHIN:
☐ MTHS OF TD 6_ PTS ONLY; ☐ MTHS OF TD 12_ PTS ONLY; ☐ MTHS OF TD 19_ PTS ONLY.
MAXIMUM POINTS AVAILABLE FOR QUESTION 8: (19 PTS)_____

TOTAL MAXIMUM POSSIBLE SCORE OF 99.

TOTAL RECLAMATION SCORE: _____

INSPECTIONS :

_____ _____
DATE RELEASED INSPECTOR

INSPECTORS PERMIT SUMMARY FORM

API :

INSPECTIONS :

IR-26 Rev 08 INSPECTORS PERMIT SUMMARY FORM

PAGE 1 **GPS YES** ☐ **NO** ☐

DATE STARTED/LOCATION:		API #:		WELL NO.	
DRILLING COMMENCED:		OPERATOR:			
TD DATE:		DEPTH:		FARM:	
WATER DEPTHS		COAL DEPTHS			

QUESTIONS FOR THIS REPORT ARE IN ACCORDANCE OF WV CODE 22-6-30
AND REGULATIONS 35CSR 4-12.1 AND 35CSR 4-16 AND THE GENERAL WATER POLLUTION CONTROL PERMIT

POINTS ARE TO BE GIVEN UP TO MAXIMUM AS SHOWN BASED ON PERFORMANCE.

1. DID OPERATOR GIVE PROPER NOTICE TO INSPECTOR BEFORE THE FOLLOWING:
A. CONSTRUCTION YES ☐ NO ☐ (2_ PTS) B. DRILLING YES ☐ NO ☐ (2_PTS)
(4 PTS)_____

2. WAS THE TIMBER CUT, STACKED, AND BRUSH USED FOR SEDIMENT BARRIERS BEFORE DIRT WORK STARTED? YES ☐ NO ☐ (4_ PTS) **(4 PTS) _____**

3. ARE ALL LOCATION AND/OR ROAD BANKS BEING SLOPED? YES ☐ NO ☐ (4_ PTS) **(4 PTS) _____**

4. CONSTRUCTION:
WERE THE FOLLOWING SEDIMENT CONTROL STRUCTURES PROPERLY INSTALLED/MAINTAINED?
A. ROAD DITCHES (1)_ (2)_(3)_(4)_ (PTS) B. CROSS DRAINS (1)_ (2)_(3)_(4)_ (5)_(PTS)
C. CULVERTS (1)_ (2)_(3)_(4)_ (5)_(PTS). D. CREEK CROSSINGS (1)_ (2)_(3)_ (PTS)
E. DIVERSION DITCHES (1)_ (2)_(3)_ (PTS) F. BARRIERS (1)_ (2)_(3)_ (PTS)
G. TEMPORARY SEEDING YES ☐ NO ☐ (10_ PTS) **POINTS AVAILABLE FOR QUESTION 4: (33 PTS)_____**

5. HAS TOP SOIL (IF ANY) BEEN STOCKED PILED? YES ☐ NO ☐ (2_PTS) **(2 PTS) _____**

6. IS THE PIT PROPERLY INSTALLED AND MAINTAINED? YES ☐ NO ☐ (9_PTS) **(9 PTS) _____**

7. RECLAMATION:
A. ROADWAY (1)_ (2)_(3)_ (PTS B. LOCATION (1)_ (2)_(3)_ (PTS)
C. PITS (1)_ (2)_(3)_ (PTS) D. PIPELINES (1)_ (2)_(3)_ (PTS)
E. TANK DIKES (1)_ (2)_(3)_ (PTS) F. API INSTALLED YES OR NO 3_(PTS)
G. ADEQUATE SEEDING MATERIALS (1)_ (2)_(3)_ (PTS)
H. WAS SEED BED ADEQUATE (1)_ (2)_(3)_ (PTS) **POINTS AVAILABLE FOR QUESTION 7: (24 PTS)_____**

8. WAS RECLAMATION COMPLETED WITHIN:
☐ MTHS OF TD 6_ PTS ONLY; ☐ MTHS OF TD 12_ PTS ONLY; ☐ MTHS OF TD 19_ PTS ONLY.
MAXIMUM POINTS AVAILABLE FOR QUESTION 8: (19 PTS)_____

TOTAL MAXIMUM POSSIBLE SCORE OF 99.

TOTAL RECLAMATION SCORE: _____

INSPECTIONS :

_____ _____
DATE RELEASED INSPECTOR

INSPECTORS PERMIT SUMMARY FORM

API :

INSPECTIONS :

IR-26 Rev 08 INSPECTORS PERMIT SUMMARY FORM

PAGE 1 **GPS YES** ☐ **NO** ☐

DATE STARTED/LOCATION:		API #:		WELL NO.	
DRILLING COMMENCED:		OPERATOR:			
TD DATE:		DEPTH:		FARM:	
WATER DEPTHS		COAL DEPTHS			

QUESTIONS FOR THIS REPORT ARE IN ACCORDANCE OF WV CODE 22-6-30
AND REGULATIONS 35CSR 4-12.1 AND 35CSR 4-16 AND THE GENERAL WATER POLLUTION CONTROL PERMIT

POINTS ARE TO BE GIVEN UP TO MAXIMUM AS SHOWN BASED ON PERFORMANCE.

1. DID OPERATOR GIVE PROPER NOTICE TO INSPECTOR BEFORE THE FOLLOWING:
A. CONSTRUCTION YES ☐ NO ☐ (2_ PTS) B. DRILLING YES ☐ NO ☐ (2_PTS)
(4 PTS)_____

2. WAS THE TIMBER CUT, STACKED, AND BRUSH USED FOR SEDIMENT BARRIERS BEFORE DIRT WORK STARTED? YES ☐ NO ☐ (4_ PTS) **(4 PTS) _____**

3. ARE ALL LOCATION AND/OR ROAD BANKS BEING SLOPED? YES ☐ NO ☐ (4_ PTS) **(4 PTS) _____**

4. CONSTRUCTION:
WERE THE FOLLOWING SEDIMENT CONTROL STRUCTURES PROPERLY INSTALLED/MAINTAINED?
A. ROAD DITCHES (1)_ (2)_(3)_(4)_ (PTS) B. CROSS DRAINS (1)_ (2)_(3)_(4)_ (5)_(PTS)
C. CULVERTS (1)_ (2)_(3)_(4)_ (5)_(PTS). D. CREEK CROSSINGS (1)_ (2)_(3)_ (PTS)
E. DIVERSION DITCHES (1)_ (2)_(3)_ (PTS) F. BARRIERS (1)_ (2)_(3)_ (PTS)
G. TEMPORARY SEEDING YES ☐ NO ☐ (10_ PTS) **POINTS AVAILABLE FOR QUESTION 4: (33 PTS)_____**

5. HAS TOP SOIL (IF ANY) BEEN STOCKED PILED? YES ☐ NO ☐ (2_PTS) **(2 PTS) _____**

6. IS THE PIT PROPERLY INSTALLED AND MAINTAINED? YES ☐ NO ☐ (9_PTS) **(9 PTS) _____**

7. RECLAMATION:
A. ROADWAY (1)_ (2)_(3)_ (PTS B. LOCATION (1)_ (2)_(3)_ (PTS)
C. PITS (1)_ (2)_(3)_ (PTS) D. PIPELINES (1)_ (2)_(3)_ (PTS)
E. TANK DIKES (1)_ (2)_(3)_ (PTS) F. API INSTALLED YES OR NO 3_(PTS)
G. ADEQUATE SEEDING MATERIALS (1)_ (2)_(3)_ (PTS)
H. WAS SEED BED ADEQUATE (1)_ (2)_(3)_ (PTS) **POINTS AVAILABLE FOR QUESTION 7: (24 PTS)_____**

8. WAS RECLAMATION COMPLETED WITHIN:
☐ MTHS OF TD 6_ PTS ONLY; ☐ MTHS OF TD 12_ PTS ONLY; ☐ MTHS OF TD 19_ PTS ONLY.
MAXIMUM POINTS AVAILABLE FOR QUESTION 8: (19 PTS)_____

TOTAL MAXIMUM POSSIBLE SCORE OF 99.

TOTAL RECLAMATION SCORE: _____

INSPECTIONS :

_____ _____
DATE RELEASED INSPECTOR

INSPECTORS PERMIT SUMMARY FORM

API :

INSPECTIONS :

IR-26 Rev 08 INSPECTORS PERMIT SUMMARY FORM

PAGE 1 **GPS YES** ☐ **NO** ☐

DATE STARTED/LOCATION:		API #:		WELL NO.	
DRILLING COMMENCED:		OPERATOR:			
TD DATE:		DEPTH:		FARM:	
WATER DEPTHS		COAL DEPTHS			

QUESTIONS FOR THIS REPORT ARE IN ACCORDANCE OF WV CODE 22-6-30
AND REGULATIONS 35CSR 4-12.1 AND 35CSR 4-16 AND THE GENERAL WATER POLLUTION CONTROL PERMIT

POINTS ARE TO BE GIVEN UP TO MAXIMUM AS SHOWN BASED ON PERFORMANCE.

1. DID OPERATOR GIVE PROPER NOTICE TO INSPECTOR BEFORE THE FOLLOWING:
A. CONSTRUCTION YES ☐ NO ☐ (2_ PTS) B. DRILLING YES ☐ NO ☐ (2_PTS)
(4 PTS)_____

2. WAS THE TIMBER CUT, STACKED, AND BRUSH USED FOR SEDIMENT BARRIERS BEFORE DIRT WORK STARTED? YES ☐ NO ☐ (4_ PTS) **(4 PTS) _____**

3. ARE ALL LOCATION AND/OR ROAD BANKS BEING SLOPED? YES ☐ NO ☐ (4_ PTS) **(4 PTS) _____**

4. CONSTRUCTION:
WERE THE FOLLOWING SEDIMENT CONTROL STRUCTURES PROPERLY INSTALLED/MAINTAINED?
A. ROAD DITCHES (1)_ (2)_(3)_(4)_ (PTS) B. CROSS DRAINS (1)_ (2)_(3)_(4)_ (5)_(PTS)
C. CULVERTS (1)_ (2)_(3)_(4)_ (5)_(PTS). D. CREEK CROSSINGS (1)_ (2)_(3)_ (PTS)
E. DIVERSION DITCHES (1)_ (2)_(3)_ (PTS) F. BARRIERS (1)_ (2)_(3)_ (PTS)
G. TEMPORARY SEEDING YES ☐ NO ☐ (10_ PTS) **POINTS AVAILABLE FOR QUESTION 4: (33 PTS)_____**

5. HAS TOP SOIL (IF ANY) BEEN STOCKED PILED? YES ☐ NO ☐ (2_PTS) **(2 PTS) _____**

6. IS THE PIT PROPERLY INSTALLED AND MAINTAINED? YES ☐ NO ☐ (9_PTS) **(9 PTS) _____**

7. RECLAMATION:
A. ROADWAY (1)_ (2)_(3)_ (PTS B. LOCATION (1)_ (2)_(3)_ (PTS)
C. PITS (1)_ (2)_(3)_ (PTS) D. PIPELINES (1)_ (2)_(3)_ (PTS)
E. TANK DIKES (1)_ (2)_(3)_ (PTS) F. API INSTALLED YES OR NO 3_(PTS)
G. ADEQUATE SEEDING MATERIALS (1)_ (2)_(3)_ (PTS)
H. WAS SEED BED ADEQUATE (1)_ (2)_(3)_ (PTS) **POINTS AVAILABLE FOR QUESTION 7: (24 PTS)_____**

8. WAS RECLAMATION COMPLETED WITHIN:
☐ MTHS OF TD 6_ PTS ONLY; ☐ MTHS OF TD 12_ PTS ONLY; ☐ MTHS OF TD 19_ PTS ONLY.
MAXIMUM POINTS AVAILABLE FOR QUESTION 8: (19 PTS)_____

TOTAL MAXIMUM POSSIBLE SCORE OF 99.

TOTAL RECLAMATION SCORE: _____

INSPECTIONS :

_____ _____
DATE RELEASED INSPECTOR

INSPECTORS PERMIT SUMMARY FORM

API :

INSPECTIONS :

IR-26 Rev 08 INSPECTORS PERMIT SUMMARY FORM

PAGE 1 **GPS YES** ☐ **NO** ☐

DATE STARTED/LOCATION:		API #:		WELL NO.	
DRILLING COMMENCED:		OPERATOR:			
TD DATE:		DEPTH:		FARM:	
WATER DEPTHS		COAL DEPTHS			

QUESTIONS FOR THIS REPORT ARE IN ACCORDANCE OF WV CODE 22-6-30
AND REGULATIONS 35CSR 4-12.1 AND 35CSR 4-16 AND THE GENERAL WATER POLLUTION CONTROL PERMIT

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1. DID OPERATOR GIVE PROPER NOTICE TO INSPECTOR BEFORE THE FOLLOWING:
A. CONSTRUCTION YES ☐ NO ☐ (2_ PTS) B. DRILLING YES ☐ NO ☐ (2_PTS)
(4 PTS)_____

2. WAS THE TIMBER CUT, STACKED, AND BRUSH USED FOR SEDIMENT BARRIERS BEFORE DIRT WORK STARTED? YES ☐ NO ☐ (4_ PTS) **(4 PTS) _____**

3. ARE ALL LOCATION AND/OR ROAD BANKS BEING SLOPED? YES ☐ NO ☐ (4_ PTS) **(4 PTS) _____**

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WERE THE FOLLOWING SEDIMENT CONTROL STRUCTURES PROPERLY INSTALLED/MAINTAINED?
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G. TEMPORARY SEEDING YES ☐ NO ☐ (10_ PTS) **POINTS AVAILABLE FOR QUESTION 4: (33 PTS)_____**

5. HAS TOP SOIL (IF ANY) BEEN STOCKED PILED? YES ☐ NO ☐ (2_PTS) **(2 PTS) _____**

6. IS THE PIT PROPERLY INSTALLED AND MAINTAINED? YES ☐ NO ☐ (9_PTS) **(9 PTS) _____**

7. RECLAMATION:
A. ROADWAY (1)_ (2)_(3)_ (PTS B. LOCATION (1)_ (2)_(3)_ (PTS)
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TOTAL MAXIMUM POSSIBLE SCORE OF 99.

TOTAL RECLAMATION SCORE: _____

INSPECTIONS :

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DATE RELEASED INSPECTOR

INSPECTORS PERMIT SUMMARY FORM

API :

INSPECTIONS :

IR-26 Rev 08 INSPECTORS PERMIT SUMMARY FORM

PAGE 1 **GPS YES** ☐ **NO** ☐

DATE STARTED/LOCATION:		API #:		WELL NO.	
DRILLING COMMENCED:		OPERATOR:			
TD DATE:		DEPTH:		FARM:	
WATER DEPTHS		COAL DEPTHS			

QUESTIONS FOR THIS REPORT ARE IN ACCORDANCE OF WV CODE 22-6-30
AND REGULATIONS 35CSR 4-12.1 AND 35CSR 4-16 AND THE GENERAL WATER POLLUTION CONTROL PERMIT

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G. TEMPORARY SEEDING YES ☐ NO ☐ (10_ PTS) **POINTS AVAILABLE FOR QUESTION 4: (33 PTS)_____**

5. HAS TOP SOIL (IF ANY) BEEN STOCKED PILED? YES ☐ NO ☐ (2_PTS) **(2 PTS) _____**

6. IS THE PIT PROPERLY INSTALLED AND MAINTAINED? YES ☐ NO ☐ (9_PTS) **(9 PTS) _____**

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TOTAL RECLAMATION SCORE: _____

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_____ _____
DATE RELEASED INSPECTOR

INSPECTORS PERMIT SUMMARY FORM

API :

INSPECTIONS :

IR-26 Rev 08 INSPECTORS PERMIT SUMMARY FORM

PAGE 1 **GPS YES** ☐ **NO** ☐

DATE STARTED/LOCATION:		API #:		WELL NO.	
DRILLING COMMENCED:		OPERATOR:			
TD DATE:		DEPTH:		FARM:	
WATER DEPTHS		COAL DEPTHS			

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6. IS THE PIT PROPERLY INSTALLED AND MAINTAINED? YES ☐ NO ☐ (9_PTS) **(9 PTS) _____**

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TOTAL MAXIMUM POSSIBLE SCORE OF 99.

TOTAL RECLAMATION SCORE: _____

INSPECTIONS :

_____ _____
DATE RELEASED INSPECTOR

INSPECTORS PERMIT SUMMARY FORM

API :

INSPECTIONS :

IR-8
(REV 4-99)

API NO.: 47-099-01100

WELL PLUGGING INSPECTION & RELEASE FORM

PLUGGING COMMENCED_____ OPERATOR: CORE APPALACHIA OPERATING LLC
PLUGGING COMPLETED_____ FARM: ELMER AND EMMA WALKER
VERBAL PERMISSION ON_____ WELL NO: 8600

1. IS COAL BEING MINED IN THE AREA? YES NO N/A

2. WERE CEMENT AND GEL MIXED AND USED IN ACCORDANCE WITH ACCEPTED INDUSTRY STANDARDS?
   - A. BOTTOM HOLE PLUGGED YES NO N/A
   - B. 100' PLUGS YES NO N/A
   - C. LATEX PLUGS USED FOR H_2S GAS YES NO N/A
   - D. PROPER PLUGS THROUGH COAL SEAMS YES NO N/A
   - E. PROPER PLUGS SET TO PROTECT FRESHWATER YES NO N/A
   - F. PROPER AMOUNT OF GEL USED TO DISPLACE PLUGS YES NO N/A

TYPE	FROM	TO	PIPE REMOVED

3. WERE ALL CHANGES APPROVED BY INSPECTOR? YES NO

4. WAS THE EQUIPMENT USED FOR PULLING CASING PROPERLY SIZED AND RIGGED TO PULL 150% OF THE HEAVIEST STRING OF PIPE EXPECTED TO BE PULLED? YES NO

5. DID THE OPERATOR GIVE THE INSPECTOR PROPER NOTICE? YES NO

6. WERE ACCURATE PLUGGING RECORDS KEPT BY THE OPERATOR? YES NO

7. WAS A PROPER MONUMENT SET WITH API NUMBER ATTACHED? YES NO

8. DID WELL SITE AND ACCESS ROAD MEET THE FOLLOWING RECLAMATION REQUIREMENTS?
   - A. RECLAIMED YES NO
   - B. FENCES REPLACED YES NO
   - C. MULCHED YES NO
   - D. PROPER DRAINAGE YES NO
   - E. SEEDED YES NO
   - F. ALL EQUIPMENT REMOVED YES NO
   - G. PIT BACKFILLED YES NO

_____ _____
DATE RELEASED INSPECTOR'S SIGNATURE

RECORD ALL VISITS TO THIS WELL ON PAGE 2

IR-8
PAGE 2
API NO: 47-099-01100

DATE	VISITS

IR-8
(REV 4-99)

API NO.: _____ _____

WELL PLUGGING INSPECTION & RELEASE FORM

PLUGGING COMMENCED_____ OPERATOR:_____
PLUGGING COMPLETED_____ FARM:_____
VERBAL PERMISSION ON_____ WELL NO:_____

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IR-8
PAGE 2
API NO: _____ _____

DATE	VISITS

IR-8
(REV 4-99)

API NO.: _____ _____

WELL PLUGGING INSPECTION & RELEASE FORM

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IR-8
PAGE 2
API NO: _____ _____

DATE	VISITS

IR-8
(REV 4-99)

API NO.: _____ _____

WELL PLUGGING INSPECTION & RELEASE FORM

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PLUGGING COMPLETED_____ FARM:_____
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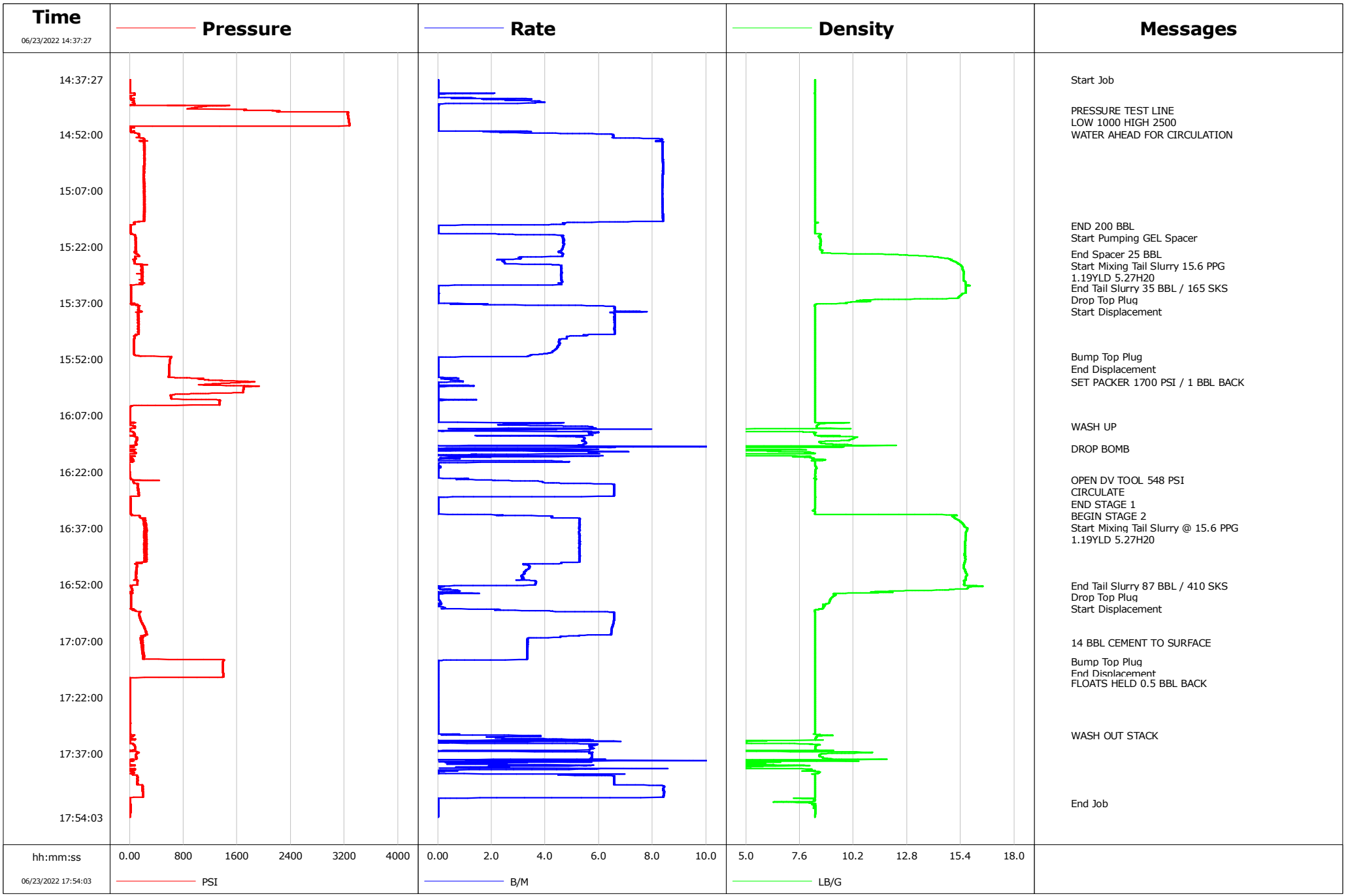
RECORD ALL VISITS TO THIS WELL ON PAGE 2

IR-8
PAGE 2
API NO: _____ _____

DATE	VISITS

Schlumberger Cementing Job Report

Well	TIMMY MINCH OHI 210H	**Client**	SWN PRODUCTION
Field	TWILIGHT	**SIR No.**	EOHC-01530
Engineer	ZACHARY BUCK	**Job Type**	SURFACE
Country	United States	**Job Date**	06-23-2022



Schlumberger Cementing Service Report

Customer	Job Number
SWN PRODUCTION	EOHC-01530

Well	Location (legal)	Schlumberger Location	Job Start
TIMMY MINCH OHI 210H	TIMMY MINCH PAD	STRASBURG	Jun/23/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
TWILIGHT	Clean-Sandstone	0 deg	17.5 in	576.0 ft	576.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
OHIO	West Virginia	psi	66 degF	80 degF	lb/gal

Well Master	API/UWI
0066504162	47-069-00337-00-00

Rig Name	Drilled For	Service Via
SDC DRILLING #40	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
	lb/gal	cP

Service Line	Job Type
Cementing	SURFACE

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Service Instructions

200 BBL WATER AHEAD
25 BBL GEL
34.8 BBL TAIL @ 15.6 PPG
1.19YLD 5.27H20 165SKS
TOP PLUG
DISP 76 BBL H20
SET PACKER / DROP BOMB / CIRCULATE
STG 2
86.9 BBL TAIL @ 15.6 PPG
TOP PLUG

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
556.0	13.4	54.5	J55	BUTT
0.0	0.0	0.0		

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	76.2 bbl	Seal Bore	411.0 ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	85.9 bbl	24.7 bbl	90.9 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
X	X

Lift Pressure	Pipe Rotated	Pipe Reciprocated
200 psi	☐	☐

No. Centralizers	Top Plugs	Bottom Plugs
5	2	

Cement Head Type
Single

Job Scheduled For	Arrived on Location	Leave Location
Jun/23/2022 08:00	Jun/23/2022 08:00	Jun/23/2022 19:00

Casing Tools

Shoe Type	Float
Shoe Depth	556.0 ft
Stage Tool Type	DV TOOL PKR
Stage Tool Depth	411.0 ft
Collar Type	Float
Collar Depth	493.0 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
06/23/2022	14:37:27	5	0.0	8.34	Stopped Acquisition
06/23/2022	14:37:29	4	0.0	8.34	Start Job
06/23/2022	14:38:47	5	0.0	8.34	
06/23/2022	14:40:07	5	0.0	8.34	
06/23/2022	14:41:27	71	0.0	8.34	
06/23/2022	14:42:47	29	2.1	8.34	
06/23/2022	14:44:07	64	0.0	8.34	
06/23/2022	14:45:27	1709	0.0	8.34	
06/23/2022	14:45:37	1705	0.0	8.35	PRESSURE TEST LINE
06/23/2022	14:45:38	1705	0.0	8.34	LOW 1000 HIGH 2500
06/23/2022	14:46:47	3248	0.0	8.34	
06/23/2022	14:48:07	3259	0.0	8.35	
06/23/2022	14:49:27	3275	0.0	8.34	
06/23/2022	14:50:47	14	0.0	8.34	
06/23/2022	14:51:55	150	5.8	8.34	WATER AHEAD FOR CIRCULATION
06/23/2022	14:52:07	141	6.5	8.34	
06/23/2022	14:53:27	213	8.3	8.35	
06/23/2022	14:54:47	218	8.4	8.35	
06/23/2022	14:56:07	215	8.4	8.35	
06/23/2022	14:57:27	217	8.4	8.35	
06/23/2022	14:58:47	218	8.4	8.35	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH OHI 210H	TWILIGHT	Jun/23/2022	SWN PRODUCTION	EOHC-01530

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
06/23/2022	15:01:27	215	8.4	8.35	
06/23/2022	15:02:47	205	8.4	8.35	
06/23/2022	15:04:07	205	8.4	8.35	
06/23/2022	15:05:27	213	8.4	8.35	
06/23/2022	15:06:47	221	8.4	8.35	
06/23/2022	15:08:07	217	8.4	8.35	
06/23/2022	15:09:27	223	8.4	8.35	
06/23/2022	15:10:47	220	8.4	8.35	
06/23/2022	15:12:07	215	8.4	8.35	
06/23/2022	15:13:27	209	8.4	8.35	
06/23/2022	15:14:47	216	8.4	8.35	
06/23/2022	15:16:07	47	4.2	8.35	
06/23/2022	15:16:23	11	0.0	8.35	END 200 BBL
06/23/2022	15:17:27	12	0.0	8.35	
06/23/2022	15:18:14	13	0.0	8.35	Start Pumping GEL Spacer
06/23/2022	15:18:47	75	3.1	8.59	
06/23/2022	15:20:07	85	4.7	8.60	
06/23/2022	15:21:27	85	4.7	8.60	
06/23/2022	15:22:47	92	4.6	8.59	
06/23/2022	15:23:59	112	4.7	11.41	End Spacer 25 BBL
06/23/2022	15:24:02	110	4.6	11.76	Start Mixing Tail Slurry 15.6 PPG
06/23/2022	15:24:07	123	4.6	12.31	
06/23/2022	15:25:27	69	2.2	14.93	
06/23/2022	15:26:47	227	4.3	15.36	
06/23/2022	15:28:07	183	4.6	15.49	
06/23/2022	15:28:11	169	4.6	15.49	1.19YLD 5.27H20
06/23/2022	15:29:27	184	4.6	15.52	
06/23/2022	15:30:47	185	4.6	15.52	
06/23/2022	15:32:07	190	4.6	15.61	
06/23/2022	15:32:59	20	0.0	15.63	End Tail Slurry 35 BBL / 165 SKS
06/23/2022	15:33:27	19	0.0	15.63	
06/23/2022	15:34:47	19	0.0	15.44	
06/23/2022	15:36:03	19	0.0	11.90	Drop Top Plug
06/23/2022	15:36:07	20	0.0	11.09	
06/23/2022	15:37:04	21	0.0	9.88	Start Displacement
06/23/2022	15:37:27	29	1.8	8.36	
06/23/2022	15:38:47	137	6.6	8.34	
06/23/2022	15:40:07	122	6.6	8.34	
06/23/2022	15:41:27	134	6.6	8.34	
06/23/2022	15:42:47	134	6.6	8.34	
06/23/2022	15:44:07	128	6.6	8.35	
06/23/2022	15:45:27	88	5.6	8.35	
06/23/2022	15:46:47	64	4.5	8.35	
06/23/2022	15:48:07	64	4.5	8.34	
06/23/2022	15:49:27	62	4.4	8.35	
06/23/2022	15:50:47	68	3.6	8.35	
06/23/2022	15:51:20	629	1.9	8.35	Bump Top Plug
06/23/2022	15:51:21	618	1.3	8.35	End Displacement
06/23/2022	15:53:27	590	0.0	8.35	
06/23/2022	15:54:47	585	0.0	8.35	
06/23/2022	15:56:07	583	0.0	8.35	
06/23/2022	15:57:27	1116	0.5	8.35	
06/23/2022	15:57:59	1862	0.9	8.35	SET PACKER 1700 PSI / 1 BBL BACK
06/23/2022	15:58:47	1066	0.0	8.34	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH OHI 210H	TWILIGHT	Jun/23/2022	SWN PRODUCTION	EOHC-01530

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
06/23/2022	16:01:27	651	0.0	8.35	
06/23/2022	16:02:47	1293	1.4	8.35	
06/23/2022	16:04:07	1336	0.0	8.35	
06/23/2022	16:05:27	3	0.0	8.35	
06/23/2022	16:06:47	2	0.0	8.35	
06/23/2022	16:08:07	2	0.0	8.35	
06/23/2022	16:09:27	-7	2.5	8.49	
06/23/2022	16:09:49	75	5.0	8.41	WASH UP
06/23/2022	16:10:47	3	3.2	3.11	
06/23/2022	16:12:07	74	5.7	8.35	
06/23/2022	16:13:27	108	5.4	10.03	
06/23/2022	16:14:47	101	5.4	10.08	
06/23/2022	16:15:49	-21	0.0	2.31	DROP BOMB
06/23/2022	16:16:07	81	5.4	7.91	
06/23/2022	16:17:27	-15	0.5	4.04	
06/23/2022	16:18:47	48	0.0	8.85	
06/23/2022	16:20:07	-5	0.0	8.35	
06/23/2022	16:21:27	-1	0.0	8.37	
06/23/2022	16:22:47	-0	0.0	8.35	
06/23/2022	16:24:07	47	1.3	8.36	
06/23/2022	16:24:13	148	2.0	8.33	OPEN DV TOOL 548 PSI
06/23/2022	16:25:01	67	4.4	8.35	CIRCULATE
06/23/2022	16:25:27	122	6.6	8.35	
06/23/2022	16:26:47	129	6.6	8.35	
06/23/2022	16:28:07	137	6.6	8.35	
06/23/2022	16:28:34	25	6.4	8.35	END STAGE 1
06/23/2022	16:29:27	11	0.0	8.35	
06/23/2022	16:30:47	15	0.0	8.35	
06/23/2022	16:31:35	15	0.0	8.34	BEGIN STAGE 2
06/23/2022	16:32:07	14	0.0	8.33	
06/23/2022	16:33:27	29	2.0	14.72	
06/23/2022	16:33:32	43	2.4	15.15	Start Mixing Tail Slurry @ 15.6 PPG
06/23/2022	16:34:47	215	5.3	15.25	
06/23/2022	16:36:07	238	5.3	15.54	
06/23/2022	16:37:27	242	5.3	15.69	
06/23/2022	16:38:05	238	5.3	15.65	1.19YLD 5.27H20
06/23/2022	16:38:47	249	5.3	15.64	
06/23/2022	16:40:07	256	5.3	15.62	
06/23/2022	16:41:27	217	5.3	15.60	
06/23/2022	16:42:47	212	5.3	15.59	
06/23/2022	16:44:07	227	5.3	15.58	
06/23/2022	16:45:27	228	5.3	15.61	
06/23/2022	16:46:47	104	3.2	15.55	
06/23/2022	16:48:07	99	3.3	15.60	
06/23/2022	16:49:27	93	3.2	15.68	
06/23/2022	16:50:47	80	3.1	15.63	
06/23/2022	16:52:07	115	3.6	15.55	
06/23/2022	16:52:20	11	1.7	15.84	End Tail Slurry 87 BBL / 410 SKS
06/23/2022	16:53:27	34	0.2	14.77	
06/23/2022	16:55:20	19	0.0	9.18	Drop Top Plug
06/23/2022	16:56:07	18	0.0	9.08	
06/23/2022	16:57:27	19	0.1	8.82	
06/23/2022	16:58:21	18	0.3	8.73	Start Displacement
06/23/2022	16:58:47	33	2.3	8.39	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH OHI 210H	TWILIGHT	Jun/23/2022	SWN PRODUCTION	EOHC-01530

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
06/23/2022	17:01:27	164	6.6	8.34	
06/23/2022	17:02:47	206	6.5	8.34	
06/23/2022	17:04:07	233	6.5	8.34	
06/23/2022	17:05:27	221	6.4	8.34	
06/23/2022	17:06:47	161	3.3	8.35	
06/23/2022	17:07:22	186	3.3	8.34	14 BBL CEMENT TO SURFACE
06/23/2022	17:08:07	179	3.3	8.34	
06/23/2022	17:09:27	202	3.3	8.34	
06/23/2022	17:10:47	195	3.3	8.34	
06/23/2022	17:12:07	1409	2.5	8.35	
06/23/2022	17:12:22	1394	0.0	8.35	Bump Top Plug
06/23/2022	17:13:27	1389	0.0	8.35	
06/23/2022	17:14:47	1390	0.0	8.35	
06/23/2022	17:16:07	1394	0.0	8.35	
06/23/2022	17:17:27	6	0.0	8.35	
06/23/2022	17:18:10	3	0.0	8.35	FLOATS HELD 0.5 BBL BACK
06/23/2022	17:18:47	4	0.0	8.35	
06/23/2022	17:20:07	3	0.0	8.35	
06/23/2022	17:21:27	4	0.0	8.35	
06/23/2022	17:22:47	4	0.0	8.35	
06/23/2022	17:24:07	5	0.0	8.35	
06/23/2022	17:25:27	4	0.0	8.35	
06/23/2022	17:26:47	4	0.0	8.35	
06/23/2022	17:28:07	4	0.0	8.35	
06/23/2022	17:29:27	6	0.0	8.35	
06/23/2022	17:30:47	7	0.0	8.35	
06/23/2022	17:32:07	11	0.1	8.56	
06/23/2022	17:32:11	80	1.3	8.94	WASH OUT STACK
06/23/2022	17:33:27	72	5.7	8.36	
06/23/2022	17:34:47	69	5.9	8.53	
06/23/2022	17:36:07	78	5.6	8.35	
06/23/2022	17:37:27	96	5.7	8.55	
06/23/2022	17:38:47	-15	2.1	4.90	
06/23/2022	17:40:07	68	4.0	6.46	
06/23/2022	17:41:27	66	0.7	7.99	
06/23/2022	17:42:47	48	4.5	8.34	
06/23/2022	17:44:07	116	6.6	8.35	
06/23/2022	17:45:27	183	6.6	8.35	
06/23/2022	17:46:47	193	8.4	8.35	
06/23/2022	17:48:07	196	8.4	8.35	
06/23/2022	17:49:27	3	0.0	8.35	
06/23/2022	17:50:15	7	0.0	8.07	End Job
06/23/2022	17:50:47	7	0.0	8.36	
06/23/2022	17:52:07	8	0.0	8.36	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH OHI 210H	TWILIGHT	Jun/23/2022	SWN PRODUCTION	EOHC-01530

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
5.0			8.5	122.0	0.0	25.0	

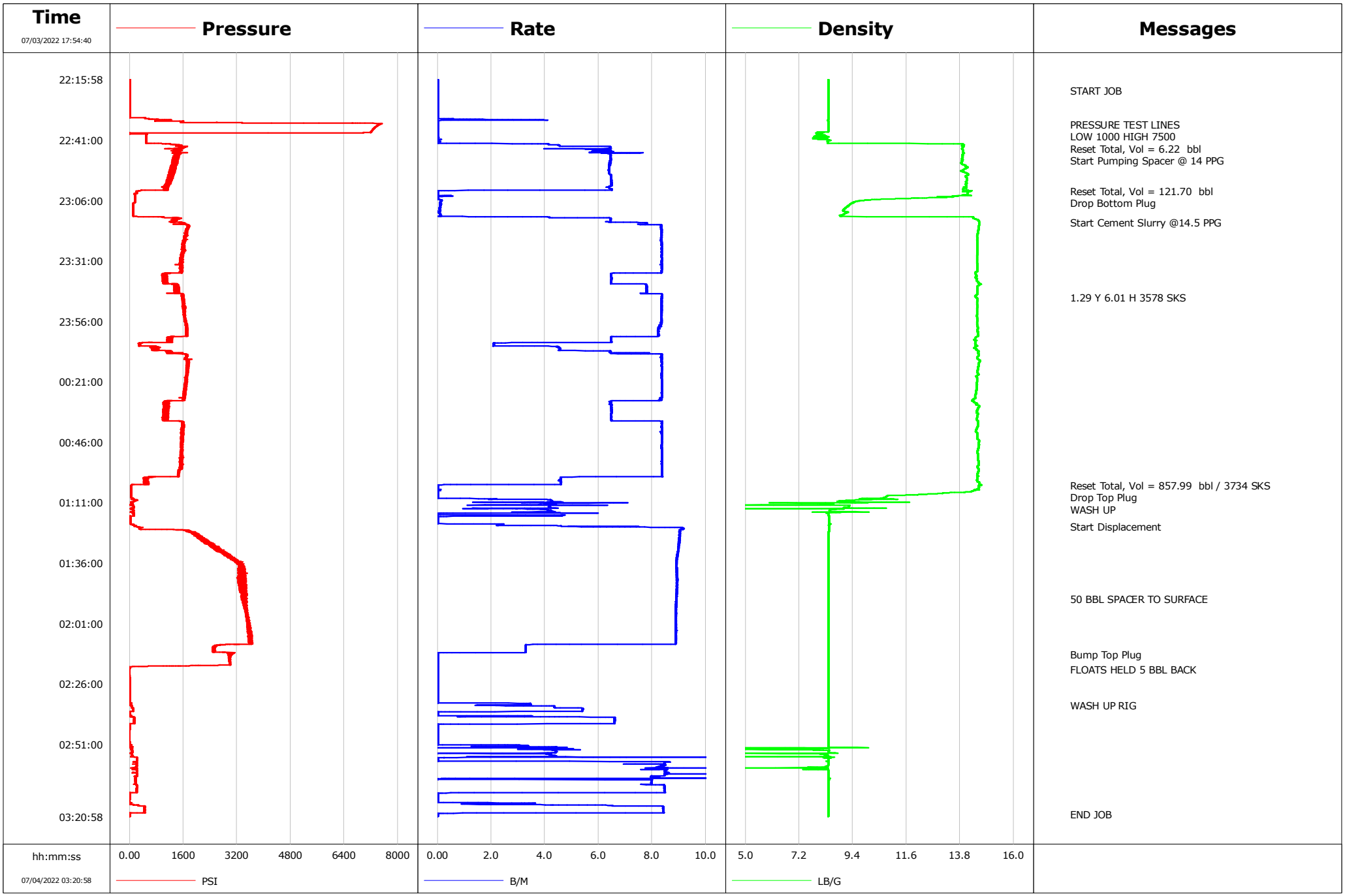
Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
3291	12	270	1400			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume
%	121.0 bbl	63.5 bbl	70 degF	[X]	14.0 bbl
				Washed Thru Perfs [ ]	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
COMPANY MAN	ZACHARY BUCK	-	[X] -

Schlumberger Cementing Job Report

Well	TOMMY MINCH OHI 210H	**Client**	SWN PRODUCTION
Field	TWILIGHT	**SIR No.**	EOHA-00026
Engineer	ZACHARY BUCK	**Job Type**	PRODUCTION
Country	USA	**Job Date**	7/3/2022



Schlumberger

Cementing Service Report

Customer	Job Number
SWN PRODUCTION	EOHA-00026

Well	Location (legal)	Schlumberger Location	Job Start
TOMMY MINCH OHI 210H	TOMMY MINCH PAD	STRASBURG	Jul/03/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
TWILIGHT	Shale	90 deg	8.5 in	19857.0 ft	6283.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
OHIO	West Virginia	psi	130 degF	129 degF	lb/gal

Well Master	API/UWI
0066504162	47-069-00337-00-00

Rig Name	Drilled For	Service Via
SDC DRILLING #40	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
Oil Mud	13.50 lb/gal	cP

Service Line	Job Type
Cementing	PRODUCTION

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	EXPRES* head

Service Instructions

120 BBL MPE @ 14PPG
BOTTOM PLUG
822 BBL TAIL @ 14.5PPG
1.29Y 6.01H 3578SKS
TOP PLUG
DISP 440 BBL H20
50 BBL SPACER TO SURF

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
19857.0	5.5	20.0	P110	BUTT
0.0	0.0	0.0		

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	439.8 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	440.8 bbl	91.3 bbl	746.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
X	X

Lift Pressure	Pipe Rotated	Pipe Reciprocated
2600 psi	X	

No. Centralizers	Top Plugs	Bottom Plugs
450	1	1

Cement Head Type

Job Scheduled For	Arrived on Location	Leave Location
Jul/03/2022 15:00	Jul/03/2022 15:00	Jul/04/2022 04:30

Casing Tools

Shoe Type	Float
Shoe Depth	19857.0 ft
Stage Tool Type	
Stage Tool Depth	ft
Collar Type	Float
Collar Depth	19810.0 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
07/03/2022	22:19:27	6	0.0	8.39	
07/03/2022	22:20:32	7	0.0	8.39	START JOB
07/03/2022	22:20:47	8	0.0	8.39	
07/03/2022	22:22:07	8	0.0	8.39	
07/03/2022	22:23:27	8	0.0	8.39	
07/03/2022	22:24:47	9	0.0	8.39	
07/03/2022	22:26:07	8	0.0	8.39	
07/03/2022	22:27:27	8	0.0	8.39	
07/03/2022	22:28:47	9	0.0	8.39	
07/03/2022	22:30:07	10	0.0	8.39	
07/03/2022	22:31:27	10	0.0	8.39	
07/03/2022	22:32:47	836	2.8	8.38	
07/03/2022	22:34:07	7261	0.0	8.39	
07/03/2022	22:34:39	7438	0.0	8.39	PRESSURE TEST LINES
07/03/2022	22:34:43	7427	0.0	8.39	LOW 1000 HIGH 7500
07/03/2022	22:35:15	7368	0.0	8.39	Reset Total, Vol = 6.22 bbl
07/03/2022	22:35:27	7346	0.0	8.39	
07/03/2022	22:36:47	7244	0.0	8.39	
07/03/2022	22:38:07	-3	0.0	8.12	
07/03/2022	22:39:27	494	0.0	8.03	
07/03/2022	22:40:47	494	0.0	8.10	

Well	Field	Job Start	Customer	Job Number
TOMMY MINCH OHI 210H	TWILIGHT	Jul/03/2022	SWN PRODUCTION	EOHA-00026

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
07/03/2022	22:43:27	1455	4.5	13.88	
07/03/2022	22:43:58	1649	6.4	13.91	Start Pumping Spacer @ 14 PPG
07/03/2022	22:44:47	1323	6.1	13.88	
07/03/2022	22:46:07	1478	6.2	13.92	
07/03/2022	22:47:27	1404	6.4	13.90	
07/03/2022	22:48:47	1455	6.4	13.88	
07/03/2022	22:50:07	1431	6.5	13.87	
07/03/2022	22:51:27	1276	6.4	14.00	
07/03/2022	22:52:47	1359	6.4	14.04	
07/03/2022	22:54:07	1237	6.4	13.91	
07/03/2022	22:55:27	1192	6.5	14.12	
07/03/2022	22:56:47	1267	6.5	14.07	
07/03/2022	22:58:07	1099	6.5	14.05	
07/03/2022	22:59:27	1204	6.5	14.03	
07/03/2022	23:00:47	1138	6.4	14.04	
07/03/2022	23:01:56	305	0.1	14.25	Reset Total, Vol = 121.70 bbl
07/03/2022	23:02:07	265	0.0	14.25	
07/03/2022	23:02:58	209	0.0	14.11	Drop Bottom Plug
07/03/2022	23:03:27	148	0.0	14.10	
07/03/2022	23:04:47	152	0.0	13.10	
07/03/2022	23:07:27	117	0.1	9.30	
07/03/2022	23:08:47	113	0.1	9.15	
07/03/2022	23:10:07	111	0.1	9.01	
07/03/2022	23:11:27	112	0.1	9.05	
07/03/2022	23:12:47	872	3.5	14.17	
07/03/2022	23:14:07	1291	6.5	14.53	
07/03/2022	23:14:58	1304	6.4	14.57	Start Cement Slurry @14.5 PPG
07/03/2022	23:15:27	1672	7.8	14.58	
07/03/2022	23:16:47	1759	8.3	14.56	
07/03/2022	23:18:07	1738	8.4	14.54	
07/03/2022	23:19:27	1704	8.3	14.53	
07/03/2022	23:20:47	1661	8.3	14.50	
07/03/2022	23:22:07	1711	8.3	14.50	
07/03/2022	23:23:27	1629	8.3	14.51	
07/03/2022	23:24:47	1606	8.3	14.51	
07/03/2022	23:26:07	1603	8.3	14.51	
07/03/2022	23:27:27	1580	8.3	14.50	
07/03/2022	23:28:47	1556	8.3	14.50	
07/03/2022	23:30:07	1544	8.4	14.49	
07/03/2022	23:31:27	1542	8.3	14.50	
07/03/2022	23:32:47	1554	8.4	14.50	
07/03/2022	23:34:07	1534	8.4	14.51	
07/03/2022	23:35:27	1576	8.3	14.50	
07/03/2022	23:36:47	1065	6.5	14.45	
07/03/2022	23:38:07	1007	6.5	14.44	
07/03/2022	23:39:27	1106	6.5	14.51	
07/03/2022	23:40:47	1437	7.8	14.63	
07/03/2022	23:42:07	1347	7.8	14.51	
07/03/2022	23:43:27	1463	7.8	14.51	
07/03/2022	23:44:47	1580	8.3	14.51	
07/03/2022	23:45:58	1580	8.4	14.44	1.29 Y 6.01 H 3578 SKS
07/03/2022	23:46:07	1561	8.4	14.45	
07/03/2022	23:47:27	1621	8.3	14.51	
07/03/2022	23:48:47	1582	8.3	14.50	

Well	Field	Job Start	Customer	Job Number
TOMMY MINCH OHI 210H	TWILIGHT	Jul/03/2022	SWN PRODUCTION	EOHA-00026

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
07/03/2022	23:51:27	1624	8.4	14.49	
07/03/2022	23:52:47	1627	8.3	14.49	
07/03/2022	23:54:07	1634	8.3	14.48	
07/03/2022	23:55:27	1672	8.3	14.51	
07/03/2022	23:56:47	1669	8.3	14.50	
07/03/2022	23:58:07	1669	8.3	14.51	
07/03/2022	23:59:27	1728	8.2	14.51	
07/04/2022	00:00:47	1687	8.2	14.53	
07/04/2022	00:02:07	1713	8.2	14.53	
07/04/2022	00:03:27	1256	6.5	14.40	
07/04/2022	00:04:47	583	5.9	14.43	
07/04/2022	00:06:07	300	2.1	14.49	
07/04/2022	00:07:27	739	4.6	14.46	
07/04/2022	00:10:07	1726	8.4	14.56	
07/04/2022	00:11:27	1671	8.4	14.50	
07/04/2022	00:12:47	1754	8.3	14.59	
07/04/2022	00:14:07	1699	8.3	14.55	
07/04/2022	00:15:27	1716	8.4	14.54	
07/04/2022	00:16:47	1739	8.4	14.51	
07/04/2022	00:18:07	1699	8.3	14.54	
07/04/2022	00:19:27	1715	8.3	14.49	
07/04/2022	00:20:47	1691	8.4	14.49	
07/04/2022	00:22:07	1670	8.4	14.47	
07/04/2022	00:23:27	1670	8.3	14.46	
07/04/2022	00:24:47	1657	8.4	14.46	
07/04/2022	00:26:07	1640	8.3	14.44	
07/04/2022	00:27:27	1659	8.4	14.41	
07/04/2022	00:28:47	1566	8.2	14.29	
07/04/2022	00:30:07	1147	6.5	14.50	
07/04/2022	00:31:27	1102	6.5	14.58	
07/04/2022	00:32:47	1093	6.5	14.51	
07/04/2022	00:34:07	1116	6.5	14.53	
07/04/2022	00:35:27	1013	6.5	14.50	
07/04/2022	00:36:47	1089	6.5	14.48	
07/04/2022	00:38:07	1613	8.4	14.53	
07/04/2022	00:39:27	1587	8.3	14.52	
07/04/2022	00:40:47	1566	8.4	14.46	
07/04/2022	00:42:07	1591	8.4	14.49	
07/04/2022	00:43:27	1607	8.4	14.51	
07/04/2022	00:44:47	1544	8.4	14.52	
07/04/2022	00:46:07	1563	8.4	14.56	
07/04/2022	00:47:27	1578	8.3	14.56	
07/04/2022	00:48:47	1570	8.3	14.54	
07/04/2022	00:50:07	1576	8.4	14.51	
07/04/2022	00:51:27	1586	8.4	14.53	
07/04/2022	00:52:47	1516	8.4	14.53	
07/04/2022	00:54:07	1543	8.3	14.54	
07/04/2022	00:55:27	1559	8.4	14.55	
07/04/2022	00:56:47	1542	8.4	14.53	
07/04/2022	00:58:07	1477	8.4	14.55	
07/04/2022	00:59:27	1451	8.4	14.51	
07/04/2022	01:00:47	505	4.6	14.50	
07/04/2022	01:02:07	534	4.6	14.50	
07/04/2022	01:03:27	470	4.6	14.58	

Well	Field	Job Start	Customer	Job Number
TOMMY MINCH OHI 210H	TWILIGHT	Jul/03/2022	SWN PRODUCTION	EOHA-00026

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
07/04/2022	01:04:47	57	0.0	14.56	
07/04/2022	01:05:58	58	0.1	14.37	Drop Top Plug
07/04/2022	01:06:07	56	0.0	14.33	
07/04/2022	01:07:27	58	0.0	12.66	
07/04/2022	01:08:47	56	0.0	10.72	
07/04/2022	01:10:07	225	4.2	9.24	
07/04/2022	01:10:58	69	3.9	8.94	WASH UP
07/04/2022	01:11:27	68	4.3	8.62	
07/04/2022	01:12:47	116	4.2	9.24	
07/04/2022	01:14:07	107	4.1	8.46	
07/04/2022	01:15:27	111	0.2	8.40	
07/04/2022	01:16:47	15	0.1	8.43	
07/04/2022	01:18:07	22	0.0	8.43	
07/04/2022	01:19:27	22	0.0	8.43	
07/04/2022	01:20:47	190	4.6	8.43	
07/04/2022	01:20:58	188	4.9	8.43	Start Displacement
07/04/2022	01:22:07	603	9.1	8.42	
07/04/2022	01:23:27	1953	9.0	8.40	
07/04/2022	01:24:47	2014	9.0	8.40	
07/04/2022	01:26:07	2283	9.0	8.40	
07/04/2022	01:27:27	2227	9.0	8.40	
07/04/2022	01:28:47	2388	9.0	8.40	
07/04/2022	01:30:07	2630	9.0	8.40	
07/04/2022	01:31:27	2726	9.0	8.40	
07/04/2022	01:32:47	2942	8.9	8.40	
07/04/2022	01:34:07	3064	8.9	8.40	
07/04/2022	01:35:27	3211	8.9	8.40	
07/04/2022	01:36:47	3371	8.9	8.40	
07/04/2022	01:38:07	3329	8.9	8.40	
07/04/2022	01:39:27	3260	8.9	8.40	
07/04/2022	01:40:47	3278	8.9	8.40	
07/04/2022	01:42:07	3425	8.9	8.40	
07/04/2022	01:43:27	3232	8.9	8.40	
07/04/2022	01:44:47	3450	8.9	8.40	
07/04/2022	01:46:07	3470	8.9	8.40	
07/04/2022	01:47:27	3347	8.9	8.40	
07/04/2022	01:48:47	3510	8.9	8.40	
07/04/2022	01:50:07	3355	8.9	8.40	
07/04/2022	01:50:58	3367	8.9	8.40	50 BBL SPACER TO SURFACE
07/04/2022	01:52:47	3422	8.9	8.40	
07/04/2022	01:54:07	3466	8.9	8.39	
07/04/2022	01:55:27	3448	8.9	8.40	
07/04/2022	01:56:47	3518	8.9	8.40	
07/04/2022	01:58:07	3530	8.9	8.40	
07/04/2022	01:59:27	3499	8.9	8.39	
07/04/2022	02:00:47	3578	8.9	8.40	
07/04/2022	02:02:07	3558	8.9	8.39	
07/04/2022	02:03:27	3572	8.9	8.40	
07/04/2022	02:04:47	3563	8.9	8.40	
07/04/2022	02:06:07	3591	8.9	8.39	
07/04/2022	02:07:27	3597	8.9	8.40	
07/04/2022	02:08:47	3612	8.9	8.40	
07/04/2022	02:10:07	2610	3.3	8.40	
07/04/2022	02:11:27	2522	3.3	8.39	

Well	Field	Job Start	Customer	Job Number
TOMMY MINCH OHI 210H	TWILIGHT	Jul/03/2022	SWN PRODUCTION	EOHA-00026

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
07/04/2022	02:13:58	2946	0.0	8.40	Bump Top Plug
07/04/2022	02:14:07	3020	0.0	8.40	
07/04/2022	02:15:27	2963	0.0	8.40	
07/04/2022	02:16:47	2990	0.0	8.40	
07/04/2022	02:18:07	2996	0.0	8.40	
07/04/2022	02:19:27	3	0.0	8.40	
07/04/2022	02:20:07	-1	0.0	8.40	FLOATS HELD 5 BBL BACK
07/04/2022	02:20:47	-2	0.0	8.40	
07/04/2022	02:22:07	-1	0.0	8.40	
07/04/2022	02:23:27	0	0.0	8.40	
07/04/2022	02:24:47	-0	0.0	8.40	
07/04/2022	02:26:07	0	0.0	8.40	
07/04/2022	02:27:27	2	0.0	8.40	
07/04/2022	02:28:47	1	0.0	8.40	
07/04/2022	02:30:07	3	0.0	8.40	
07/04/2022	02:31:27	8	0.0	8.40	
07/04/2022	02:32:47	7	0.0	8.40	
07/04/2022	02:34:07	49	3.4	8.40	
07/04/2022	02:34:58	16	2.4	8.40	WASH UP RIG
07/04/2022	02:35:27	71	4.4	8.40	
07/04/2022	02:36:47	96	5.4	8.39	
07/04/2022	02:38:07	6	0.0	8.40	
07/04/2022	02:39:27	53	3.5	8.40	
07/04/2022	02:40:47	147	6.6	8.40	
07/04/2022	02:42:07	151	6.6	8.40	
07/04/2022	02:43:27	5	0.0	8.40	
07/04/2022	02:44:47	5	0.0	8.40	
07/04/2022	02:46:07	-2	0.0	8.40	
07/04/2022	02:47:27	-3	0.0	8.40	
07/04/2022	02:48:47	-1	0.0	8.40	
07/04/2022	02:50:07	7	0.0	8.40	
07/04/2022	02:51:27	54	3.3	8.40	
07/04/2022	02:52:47	41	4.2	7.78	
07/04/2022	02:55:27	72	4.2	8.32	
07/04/2022	02:56:47	223	0.0	8.48	
07/04/2022	02:58:07	207	4.9	8.32	
07/04/2022	02:59:27	226	8.5	8.40	
07/04/2022	03:00:47	40	7.7	6.22	
07/04/2022	03:02:07	213	8.5	8.39	
07/04/2022	03:03:27	221	8.5	8.39	
07/04/2022	03:04:47	186	8.0	8.40	
07/04/2022	03:06:07	190	8.0	8.39	
07/04/2022	03:07:27	169	8.0	8.40	
07/04/2022	03:08:47	231	8.5	8.40	
07/04/2022	03:10:07	207	8.5	8.39	
07/04/2022	03:11:27	5	0.0	8.39	
07/04/2022	03:12:47	2	0.0	8.40	
07/04/2022	03:14:07	-3	0.0	8.40	
07/04/2022	03:15:27	54	3.7	8.40	
07/04/2022	03:16:47	445	8.4	8.39	
07/04/2022	03:18:07	436	8.4	8.39	
07/04/2022	03:19:27	64	7.0	8.39	
07/04/2022	03:19:58	4	0.0	8.40	END JOB

Well	Field	Job Start	Customer	Job Number
TOMMY MINCH OHI 210H	TWILIGHT	Jul/03/2022	SWN PRODUCTION	EOHA-00026

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
6.9			8.5	858.0	0.0	121.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
7560	0	1388	3100			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume
%	822.0 bbl	439.8 bbl	75 degF	☐	bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
COMPANY MAN	ZACHARY BUCK	☐	☒
		-	-

WR-38
Rev. 5/08

API # 47-051-00312-00-00

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE IN TRIPLICATE, one copy mailed to the Department, one copy to be retained by the Well Operator and the third copy (and extra copies if required) should be mailed to each coal operator at their respective addresses.

Farm name: Harsh, Nora Operator Well No.: 4437

LOCATION: Elevation: 1125.7' Quadrangle: Majorsville, WV
District: Sand Hill County: Marshall
Latitude: 1377 Feet South of 39 Deg. 57 Min. 30 Sec.
Longitude: 9279 Feet West of 80 Deg. 30 Min. 00 Sec.

Well Type: OIL _____ GAS X

Company: Columbia Gas Transmission, LLC
1700 MacCorkle Avenue S.E., P.O. Box 1273
Charleston, WV 25325

Coal Operator or Owner: Murray Energy Corporation, American Consolidated Natural Resources, Inc.
46226 National Road
St. Clairsville, OH 43950

Coal Operator or Owner: _____

Agent: Brad Nelson, Storage Engineer

Permit Issued Date: 4/20/2022

AFFIDAVIT

STATE OF ~~WEST VIRGINIA~~ Pennsylvania,
County of Washington, ss:

Brad Nelson and Bo Hampson being first duly sworn according to law depose and say that they are experienced in the work of plugging and filling oil and gas wells and were employed by the above named well operator, and participated in the work of plugging and filling the above well say that said work was commenced on the 12th day of May, 2022, and the well was plugged and filled in the following manner:

TYPE	FROM	TO	PIPE REMOVED	LEFT
Class A Cement	0'	13'	N/A	20", 13-3/8", 10-3/4", 7"
Class A Cement	13'	19'	N/A	20", 13-3/8", 10-3/4", 7"
Class A Cement	19'	150'	N/A	13-3/8", 10-3/4", 7"
Class A Cement	150'	602'	N/A	10-3/4", 7"
Class A Cement	602'	713'	N/A	7"
Class A Cement	713'	1320'	N/A	7"
Class A Cement	1320'	1354'	N/A	N/A

Description of monument: 7" casing, 48" above ground level, API and well number affixed and that the work of plugging and filling said well was completed on the 19th day of May, 2022.

And further deponents saith not. Brad Nelson

Bo Hampson

Sworn and subscribe before me this 19th day of May, 2022

Commonwealth of Pennsylvania - Notary Seal
Emily Kale Leach, Notary Public
Washington County
My Commission Expires November 18, 2023
Commission Number 1359854

My commission expires: 11/18/2023

Emily Leach
Notary Public

Affidavit reviewed by the Office of Oil and Gas: _____ Title: _____

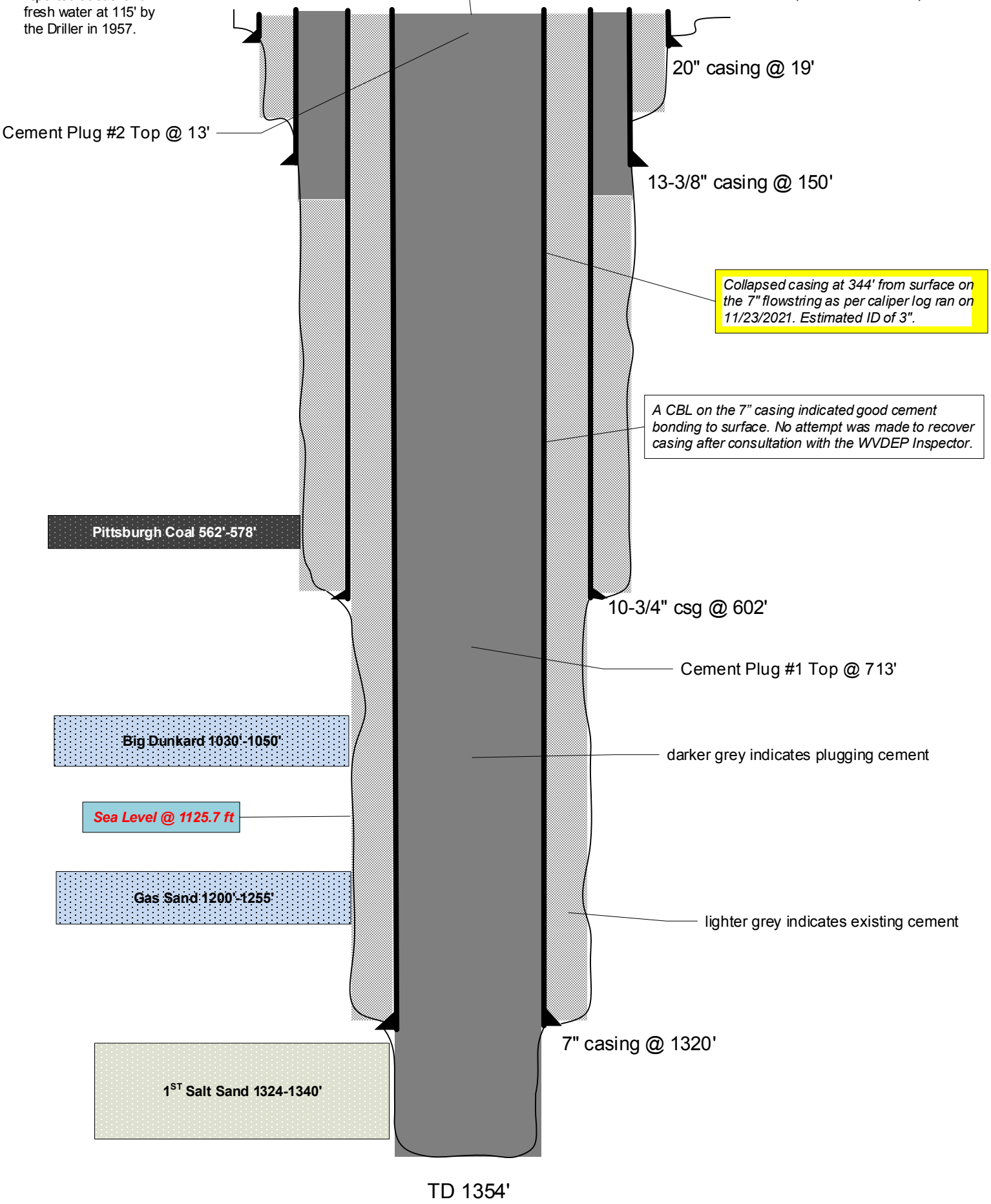
~ not to scale ~

*A show of gas was reported at 563' and fresh water at 115' by the Driller in 1957.

Majorsville Shallow 4437

Post P&A

(as of 5/19/2022)



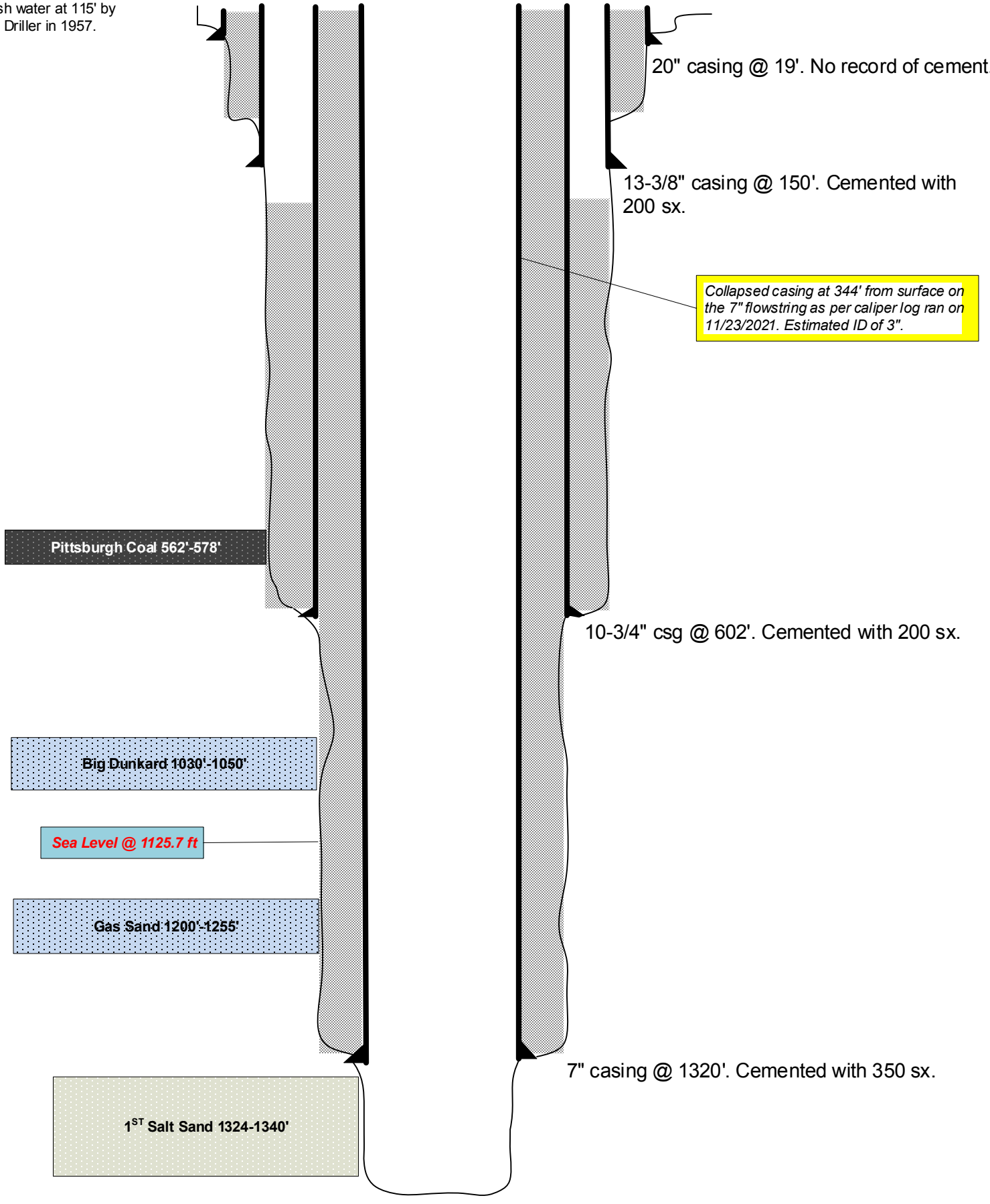
~ not to scale ~

Majorsville Shallow 4437

Prior to P&A

(as of 4/20/2022)

*A show of gas was reported at 563' and fresh water at 115' by the Driller in 1957.



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Wednesday, April 20, 2022

WELL WORK PLUGGING PERMIT
Vertical Plugging

COLUMBIA GAS TRANSMISSION, LLC
STORAGE TECHNICAL SERVICES - 6TH FLOOR
1700 MACCORKLE AVE. SE.
CHARLESTON, WV 25314

Re: Permit approval for 4437
47-051-00312-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: 4437
Farm Name: HARSH, NORA
U.S. WELL NUMBER: 47-051-00312-00-00
Vertical Plugging
Date Issued: 4/20/2022

47-051-00312P

PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.

2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.

3. Well work activities shall not constitute a hazard to the safety of persons.

47-051-00312P

DD-11

STATE OF WEST VIRGINIA

DEPARTMENT OF MINES

OIL AND GAS DIVISION

INSPECTOR'S WELL REPORT

Permit No. Mar-312 — Oil or Gas Well: Drilling (KIND)

Company: Mfg-Light + Heat Co
Address: Pittsburgh, Pa.
Farm: Neha Hatch Tract
Well No. 4437
District: Sandhill — County: Marshall
Drilling commenced: Sept-12-57.
Drilling completed — Total depth
Date shot — Depth of shot
Initial open flow — /10ths Water in — Inch
Open flow after tubing — /10ths Merc. in — Inch
Volume — Cu. Ft.
Rock pressure — lbs. — hrs.
Oil — bbls. 1st 24 hrs.
Fresh water: 130 feet 5 1/2 Bailer feet
Salt water — feet — feet

CASING AND TUBING	USED IN DRILLING	LEFT IN WELL	PACKERS
Size			
20			Kind of Packer
16	11'		
13	150'		
10	597'		Size of
8¼			
6¼			Depth set
5 3/16			
3			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED 13" SIZE 150 No. FT 9-28-57 Date
" " 10" " 597 " 10-1-57

COAL WAS ENCOUNTERED AT 165 FEET 48 INCHES
460 FEET 24 INCHES 563 FEET 48 INCHES Pgh-Bar
FEET INCHES FEET INCHES

Drillers' Names: Earl Anderson + Ralph Snider

Remarks: 9/24-Hole filled with water to within 195' Chert. First drilling 13" hole to 150'; Rock Chert at 105 Water at 130'; Dry-13" hole Rimed to 18" and hole 150' 13" Cemented to top; 13" hole to 597' and hole 597': 10" Casing Cemented to top; Estimated 500,000,000,000,000,000,000,000,000 ft Gas in Pittsburgh Coal.

Oct-1-57
DATE

RECEIVED OCT 1957 WEST VIRGINIA DEPT. OF MINES

C. W. Burkhart
DISTRICT WELL INSPECTOR

47-051-00312 PGNM

OG-11

STATE OF WEST VIRGINIA

DEPARTMENT OF MINES

OIL AND GAS DIVISION

INSPECTOR'S WELL REPORT

Permit No. Mars-312

Oil or Gas Well Inj Well (KIND)

Company Inf. Light & Heat Co

Address Clarksburg, W. Va.

Farm Mary Hobbs Stuart

Well No. 4437

Dist. Meade Hill County Marshall

Drilling commenced Sept-12-57

Drilling completed ____ Total depth ____

Date shot ____ Depth of shot ____

Initial open flow ____ /10ths Water in ____ Inch

Open flow after tubing ____ /10ths Merc. in ____ Inch

Volume ____ Cu. Ft.

Rock pressure ____ lbs. ____ hrs.

Oil ____ bbls., 1st 24 hrs.

Fresh water 130 → 1½ Bailing feet Pitt Hole feet

Salt water ____ feet ____ feet

CASING AND TUBING	USED IN DRILLING	LEFT IN WELL	PACKERS
Size			
16			Kind of Packer
13	148		
10	598		Size of
8¼			
6¾	1320		Depth set
5 3/16			
3			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED all SIZE 7" No. FT. ____ Date

above casing cemented

COAL WAS ENCOUNTERED AT 245 FEET 48 INCHES Pgh

460 FEET 24 INCHES 563 FEET 48 INCHES

same Pgh in Pgh-coal

FEET INCHES FEET INCHES

Drillers' Names Ralph Snider & Earl E. Anderson

Remarks: Total depth — 1320'. Top salt sand

Waiting for Drilling Equip.

RECEIVED
OCT 1957
WEST VIRGINIA
DEPT. OF MINES

10-22-57
DATE

DISTRICT WELL INSPECTOR

47-051-00312 P

OG-11

STATE OF WEST VIRGINIA

DEPARTMENT OF MINES

OIL AND GAS DIVISION

INSPECTOR'S WELL REPORT

Permit No. Wetz-312

Oil or Gas Well (KIND) Gas Storage

Company Hope Natural Gas Co

Address Clarksburg, W. Va.

Farm Peter Jacob Heirs

Well No. 4437

District Franklin County Marshall

Drilling commenced Sept 12-57

Drilling completed Nov Total depth

Date shot — Depth of shot

Initial open flow — /10ths Water in — Inch

Open flow after tubing — /10ths Merc. in — Inch

Volume 2,000,000 Cu. Ft.

Rock pressure — lbs. — hrs.

Oil — bbls. 1st 24 hrs.

Fresh water — feet — feet

Salt water — feet — feet

CASING AND TUBING	USED IN DRILLING	LEFT IN WELL	PACKERS
Size			
16			Kind of Packer
13			
10			Size of
8¼			
6⅝			Depth set
5 3/16			
3			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED all SIZE No. FT. Date

Casing Cemented

COAL WAS ENCOUNTERED AT FEET INCHES

FEET INCHES FEET INCHES

FEET INCHES FEET INCHES

Drillers' Names No one at Well

Remarks: This Well completed four days ago, Had 2,000,000 Machine metered away. No information from Geo-Logue, driller at Well or anyone

NOV 1 '57

RECEIVED
WEST VIRGINIA
DEPT. OF MINES

Nov-20-57
DATE

O. L. Burkhart
DISTRICT WELL INSPECTOR

47-051-00312 P

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

Quadrangle Cameron

WELL RECORD

Permit No. MARS312 — Oil / Gas Well Gas

Company The Manufacturers Light and Heat Company
Address 800 Union Trust Building, Pgh. 19, Penna.
Farm Nora Harsh — Acres 300
Location (waters)
Well No. 4437 — Elev. 1121.09
District Sandhill — County Marshall
The surface of tract is owned in fee by
Address
Mineral rights are owned by
Address
Drilling commenced September 12, 1957
Drilling completed November 4, 1957
Date Shot — From — To
With
Open Flow — /10ths Water in — Inch
/10ths Merc. in — Inch
Volume — Cu. Ft.
Rock Pressure — lbs. — 72 hrs.
Oil — bbls., 1st 24 hrs.
Fresh water — feet — feet
Salt water — feet — feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16			Kind of Packer
13 "	148'5"	148'5"	
10 "	598'4"	598'4"	Size of
8¼" 7"	1320'5"	1320'5"	
6¼			Depth set
5 3/16			
4			Perf. top
3			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED — SIZE — No. Ft. — Date

COAL WAS ENCOUNTERED AT — FEET — INCHES
FEET — INCHES — FEET — INCHES
FEET — INCHES — FEET — INCHES

Formation	Color	Hard or Soft	Thickness	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
DrillersLog						Elevation - 1121.09' (Ground level)		
Clay			10	0	10	Depth Datum - Derrick floor - 2'		
Sand			30	10	40	abgve ground level.		
Slate - Shells			75	40	115			
Sand			15	115	130	Fresh water, 1-1/2 Bbls per Hr.		
Slate - Shells			40	130	170	13-3/8" (48#, H-40) Csg. Pt. -148'5"		
Lime			25	170	195	Cemented with 200 bags. 9-27-57		
Slate & Shells			70	195	265			
Waynesburg Coal			4	265	269			
Slate - Shells			26	269	295			
Lime			165	295	460			
Mapletown Coal			2	460	462			
Slate			16	462	478			
Lime			57	478	535			
Slate - Shells			28	535	563			
Pittsburgh Coal			4	563	567	Show of gas in the Pgh. Coal		
Slate			30	567	597	10-3/4" (32.75#, H-40) Csg. Pt. - 598'4"		
Lime			28	597	625	Cemented with 200 bags. 10/1/57		
Slate - Shell			35	625	660			
Sand			40	660	700			
Red Rock			10	700	710			
Lime			15	710	725			
Red Rock			15	725	740			
Slate - Shells			75	740	815			
Red - Red			20	815	835			
Lime Shells			25	835	860			
Red-Red			20	860	880			
Lime			40	880	920			
Lime			25	920	945			
Red Rock			10	945	955			
Lime - Shells			70	955	1025			
Big Dunkard Sand			15	1025	1040			
Lime			160	1040	1200			
Gas Sand			57	1200	1257			
Slate - Shells			58	1257	1315	7" (20#, J-55) Csg. Pt. -1320'5" Cemented		
1st Salt Sand				1315		With 350 bags. 10/17/57		
Total Depth				1354	1354			

(Over)

RECEIVED
DEC 1 '57
WEST VIRGINIA
DEPT. OF MINES

47-051-00312P

jwm

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
					Drilling in of pay zone		
					1330-1331	78,869 Cu. Ft. / day	
					1331-1334	195,199 Cu. Ft. / day	
					1334-1338	409,971 Cu. Ft. / day	
					1338-1343	475,046 Cu. Ft. / day	
					1343-1350	484,962 Cu. Ft. / day	
					1350-1353	2,208,848 Cu. Ft. / day	

WELL RECORD

Permit No. MRX-2415

Casing and Tubing	Used in Drilling	Left in Well	Packers and Shoes
Size			

Oil or Gas Well: Gas

Size of Casing: 10 3/4"

Kind of Packer:

Depth set: 1353'

Size of hole: 15"

Depth drilled: 1353'

Depth Drilled - Depth Tools - 15

Cable Tools: Rotary Tools: X

Drilling commenced: 11-15-57

Drilling completed: 12-1-57

Date shot: From: To:

Initial Production: Open Flow: Volume:

Rock Pressure: lbs. hrs.

Fresh water: feet feet

Salt water: feet feet

Coal was encountered at 1330 feet 1330-1334 feet

Coal was encountered at 1334 feet 1334-1338 feet

Coal was encountered at 1338 feet 1338-1343 feet

Coal was encountered at 1343 feet 1343-1350 feet

Coal was encountered at 1350 feet 1350-1353 feet

Inches

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
Clay			0	10			
Sand			10	40			
Slate & Shells			40	1330			
Coal			1330	1334	Gas	1330-1334	12-15-57
Slate & Shells			1334	1338			
Coal			1338	1343	Gas	1338-1343	12-15-57
Slate & Shells			1343	1350			
Coal			1350	1353	Gas	1350-1353	12-15-57
Slate & Shells			1353	TD			

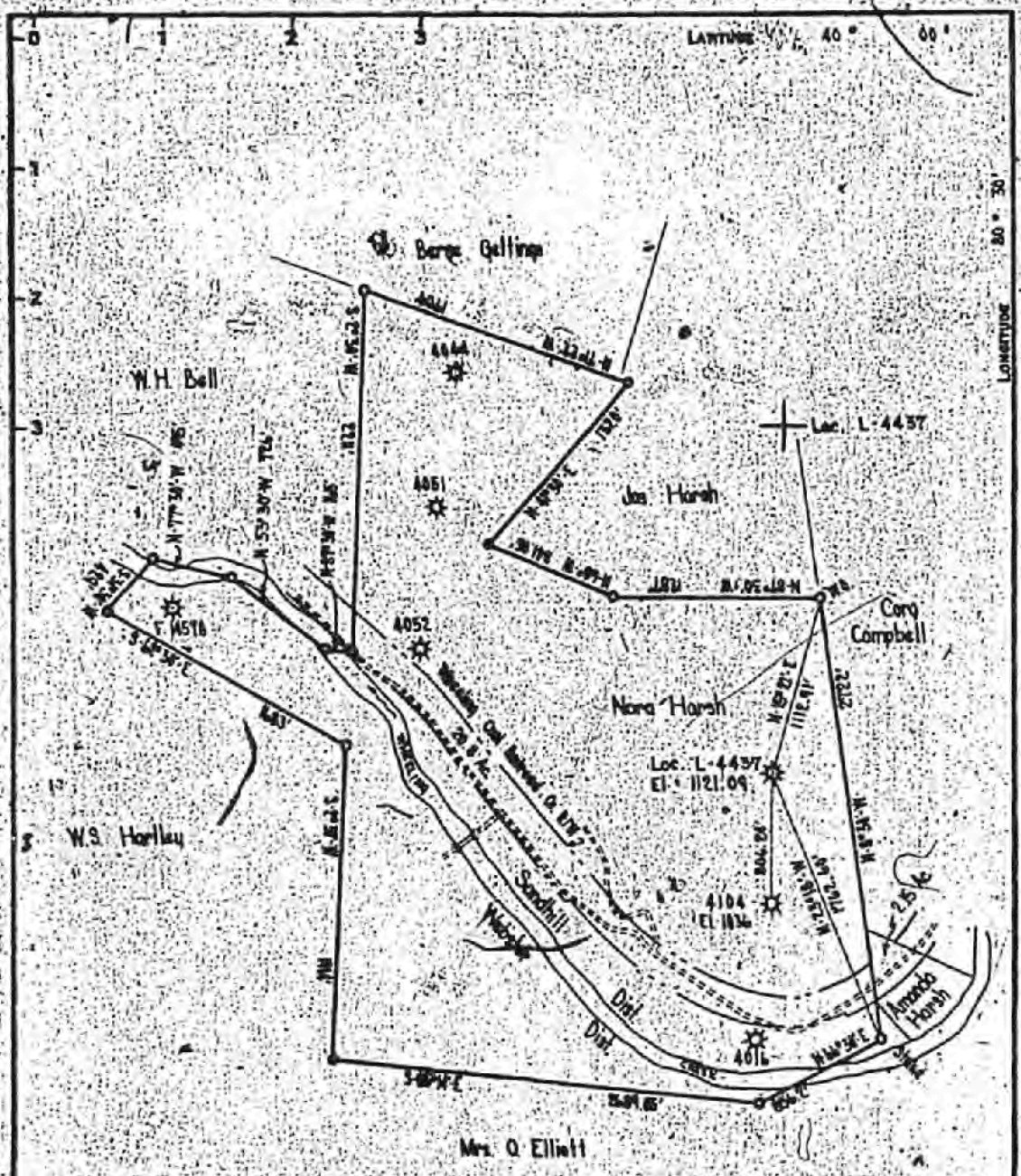
DEPARTMENT OF MINES
Oil and Gas Division

Date December 2, 1957

Give No. APPROVED THE MANUFACTURERS LIGHT AND HEAT CO. Owner

By Walter A. Flannery
Land Agent

47-051-00312 P
9 Mm



COAL OWNED BY Monongalia Improvement Co. et al. % C.H. Jones
Hillmon Coal Co., Grant Bldg., Pgh., Pa.

NEW LOCATION ☐
DRILL DEEPER ☐
ABANDONMENT ☐ STORAGE ☒

COMPANY The Manufacturers Light & Heat Company
ADDRESS 800 Union Trust Bldg., Pgh., Pa.
FARM Nora Harsh
TRACT ACRES 300 LEASE NO. 19436
WELL (FARM) NO. DRILL NO. 4437
ELEVATION (SPIRIT LEVEL) 1121.09
QUADRANGLE Cameron
COUNTY Marshall DISTRICT Sandhill
ENGINEER A.C. Streator
ENGINEER'S REGISTRATION NO. 9442
FILE NO. DRAWING NO. V-15-614
DATE 8-20-57 SCALE 1" = 800'

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION
CHARLESTON

WELL LOCATION MAP

FILE NO. MARS-312

+ DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS, SCALE 1 TO 62,500, LATITUDE AND LONGITUDE LINES BEING REPRESENTED BY BORDER LINES AS SHOWN.

— DENOTES ONE INCH SPACES ON BORDER LINE OF ORIGINAL TRACING.

1500 2-54 ACME

NO. L-4437

LOCATION FOR WELL

FIELD DISTRICT Washington COMPANY The M.L.& H.

LEASE NO. 19436 FOR 300 ACRES ON FARM OF

Nora Harsh

ACCTG. DIST. NO. Sandhill TOWN DIST. TWP. Marshall CO. W.Va.

COMPLETED Oct 31 19 57 LOCATED BY FLD. BK. 8-19 19 57 A.C.Streator

OIL ☐
GAS ☐ PRODUCING SAND Exit Salt
DRY HOLE ☐

TOTAL DEPTH 1354

STORAGE FIELD Majorsville

ROCK PRESS. 565

ON MAP O-25-10 Y-15-616

OPEN FLOW 2,208,848 cu ft.

ON PIPE LINE NO. 9718

ENTERED ON TRACINGS 19 BY

47051003120

WW-4A
Revised 6-07

1) Date: 3/1/2022
2) Operator's Well Number
Majorsville Shallow 4437

3) API Well No.: 47 - 051 - 003120000

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE 0F APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:
(a) Name: Consolidation Coal Company
Address: 46226 National Road
St. Clairsville, OH 43950
(b) Name: Murray Energy c/o Land Department
Address: 46226 National Road
St. Clairsville, OH 43950
(c) Name:
Address:

6) Inspector: Gayne J. Knitowski
Address: P.O. Box 108
Gormania, WV 26720
Telephone: 304-546-8171

5) (a) Coal Operator
Name: American Consolidated Natural Resources, Inc.
Address: 46226 National Road
St. Clairsville, OH 43950
(b) Coal Owner(s) with Declaration
Name: American Consolidated Natural Resources, Inc.
Address: 46226 National Road
St. Clairsville, OH 43950
Name:
Address:
(c) Coal Lessee with Declaration
Name: N/A
Address:

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

(1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
(2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator: Columbia Gas Transmission, LLC
By: Brad Nelson
Its: Storage Engineer
Address: 455 Racetrack Road
Washington, PA 15301
Telephone: 724-250-0610

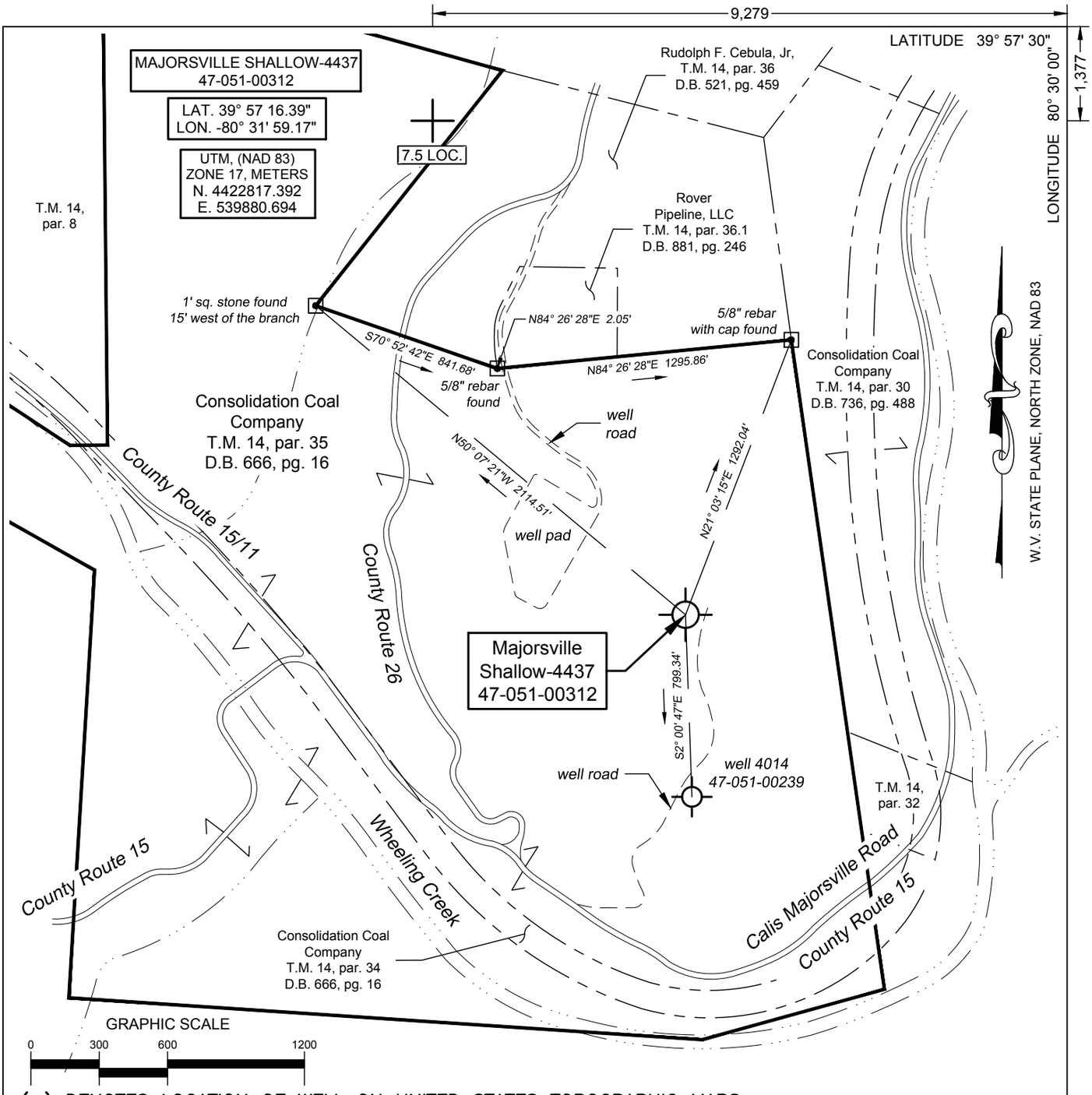
Commonwealth of Pennsylvania - Notary Seal
Elaine Rybski, Notary Public
Allegheny County
My commission expires May 11, 2022
Commission number 1332803
Member, Pennsylvania Association of Notaries

Commonwealth of Pennsylvania
County of Allegheny

Subscribed and sworn before me this 1 day of March 2022
Elaine Rybski Notary Public
My Commission Expires 5/11/2022

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at deprivacyoffier@wv.gov.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE No. 2001-2345-001-015
DRAWING No. MAJORSVILLE 4437
SCALE 1INCH = 600 FEET
MINIMUM DEGREE OF ACCURACY 1:200
PROVEN SOURCE OF ELEVATION TRIMBLE R10 GPS UNIT

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

(SIGNED) _____
ROBERT F. THAW PS #965

ROBERT F. THAW LICENSED No. 965 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
NITRO, WV

DATE MARCH 2 2022
OPERATOR'S WELL No. 4437
API WELL No. 47 051 – 00312
STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION ___ STORAGE X DEEP ___ SHALLOW X

LOCATION: ELEVATION 1125.7' WATER SHED WHEELING CREEK
DISTRICT SAND HILL COUNTY MARSHALL
QUADRANGLE MAJORSVILLE, WV

SURFACE OWNER CONSOLIDATION COAL COMPANY ACREAGE 248.393
OIL & GAS ROYALTY OWNER CONSOLIDATION COAL COMPANY
LEASE ACREAGE 300 LEASE NO. 3019436-000

PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE ___
STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___
OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
PLUG AND ABANDON X CLEAN OUT AND REPLUG ___

TARGET FORMATION SALT SAND ESTIMATED DEPTH 1348
WELL OPERATOR COLUMBIA GAS TRANSMISSION, LLC
ADDRESS PO BOX 1273, CHARLESTON, WV 25325-1273
DESIGNATED AGENT BRAD NELSON
ADDRESS 455 RACETRACK ROAD WASHINGTON, PA 15301

P:\2021\2101-2345-001-015 – TC ENERGY – MARJORSVILLE – 4437\50-SURVEY\DWG\MAJORSVILLE-4437-WELL PLAT.DWG

WW-4B
Rev. 2/01

1) Date March 1, 2022
2) Operator's
Well No. Majorsville Shallow 4437
3) API Well No. 47- 051 - 00312-00-00

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil _____/ Gas X____/ Liquid injection _____/ Waste disposal _____/
(If "Gas, Production ____ or Underground storage X___) Deep ____/ Shallow X___

5) Location: Elevation 1125.7' Watershed Wheeling Creek
District Sand Hill County Marshall Quadrangle Majorsville, WV

6) Well Operator Columbia Gas Transmission, LLC
Address 1700 MacCorkle Avenue S.E., P.O. Box 1273
Charleston, WV 25325

7) Designated Agent Brad Nelson, Storage Engineer
Address 455 Racetrack Road
Washington, PA 15301

8) Oil and Gas Inspector to be notified
Name Gayne J. Knitowski
Address P.O. Box 108
Gormania, WV 26720

9) Plugging Contractor
Name Contractor Services, Inc. of West Virginia (ConServ)
Address 929 Charleston Road
Spencer, WV 25276

10) Work Order: The work order for the manner of plugging this well is as follows:

Refer to enclosed:

1) Well job plan.

2) Prior to P&A wellbore schematic.

3) Proposed P&A wellbore schematic.

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.03.09 07:42:26 -05'00' Date 3-9-2022

Objective:	Plug and Abandon				**LAST PROFILE UPDATE:**	
TITLE:	Plug and Abandon				**WORK TYPE:**	Break-fix
FIELD:	Majorsville Shallow	**WELL:**	4437			
STATE:	WV	**SHL (Lat/Long):**	39.954271	-80.533229	**API:**	47-051-00312-00-00
DIST/TWP:	Sandhill	**BHL (Lat/Long):**	39.954271	-80.533229	**CNTY:**	Marshall

JOB PLAN

Note: A restriction estimated to be 3" in diameter was identified at ~344' from surface on 11/23/21 within the 7" flowstring.

1. Obtain NRP clearances, TOPs, pipeline crossing eval, etc.
2. Prepare access road and well site. Install ECD's per EM&CP.
3. Service all wellhead valves.
4. Document initial tubing / casing / annular pressures.
5. Top off the wellbore with kill weight fluid. If successful, remove restricted 4" valve and jump on a full bore 7" access valve.
6. Remove concrete pad and dress all casings for well control.
7. MIRU service rig.
8. NU 7-1/16" 2000 # BOPs (double ram with blind & pipe + annular).
9. Pressure test low/high to 250/1600 psig using packer set <30 ft. Pressure test TIW/stabbing valves.
10. MIRU Baker Atlas. Run CBL from TD to surface. Use 1-11/16" or 2-3/4" OD tools.
    Note: Restricted ID of 3 inches at 344' from surface.
11. RDMO Baker Atlas.
12. TIH with work string and clean to TD at ~1354'.
13. Circulate two bottoms up to clean hole.
14. TOOH.
15. TIH with work string and install balanced cement plug(s) from TD to 700'. WOC 10 hrs and tag.
16. ND BOPs.
17. NU drilling spool and 13" annular.
18. Free-pt and cut/pull all 7", 10-3/4", and 13-3/8" csg that is free.
19. TIH with work string and spot balanced cement plug(s) from top of last plug to surface.
20. RDMO service rig.
21. Top off all annuli with cement.
22. Install 7" csg monument 30" above GL, tack weld cap, and affix API number.
23. Reclaim road and location.

Type text here

Gayne Knitowski

Digitally signed by Gayne Knitowski
Date: 2022.03.09 07:42:03 -05'00'

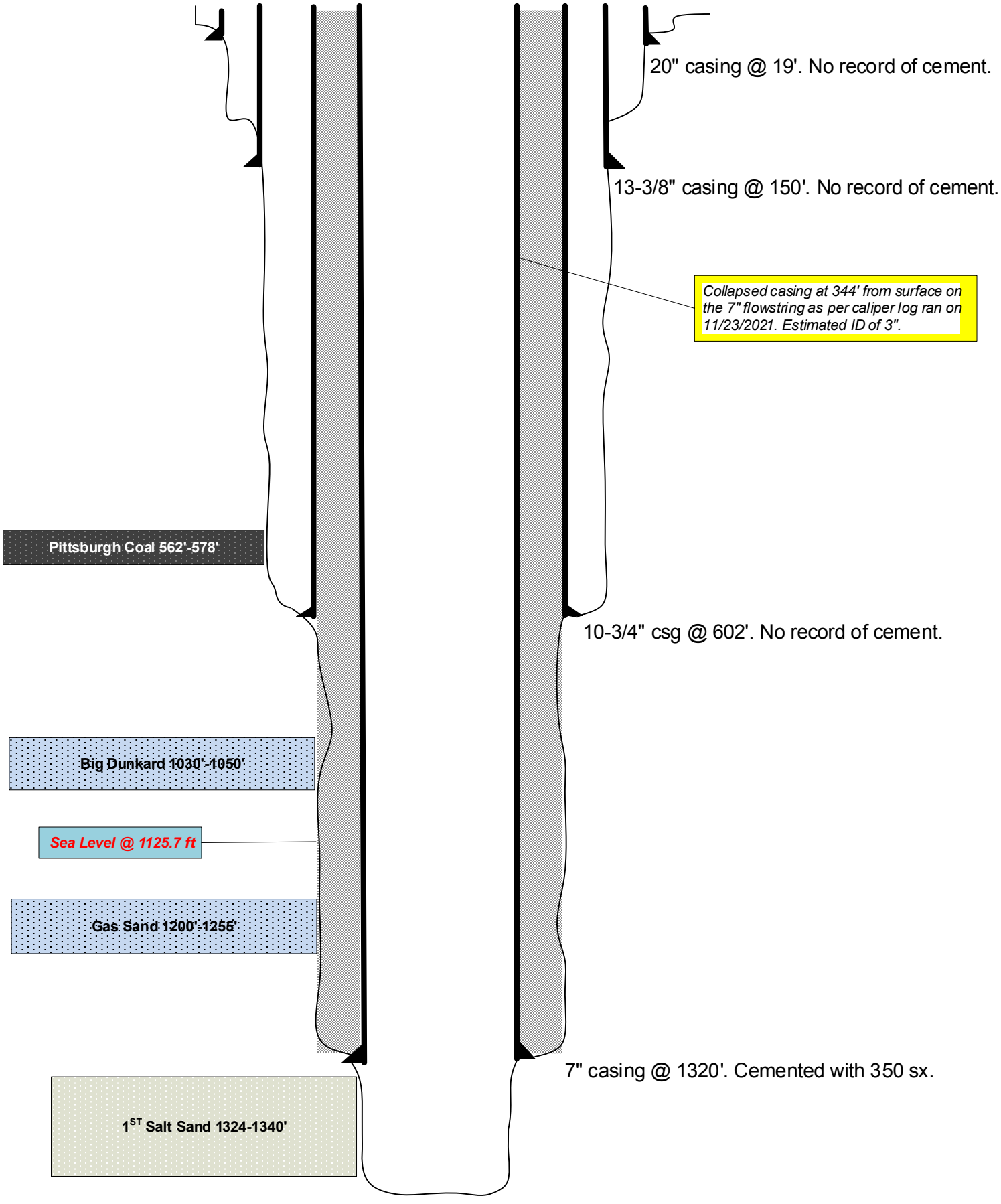
PREPARED BY:	Brad Nelson	**REVIEWED BY:**	**APPROVED:**
PREP DATE:	1/6/2022		

~ not to scale ~

Majorsville Shallow 4437

Prior to P&A

(as of 1/19/2022)

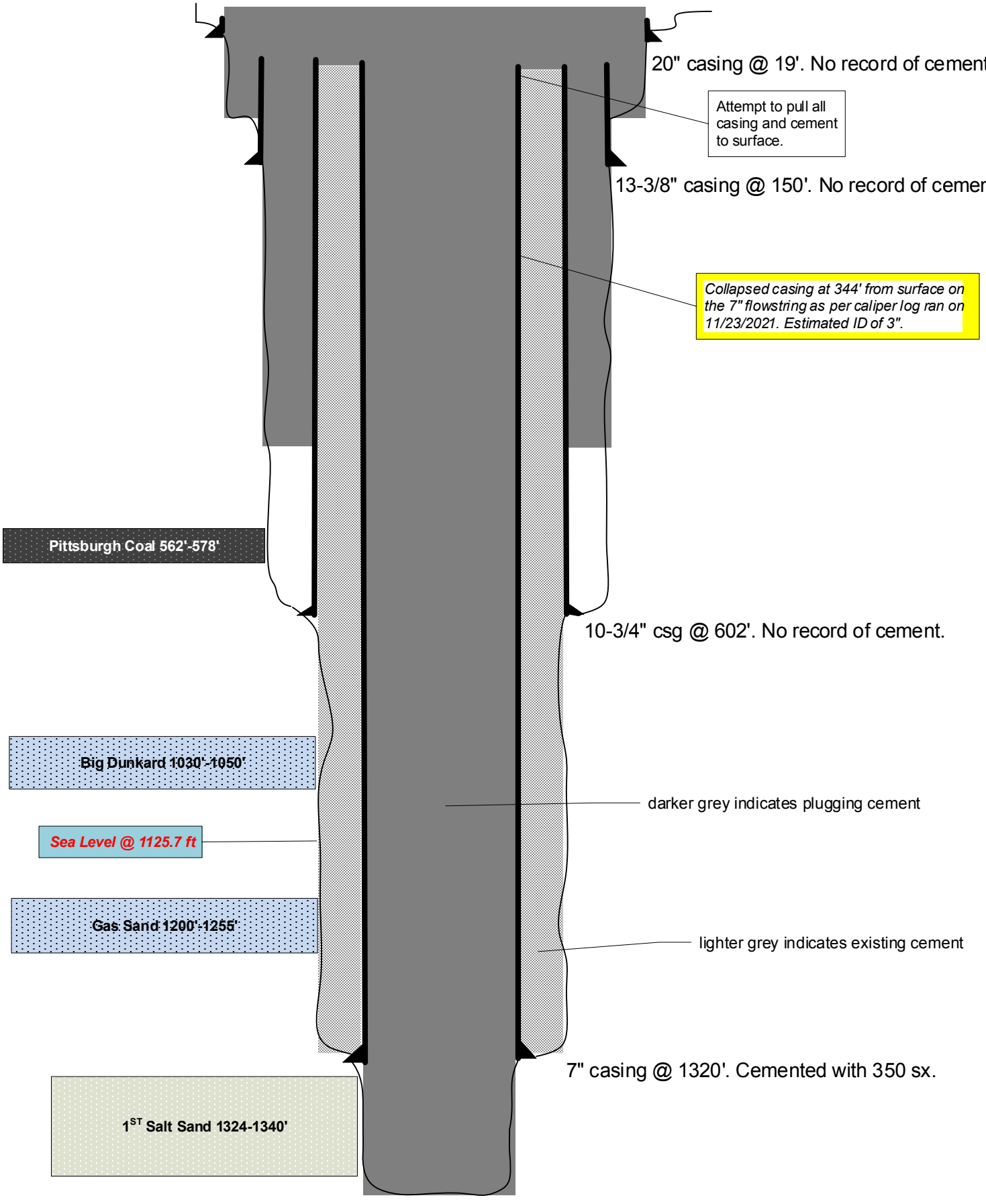


~ not to scale ~

Majorsville Shallow 4437

Proposed P&A

(as of 1/19/2022)



1500 2-54 ACME

NO. L-4437

LOCATION FOR WELL

FIELD DISTRICT Washington COMPANY The M.L.& H.

LEASE NO. 19436 FOR 300 ACRES ON FARM OF

Nora Harsh

ACCTG. DIST. NO. Sandhill TOWN DIST. TWP. Marshall CO. W.Va.

COMPLETED Oct 31 19 57 LOCATED BY FLD. BK. 8-19 19 57 A.C.Streator

OIL ☐
GAS ☐
DRY HOLE ☐

PRODUCING SAND East Salt TOTAL DEPTH 1354

STORAGE FIELD Mayesville ROCK PRESS. 568

ON MAP O-25-10 X-15-616 OPEN FLOW 2,208,848 cu ft.

ON PIPE LINE NO. 9718

ENTERED ON TRACINGS 19 BY

WW-9
(5/16)

API Number 47 - 051 - 00312-00-00
Operator's Well No. _____

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Columbia Gas Transmission, LLC OP Code 307032

Watershed (HUC 10) Wheeling Creek Quadrangle Majorsville, WV

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ☐ No ☑

Will a pit be used? Yes ☑ No ☐

If so, please describe anticipated pit waste: Fresh water, cement returns, bentonite gel, NaCl salt

Will a synthetic liner be used in the pit? Yes ☑ No ☐ If so, what ml.? 20

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application (if selected provide a completed form WW-9-GPP)
■ Underground Injection (UIC Permit Number 34-119-28776, 34-167-23862)
_____ Reuse (at API Number _____)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
■ Other (Explain Appalachian Water Services, Station W1 Ronco WTP, Masontown, PA - Permit 2608201

Will closed loop systembe used? If so, describe: No

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. N/A

-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used in drilling medium? _____

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. N/A

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) Subsoils

-Landfill or offsite name/permit number? _____

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature Brad Nelson

Company Official (Typed Name) Brad Nelson

Company Official Title Storage Engineer

Commonwealth of Pennsylvania - Notary Seal
Elaine Rybski, Notary Public
Allegheny County
My commission expires May 11, 2022
Commission number 1332803
Member, Pennsylvania Association of Notaries

Subscribed and sworn before me this 1 day of March, 2022

Elaine Rybski Notary Public

My commission expires 5/11/2022

Commonwealth of Pennsylvania
County of Allegheny

Form WW-9

Operator's Well No._____

Proposed Revegetation Treatment: Acres Disturbed <1.0 Prevegetation pH 6.5

Lime 2 Tons/acre or to correct to pH 7

Fertilizer type 10-10-10

Fertilizer amount 600 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Rye	40	Orchard Grass and/or Tall Fescue	29
		Birdsfoot trefoil (empire)	9
		Annual Rye	12

For wetland areas: Annual Rye (40 lbs/acre) until indigenous plants re-establish cover.

Attach:
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.03.09 07:41:35 -05'00'

Comments:

Reclaim site ASAP

Title: Inspector Date: 3-9-2022

Field Reviewed? (X) Yes ( ) No

WW-9- GPP
Rev. 5/16

Page _____ of _____
API Number 47 - 051 - 00312-00-00
Operator's Well No._____

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
GROUNDWATER PROTECTION PLAN

Operator Name: Columbia Gas Transmission, LLC

Watershed (HUC 10): Wheeling Creek Quad: Majorsville, WV

Farm Name:_____

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

No fertilizer will be stored on site. Small quantities of fuel, oil, and lubricants will be stored on site, but located within secondary containment.

Accidental release from well fluids and spills from construction equipment are the only sources of contaminate to groundwater.

All accumulated fluids to be hauled off site to UIC disposal facility.

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

All construction equipment will be inspected daily for leaks. Spill kits will be on site.

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

The closest water body is Wheeling Creek, approximately 0.22 miles to the E.
The nearest Wellhead Protection area is 3.3 mi. to the NW - (PWSID WV3302617 ISKCON - NEW VRINDABAN).

4. Summarize all activities at your facility that are already regulated for groundwater protection.

N/A

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

N/A

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

No waste material will be used for deicing or fill material on the property.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

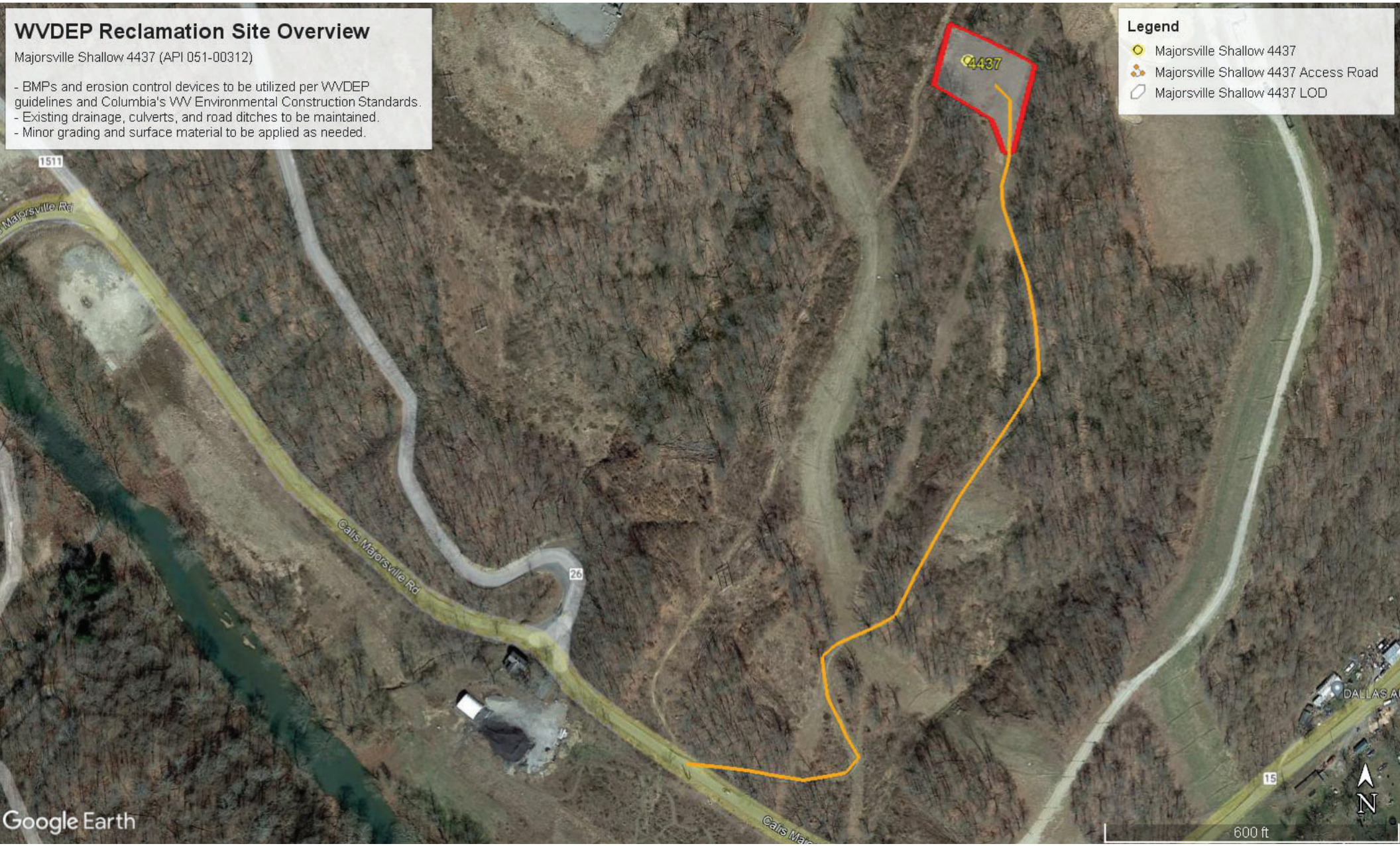
During routine tailgate meetings groundwater protection will be a topic of discussion.

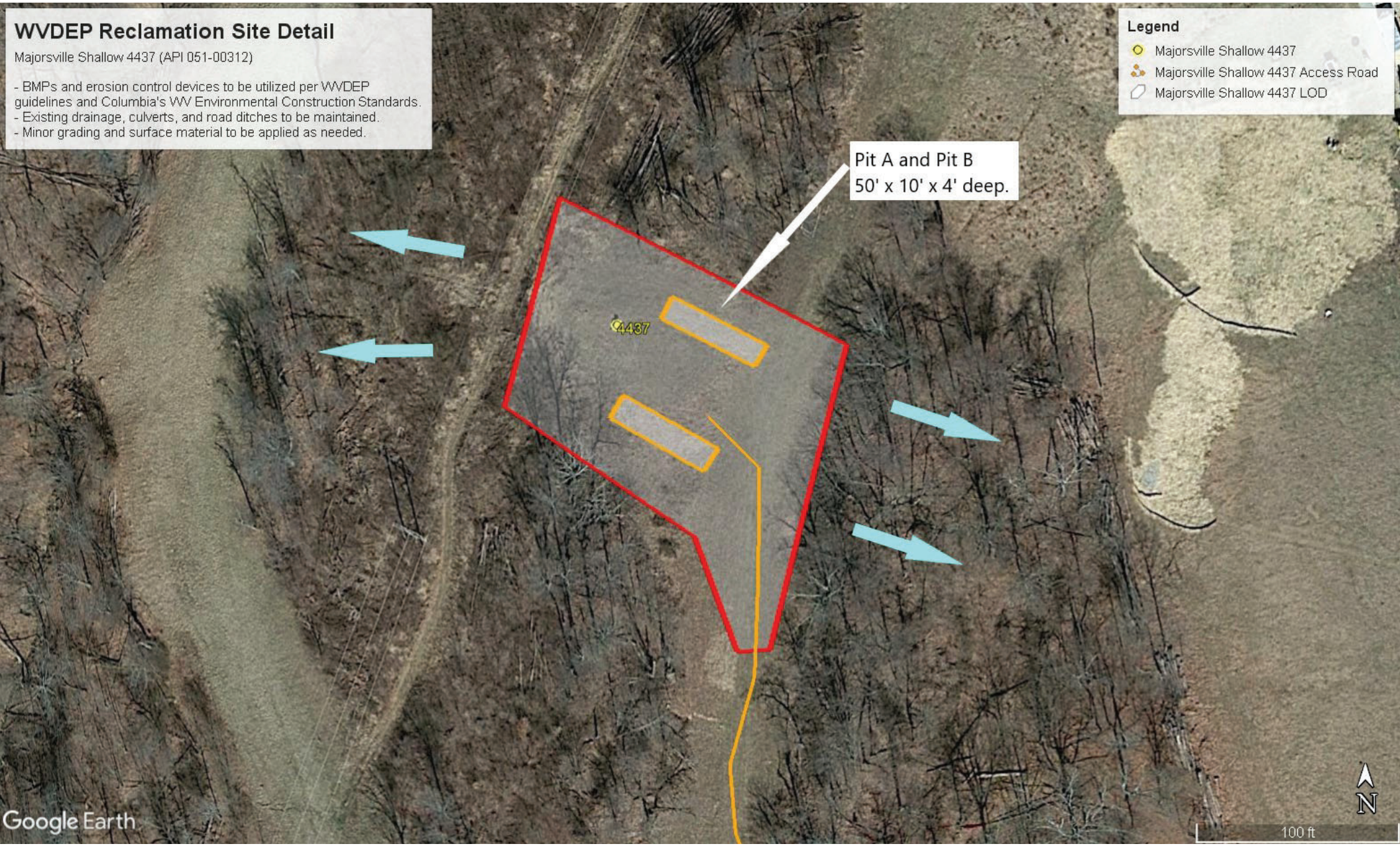
8. Provide provisions and frequency for inspections of all GPP elements and equipment.

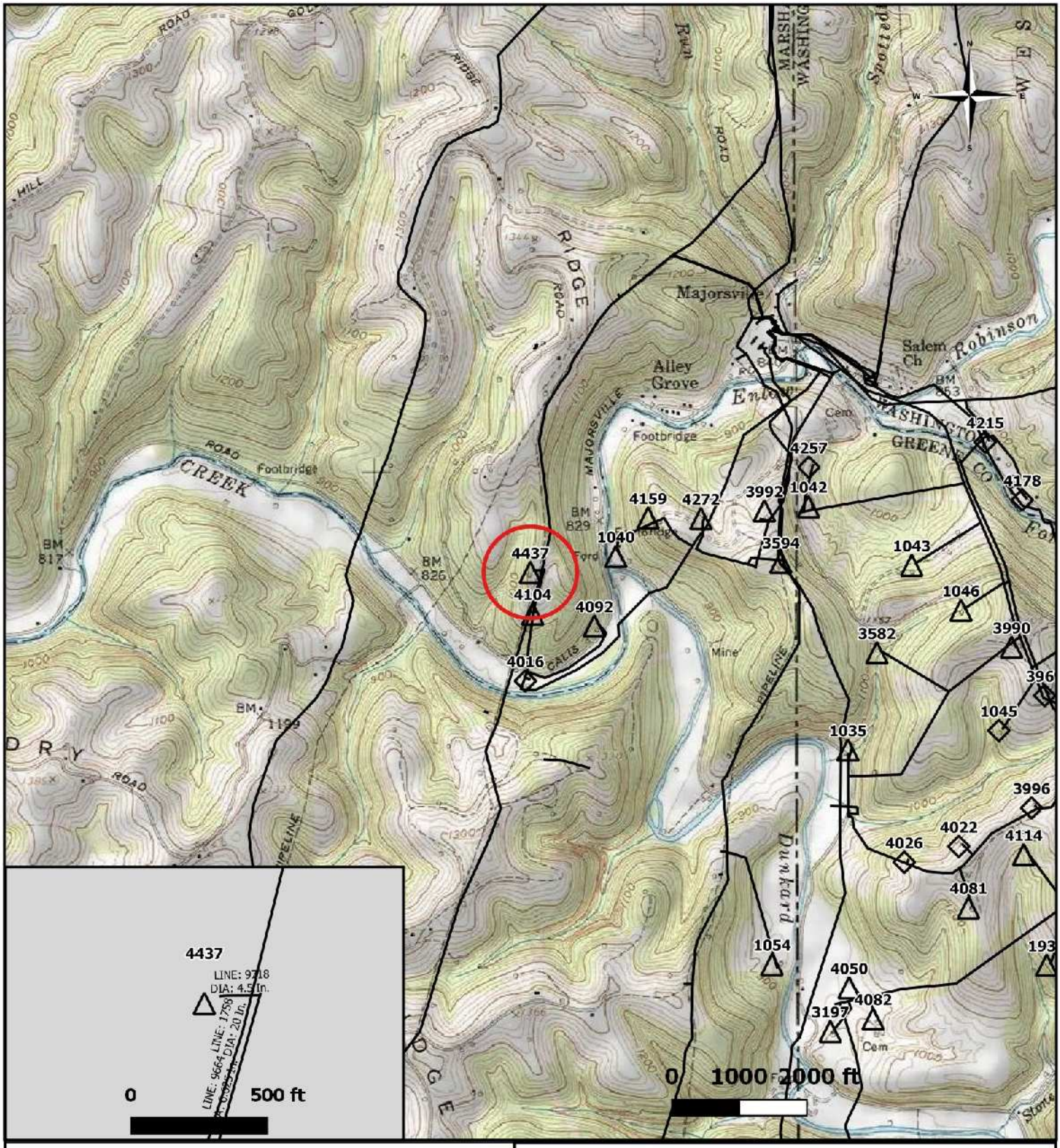
No fertilizer will be stored on site. Small quantities of fuel, oil, and lubrications will be stored on site, but located within secondary containment. Construction equipment will be inspected daily for leaks or spill.

Signature: _____

Date: _____


WVDEP Reclamation Site Overview
Majorsville Shallow 4437 (API 051-00312)
- BMPs and erosion control devices to be utilized per WVDEP guidelines and Columbia's WV Environmental Construction Standards.
- Existing drainage, culverts, and road ditches to be maintained.
- Minor grading and surface material to be applied as needed.
Legend
Majorsville Shallow 4437
Majorsville Shallow 4437 Access Road
Majorsville Shallow 4437 LOD
4437
1511
Majorsville Rd
Calis Majorsville Rd
26
15
N
600 ft
Google Earth


WVDEP Reclamation Site Detail
Majorsville Shallow 4437 (API 051-00312)
- BMPs and erosion control devices to be utilized per WVDEP guidelines and Columbia's WV Environmental Construction Standards.
- Existing drainage, culverts, and road ditches to be maintained.
- Minor grading and surface material to be applied as needed.
Legend
Majorsville Shallow 4437
Majorsville Shallow 4437 Access Road
Majorsville Shallow 4437 LOD
Pit A and Pit B
50' x 10' x 4' deep.
4437
Google Earth
N
100 ft



Legend

Storage Well Classification

- Active
- Observation
- Special
- Well of Interest
- CPG Pipelines

TransCanada
In business to deliver

Majorsville Shallow Storage Field
Storage Well 4437
Marshall County, West Virginia

USGS Topographic Map (Scaled 2000 Ft/ In) to be included with PROJECT ENVIRONMENTAL INFORMATION FORM (PEIF).

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. Betty Schafer MSH 1H
Well Pad Name: Betty Schafer MSH Pad

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	051-Marshal	Sand Hill	Moundsville
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Betty Schafer MSH 1H Well Pad Name: Betty Schafer MSH Pad

3) Farm Name/Surface Owner: Roy A. Schafer & Edward J. Schafer Public Road Access: Big Wheeling Creek

4) Elevation, current ground: 848.3' Elevation, proposed post-construction: 848.3'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

6) Existing Pad: Yes or No Yes

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.01.06 14:56:48 -05'00'

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Up-Dip well to the North, Target Top TVD- 5978', Target Base TVD- 6020', Anticipated Thickness- 42', Associated Pressure- 3913'

8) Proposed Total Vertical Depth: 6003'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 23295'

11) Proposed Horizontal Leg Length: 16117.53'

12) Approximate Fresh Water Strata Depths: 281'

13) Method to Determine Fresh Water Depths: Salinity calculations from Betty Schafer MSH 210H (API 47-051-01777)

14) Approximate Saltwater Depths: 803' Salinity Profile

15) Approximate Coal Seam Depths: 353'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes x No _____

(a) If Yes, provide Mine Info: Name: Ohio County Mine
Depth: 353'
Seam: Pittsburgh
Owner: American Consolidated Natural Resources

API NO. 47- 051 -
OPERATOR WELL NO. Betty Schafer MSH 1H
Well Pad Name: Betty Schafer MSH Pad

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94#	126'	126'	CTS
Fresh Water	13 3/8"	New	J-55	54.4#	375'	375'	375 sx/CTS
Coal	See	Surface	Casing				
Intermediate	9 5/8"	New	J-55	36#	1710'	1710'	787 sx/CTS
Production	5 1/2"	New	P-110 HP	20#	23295'	23295'	Tail 1418sx/ 100' Inside Intermediate
Tubing							
Liners							

Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.01.06 14:57:07 -05'00'

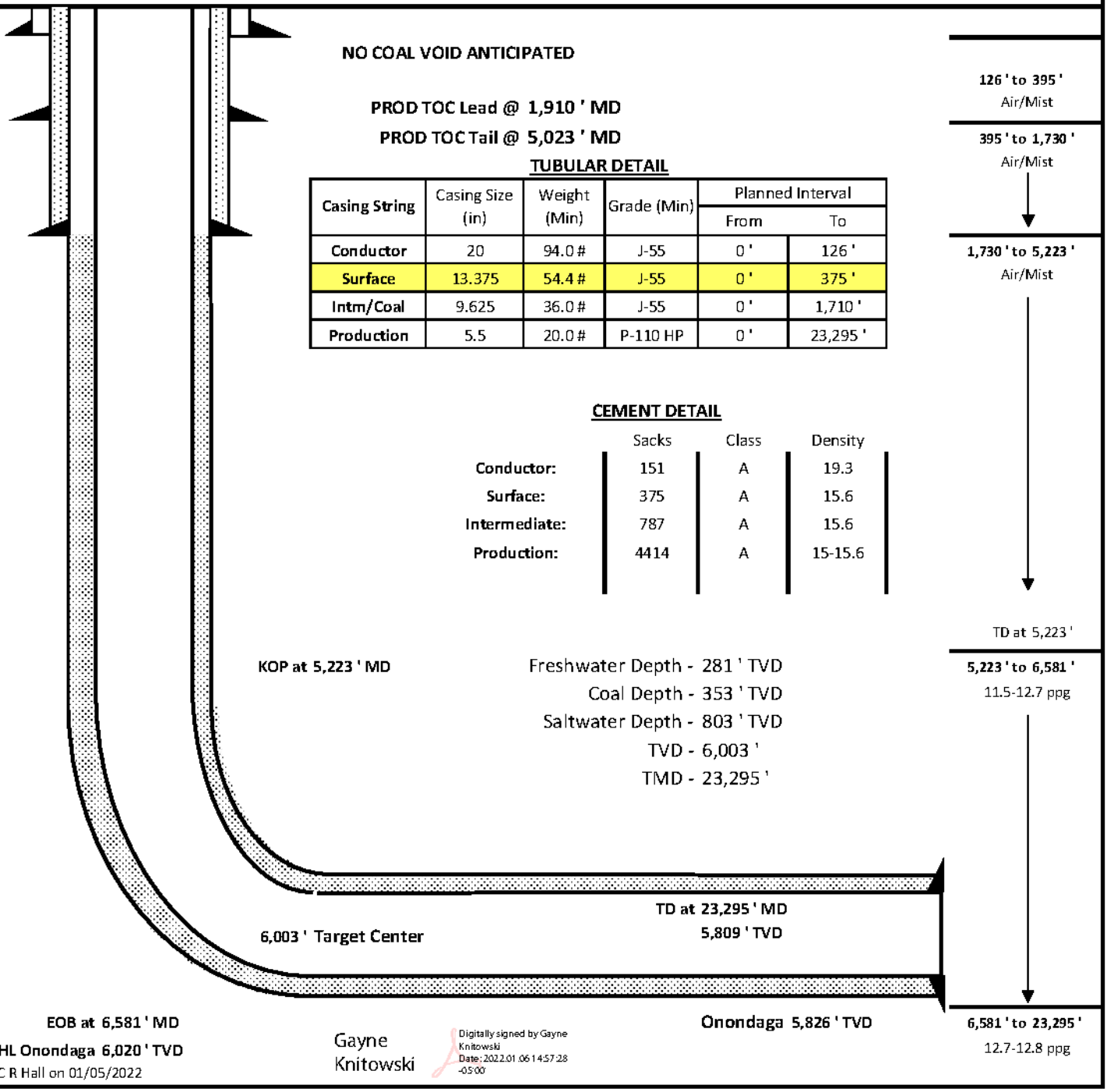
TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.20/30% Excess
Fresh Water	13 3/8"	17.5"	0.380	2730	633	Class A	1.20/30% Excess
Coal	See	Surface	Casing				
Intermediate	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/40% Excess
Production	5 1/2"	8 3/4"-8 1/2"	0.361	14360	10500	Class A	1.19/5% Excess
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

Southwestern Energy Company | Proposed Drilling Program

Well:	BETTY SCHAFER MSH 1	**Re-entry Rig:**	TBD
Field:	PANHANDLE FIELD WET	**Prospect:**	Marcellus Shale
County:	MARSHALL	**State:**	WV
SHL:	39.9909 Latitude	-80.6358 Longitude	
BHL:	40.0299 Latitude	-80.6650 Longitude	
KB Elev:	874 ft MSL	KB: 26 ft AGL	**GL Elev:** 848 ft MSL



TUBULAR DETAIL

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval From	Planned Interval To
Conductor	20	94.0 #	J-55	0 '	126 '
Surface	13.375	54.4 #	J-55	0 '	375 '
Intm/Coal	9.625	36.0 #	J-55	0 '	1,710 '
Production	5.5	20.0 #	P-110 HP	0 '	23,295 '

CEMENT DETAIL

	Sacks	Class	Density
Conductor:	151	A	19.3
Surface:	375	A	15.6
Intermediate:	787	A	15.6
Production:	4414	A	15-15.6

Gayne Knitowski

Digitally signed by Gayne Knitowski
Date: 2022.01.06 14:57:28 -05'00'

Created by: C R Hall on 01/05/2022

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. Betty Schafer MSH 3H
Well Pad Name: Betty Schafer MSH Pad

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: SWN Production Co., LLC | 494512924 (Operator ID) | 051-Marshal (County) | Sand Hill (District) | Moundsville (Quadrangle)

2) Operator's Well Number: Betty Schafer MSH 3H Well Pad Name: Betty Schafer MSH Pad

3) Farm Name/Surface Owner: Roy A. Schafer & Edward J. Schafer Public Road Access: Big Wheeling Creek

4) Elevation, current ground: 848.4' Elevation, proposed post-construction: 848.4'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

6) Existing Pad: Yes or No Yes

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.01.06 14:58:05 -05'00'

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Up-Dip well to the North, Target Top TVD- 5969', Target Base TVD- 6021', Anticipated Thickness- 52', Associated Pressure- 3913'

8) Proposed Total Vertical Depth: 6005'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 22750'

11) Proposed Horizontal Leg Length: 11,494.34'

12) Approximate Fresh Water Strata Depths: 281'

13) Method to Determine Fresh Water Depths: Salinity calculations from Betty Schafer MSH 8H (API 47-051-02297)

14) Approximate Saltwater Depths: 803' Salinity Profile

15) Approximate Coal Seam Depths: 353'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes x No _____

(a) If Yes, provide Mine Info: Name: Ohio County Mine
Depth: 353'
Seam: Pittsburgh
Owner: American Consolidated Natural Resources

API NO. 47- 051 -
OPERATOR WELL NO. Betty Schafer MSH 3H
Well Pad Name: Betty Schafer MSH Pad

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94#	126'	126'	CTS
Fresh Water	13 3/8"	New	J-55	54.4#	375'	375'	376 sx/CTS
Coal	See	Interm	Casing				
Intermediate	9 5/8"	New	J-55	36#	1710'	1710'	754 sx/CTS
Production	5 1/2"	New	P-110 HP	20#	22750'	22750'	Tail 4328sx/ 100' inside Intermediate
Tubing							
Liners							

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.01.06 14:58:25 -05'00'

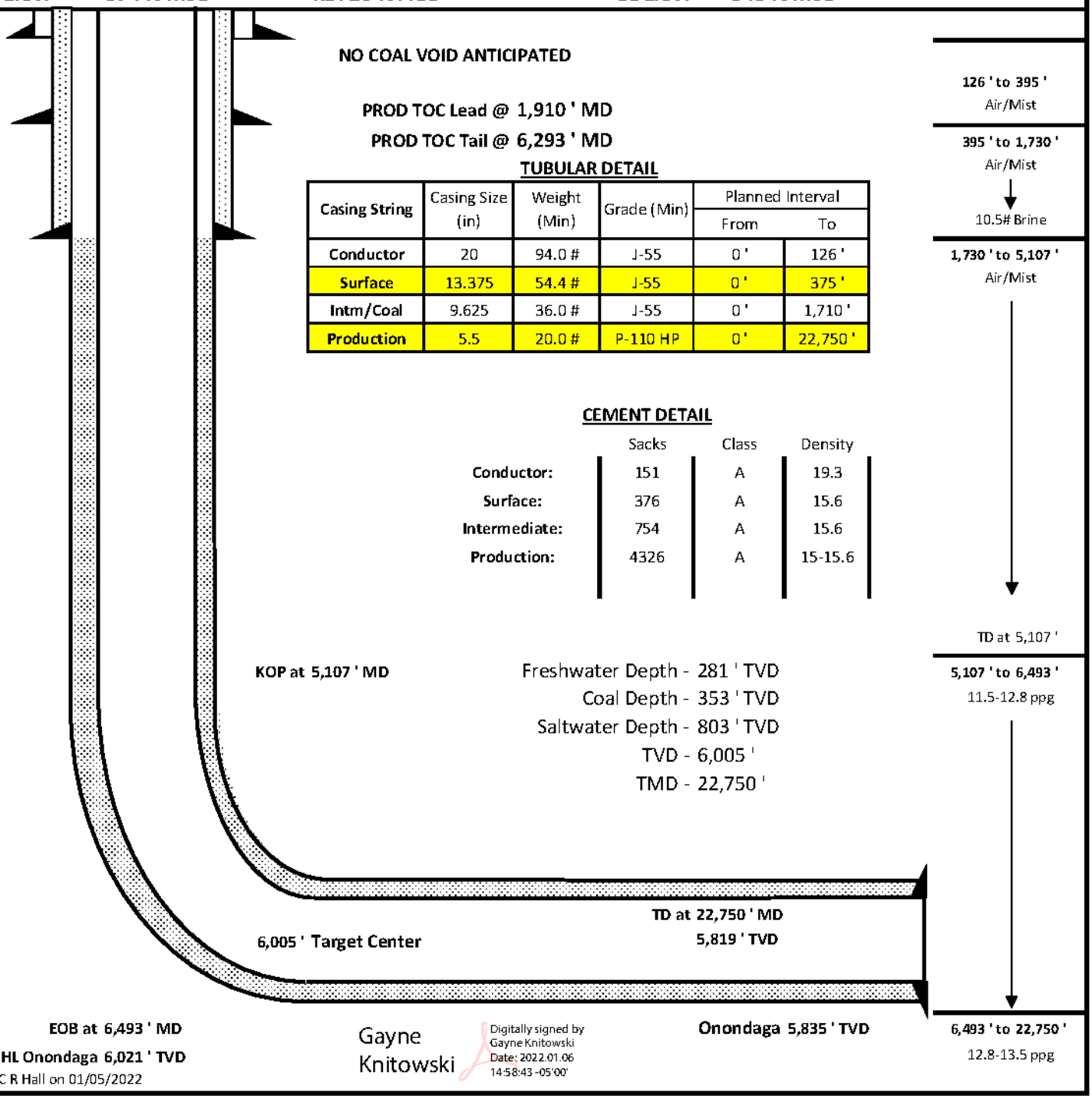
TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.20/30% Excess
Fresh Water	13 3/8"	17.5"	0.380	2730	633	Class A	1.20/30% Excess
Coal	See	Interm	Casing				
Intermediate	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/40% Excess
Production	5 1/2"	8 3/4"-8 1/2"	0.361	14360	10500	Class A	1.19/5% Excess
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

Southwestern Energy Company | Proposed Drilling Program

Well:	BETTY SCHAFER MSH 3	**Re-entry Rig:**	TBD
Field:	PANHANDLE FIELD W	**Prospect:**	Marcellus Shale
County:	MARSHALL	**State:**	WV
SHL:	39.9910 Latitude	-80.6355 Longitude	
BHL:	40.0316 Latitude	-80.6596 Longitude	
KB Elev:	874 ft MSL	KB: 26 ft AGL	**GL Elev:** 848 ft MSL



TUBULAR DETAIL

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval From	Planned Interval To
Conductor	20	94.0 #	J-55	0 '	126 '
Surface	13.375	54.4 #	J-55	0 '	375 '
Intm/Coal	9.625	36.0 #	J-55	0 '	1,710 '
Production	5.5	20.0 #	P-110 HP	0 '	22,750 '

CEMENT DETAIL

	Sacks	Class	Density
Conductor:	151	A	19.3
Surface:	376	A	15.6
Intermediate:	754	A	15.6
Production:	4326	A	15-15.6

Gayne Knitowski

Digitally signed by Gayne Knitowski
Date: 2022.01.06 14:58:43 -05'00'

Created by: C R Hall on 01/05/2022

VIOLATION NO. 11770 DATE 4-29-2022

VI 31 API NO. 47-09-00186

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

NOTICE OF ABATEMENT

LOCATION: FARM NAME Speece and Stanley WELL NO BRK 205H

DISTRICT Buffalo COUNTY Brooke

TO: SWN Production Co., LLC DESIGNATED AGENT Brittany Woody

ADDRESS PO Box 12359 ADDRESS 1300 Fort Peirpont Dr., Suite 201

Spring, Texas 77391-4954 Morgantown, WV 26508

Notice is hereby given that the undersigned made a special inspection of the above named well on April 29, 20 22. The violation cited under violation number 11770, heretofore found to exist on January 5, 2022, has been fully abated. Any outstanding order issued pursuant to said notice of violation is hereby rescinded, and you are hereby notified that you may resume operations.

A copy of this notice has been posted at the wellsite and sent by certified or registered mail to the person or Designated Agent named above.

By this notice, The Office of Oil and Gas does not waive its' rights to pursue civil penalties and or misdemeanor charges pursuant to the subject violation.

SIGNED Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.04.29 08:43:26 -04'00' ADDRESS PO Box 108

TITLE Inspector Gormania WV, 26720

TELEPHONE 304-546-8171

VIOLATION NO. 11796 DATE 4-8-2022

VI 31 API NO. 47-69-00344

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

NOTICE OF ABATEMENT

LOCATION: FARM NAME Shannon Fields WELL NO 210H

DISTRICT Richlan COUNTY Ohio

TO: SWN Production Co., LLC DESIGNATED AGENT Brittany Woody

ADDRESS PO Box 12359 ADDRESS 1300 Fort Peirpont Dr., Suite 201

Spring, Texas 77391-4954 Morgantown, WV 26508

Notice is hereby given that the undersigned made a special inspection of the above named well on April 8, 20 22 . The violation cited under violation number 11796, heretofore found to exist on April 6 ,2022 , has been fully abated. Any outstanding order issued pursuant to said notice of violation is hereby rescinded, and you are hereby notified that you may resume operations.

A copy of this notice has been posted at the wellsite and sent by certified or registered mail to the person or Designated Agent named above.

By this notice, The Office of Oil and Gas does not waive its' rights to pursue civil penalties and or misdemeanor charges pursuant to the subject violation.

SIGNED Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.04.08 16:20:04 -04'00' ADDRESS PO Box 108

TITLE Inspector Gormania WV, 26720

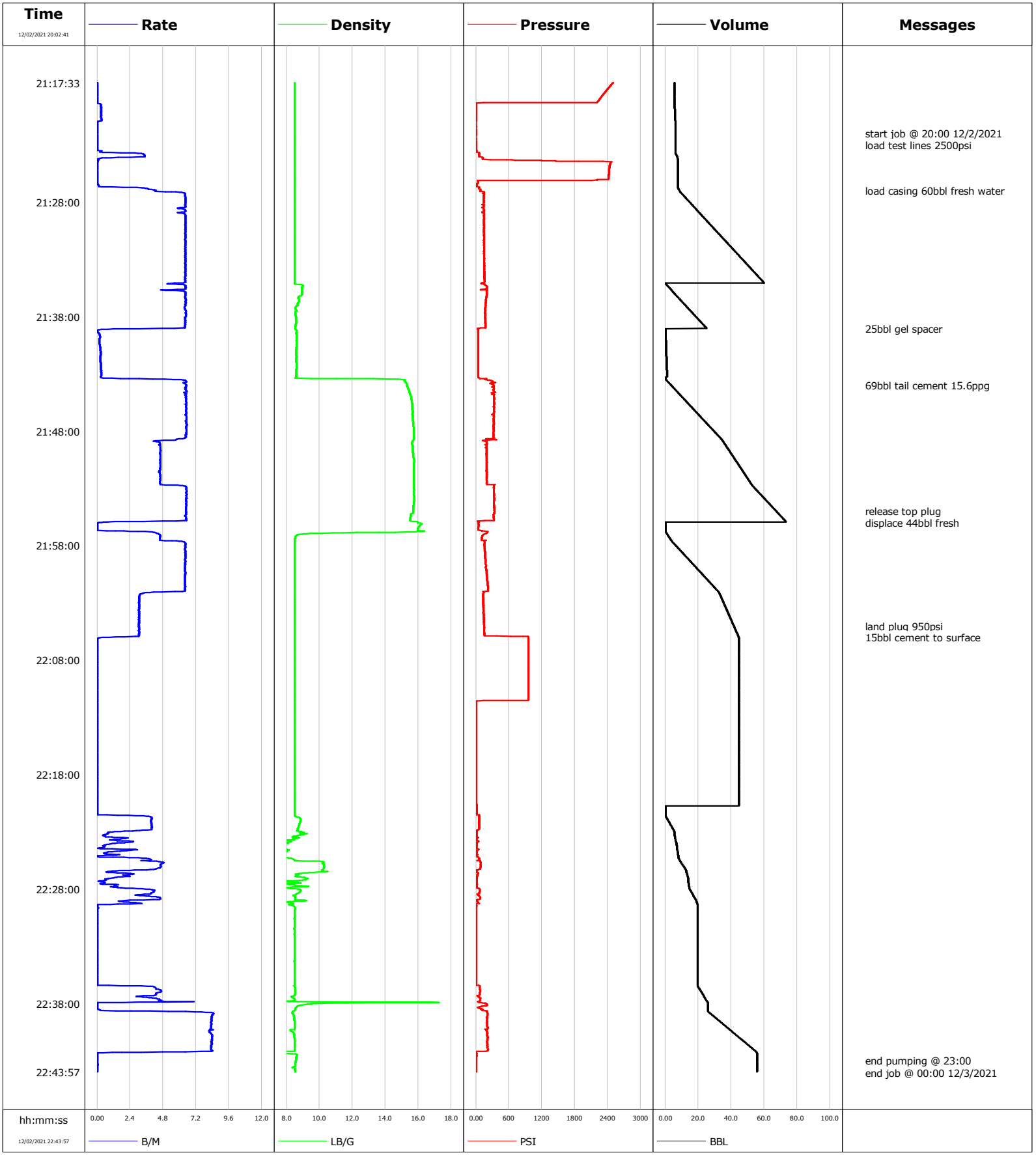
TELEPHONE 304-546-8171

Schlumberger

Cementing Job Report

CemCAT v1.8

Well	OE Burge 205 h	**Client**	Southwestern
Field	Kausooth	**SIR No.**	EN82-01779
Engineer	Danny Cover	**Job Type**	surface
Country	United States	**Job Date**	12-02-2021



Cementing

PRD Post Job Plot

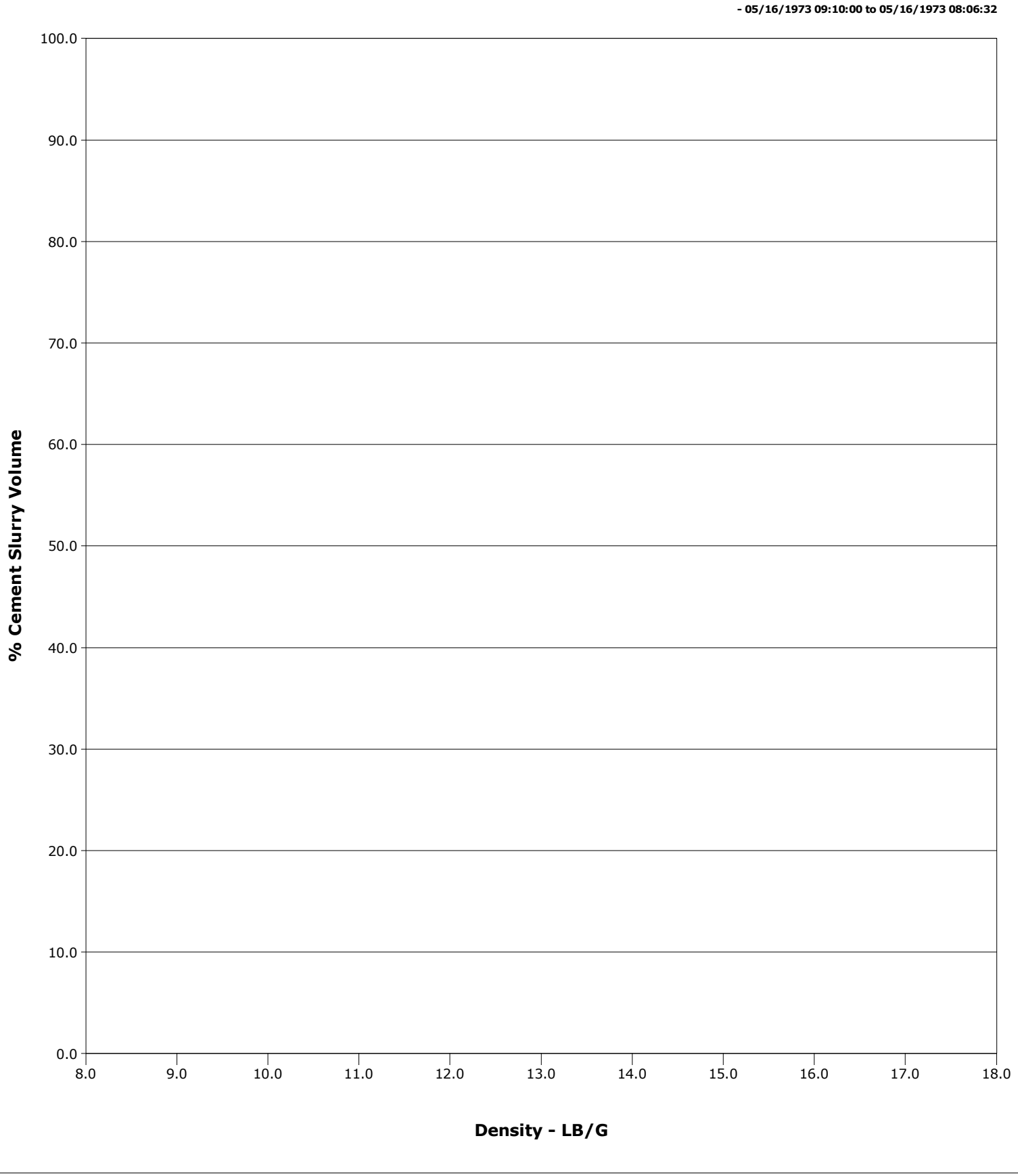


© Schlumberger 1994 - 2021

Schlumberger

Cementing Qa/Qc Density Report

Well	OE Burge 205 h	**Client**	Southwestern
Field	Kausooth	**SIR No.**	EN82-01779
Engineer	Danny Cover	**Job Type**	surface
Country	United States	**Job Date**	12-02-2021



Schlumberger Cementing Service Report

Customer	Job Number
Southwestern	EN82-01779

Well	Location (legal)	Schlumberger Location	Job Start
OE Burge 205 h 205H	47-051-02413-00-00	Weston	Dec/02/2021

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
Kausooth		deg	17.5 in	326.0 ft	326.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
Marshall	West Virginia	2500 psi	63 degF	80 degF	lb/gal
Well Master 0066444998	**API/UWI** 47-051-02413-00-00				

Rig Name	Drilled For	Service Via
sdc 41	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
	lb/gal	cP

Service Line	Job Type
Cementing	surface

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Service Instructions

test lines 2500psi
load casing plud 10bbl
25bbl gel spacer
69bbl tail 15.6ppg
top plug
displace 44bbl fresh water
land plug

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
126.0	20.0	106.5	110	BUTT
326.0	13.4	54.5	110	BUTT

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	44.0 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	50.0 bbl	23.0 bbl	25.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement	Casing Tools	Squeeze Job
[X]	[ ]		

Lift Pressure	psi	Shoe Type	Float	Squeeze Type	
Pipe Rotated	[ ]	Pipe Reciprocated	[ ]	Shoe Depth	326.0 ft	Tool Type	

No. Centralizers	Top Plugs	1	Bottom Plugs	Stage Tool Type		Tool Depth	ft
Cement Head Type	Single			Stage Tool Depth	ft	Tail Pipe Size	in

Job Scheduled For	Arrived on Location	Leave Location	Collar Type	Float	Tail Pipe Depth	ft
Dec/02/2021 20:00	Dec/02/2021 20:00	Dec/03/2021 00:00	Collar Depth	283.0 ft	Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/02/2021	20:02:41	0	0.0	0.00	0.0	Started Acquisition
12/02/2021	20:03:11	0	0.0	0.00	0.0	
12/02/2021	20:03:41	0	0.0	0.00	0.0	
12/02/2021	20:04:11	0	0.0	0.00	0.0	
12/02/2021	20:04:41	-0	0.0	0.00	0.0	
12/02/2021	20:05:11	-1	0.0	0.05	0.0	
12/02/2021	20:05:41	-1	0.0	0.05	0.0	
12/02/2021	20:06:11	-1	0.0	0.05	0.0	
12/02/2021	20:06:41	-1	0.0	0.05	0.0	
12/02/2021	20:07:11	-1	0.0	0.05	0.0	
12/02/2021	20:07:41	0	0.0	0.05	0.0	
12/02/2021	20:08:11	-1	0.0	0.05	0.0	
12/02/2021	20:08:41	-1	0.0	0.05	0.0	
12/02/2021	20:09:11	-1	0.0	0.05	0.0	
12/02/2021	20:09:41	-0	0.0	0.05	0.0	
12/02/2021	20:10:11	-1	0.0	0.05	0.0	
12/02/2021	20:10:41	-0	0.0	0.05	0.0	
12/02/2021	20:11:11	-1	0.0	0.05	0.0	
12/02/2021	20:11:41	-0	0.0	0.05	0.0	
12/02/2021	20:12:11	-0	0.0	0.05	0.0	
12/02/2021	20:12:41	-1	3.1	6.59	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 205 h 205H	Kausooth	Dec/02/2021	Southwestern	EN82-01779

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/02/2021	20:13:41	52	5.1	8.33	0.0	
12/02/2021	20:14:11	5	0.0	8.55	0.0	
12/02/2021	20:14:41	196	0.0	9.23	0.0	
12/02/2021	20:15:11	4	0.3	8.65	0.0	
12/02/2021	20:15:41	3	0.1	8.60	0.0	
12/02/2021	20:16:11	3	0.1	8.59	0.0	
12/02/2021	20:16:41	2	0.2	8.59	0.0	
12/02/2021	20:17:11	2	0.2	8.59	0.0	
12/02/2021	20:17:41	2	0.2	8.59	0.0	
12/02/2021	20:18:11	3	0.2	8.59	0.0	
12/02/2021	20:18:41	2	0.2	8.59	0.0	
12/02/2021	20:19:11	3	0.2	8.59	0.0	
12/02/2021	20:19:41	3	0.2	8.59	0.0	
12/02/2021	20:20:11	3	0.2	8.59	0.0	
12/02/2021	20:20:41	2	0.2	8.59	0.0	
12/02/2021	20:21:11	3	0.2	8.59	0.0	
12/02/2021	20:21:41	3	0.2	8.59	0.0	
12/02/2021	20:22:11	4	0.2	8.59	0.0	
12/02/2021	20:22:41	5	0.2	8.59	0.0	
12/02/2021	20:23:11	5	0.2	8.59	0.0	
12/02/2021	20:23:41	5	0.3	8.59	0.0	
12/02/2021	20:24:11	5	0.3	8.59	0.0	
12/02/2021	20:24:41	5	0.3	8.60	0.0	
12/02/2021	20:25:11	5	0.4	8.60	0.0	
12/02/2021	20:25:41	5	0.1	8.58	0.0	
12/02/2021	20:26:11	5	0.2	8.59	0.0	
12/02/2021	20:26:41	5	0.2	8.59	0.0	
12/02/2021	20:27:11	5	0.2	8.60	0.0	
12/02/2021	20:27:41	4	0.2	8.60	0.0	
12/02/2021	20:28:11	5	0.2	8.60	0.0	
12/02/2021	20:28:41	5	0.2	8.61	0.0	
12/02/2021	20:29:11	5	0.2	8.61	0.0	
12/02/2021	20:29:41	5	0.2	8.62	0.0	
12/02/2021	20:30:11	5	0.3	8.63	0.0	
12/02/2021	20:30:41	5	0.3	8.63	0.0	
12/02/2021	20:31:11	5	0.4	8.64	0.0	
12/02/2021	20:31:41	5	0.4	8.64	0.0	
12/02/2021	20:32:11	5	0.4	8.64	0.0	
12/02/2021	20:32:41	5	0.4	8.64	0.0	
12/02/2021	20:33:11	5	0.4	8.64	0.0	
12/02/2021	20:33:41	5	0.4	8.65	0.0	
12/02/2021	20:34:11	5	0.4	8.65	0.0	
12/02/2021	20:34:41	4	0.4	8.65	0.0	
12/02/2021	20:35:11	4	0.4	8.65	0.0	
12/02/2021	20:35:41	5	0.4	8.65	0.0	
12/02/2021	20:36:11	4	0.4	8.65	0.0	
12/02/2021	20:36:41	6	0.3	8.64	0.0	
12/02/2021	20:37:11	15	0.4	8.64	0.0	
12/02/2021	20:37:41	33	0.4	8.64	0.0	
12/02/2021	20:38:11	71	0.4	8.64	0.0	
12/02/2021	20:38:41	72	0.4	8.64	0.0	
12/02/2021	20:39:11	71	0.4	8.63	0.0	
12/02/2021	20:39:41	70	0.4	8.63	0.0	
12/02/2021	20:40:11	70	0.4	8.63	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 205 h 205H	Kausooth	Dec/02/2021	Southwestern	EN82-01779

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/02/2021	20:41:11	68	0.4	8.62	0.0	
12/02/2021	20:41:41	68	0.4	8.62	0.0	
12/02/2021	20:42:11	67	0.3	8.62	0.0	
12/02/2021	20:42:41	66	0.3	8.61	0.0	
12/02/2021	20:43:11	66	0.3	8.61	0.0	
12/02/2021	20:43:41	65	0.3	8.60	0.0	
12/02/2021	20:44:41	-2	0.3	8.60	0.0	
12/02/2021	20:45:11	-1	0.3	8.59	0.0	
12/02/2021	20:45:41	-1	0.3	8.58	0.0	
12/02/2021	20:46:11	-1	0.3	8.58	0.0	
12/02/2021	20:46:41	-1	0.3	8.58	0.0	
12/02/2021	20:47:11	-1	0.3	8.58	0.0	
12/02/2021	20:47:41	-1	0.3	8.58	0.0	
12/02/2021	20:48:11	-2	0.3	8.58	0.0	
12/02/2021	20:48:41	-1	0.3	8.58	0.0	
12/02/2021	20:49:11	-1	0.3	8.58	0.0	
12/02/2021	20:49:41	-1	0.3	8.58	0.0	
12/02/2021	20:50:11	-2	0.3	8.58	0.0	
12/02/2021	20:50:41	-1	0.3	8.58	0.0	
12/02/2021	20:51:11	-1	0.2	8.58	0.0	
12/02/2021	20:51:41	-1	0.3	8.58	0.0	
12/02/2021	20:52:11	-2	0.3	8.58	0.0	
12/02/2021	20:52:41	-2	0.3	8.57	0.0	
12/02/2021	20:53:11	-1	0.3	8.57	0.0	
12/02/2021	20:53:41	-1	0.3	8.57	0.0	
12/02/2021	20:54:11	-1	0.3	8.57	0.0	
12/02/2021	20:54:41	-1	0.3	8.57	0.0	
12/02/2021	20:55:11	-1	0.3	8.57	0.0	
12/02/2021	20:55:41	-1	0.3	8.57	0.0	
12/02/2021	20:56:11	-2	0.3	8.57	0.0	
12/02/2021	20:56:41	-1	0.3	8.57	0.0	
12/02/2021	20:57:11	-2	0.3	8.57	0.0	
12/02/2021	20:57:41	-1	0.3	8.56	0.0	
12/02/2021	20:58:11	-2	0.3	8.56	0.0	
12/02/2021	20:58:41	-2	0.3	8.56	0.0	
12/02/2021	20:59:11	-1	0.3	8.56	0.0	
12/02/2021	20:59:41	-1	0.3	8.56	0.0	
12/02/2021	21:00:11	-1	0.3	8.56	0.0	
12/02/2021	21:00:41	-2	0.3	8.56	0.0	
12/02/2021	21:01:11	-2	0.3	8.55	0.0	
12/02/2021	21:01:41	-2	0.3	8.55	0.0	
12/02/2021	21:02:11	-1	0.3	8.55	0.0	
12/02/2021	21:02:41	-2	0.3	8.55	0.0	
12/02/2021	21:03:11	-2	0.3	8.55	0.0	
12/02/2021	21:03:41	-2	0.3	8.55	0.0	
12/02/2021	21:04:11	-1	0.2	8.55	0.0	
12/02/2021	21:04:41	-2	0.2	8.55	0.0	
12/02/2021	21:05:11	-2	0.2	8.55	0.0	
12/02/2021	21:05:41	-2	0.2	8.55	0.0	
12/02/2021	21:06:11	-2	0.2	8.55	0.0	
12/02/2021	21:06:41	-2	0.2	8.55	0.0	
12/02/2021	21:07:11	-2	0.2	8.55	0.0	
12/02/2021	21:07:41	-2	0.2	8.55	0.0	
12/02/2021	21:08:11	-2	0.2	8.55	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 205 h 205H	Kausooth	Dec/02/2021	Southwestern	EN82-01779

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/02/2021	21:09:11	-2	0.2	8.54	0.0	
12/02/2021	21:09:41	-2	0.2	8.54	0.0	
12/02/2021	21:10:11	-2	0.2	8.54	0.0	
12/02/2021	21:10:41	-2	0.2	8.54	0.0	
12/02/2021	21:11:11	-2	0.2	8.54	0.0	
12/02/2021	21:11:41	-2	0.2	8.54	0.0	
12/02/2021	21:12:11	-2	0.2	8.54	0.0	
12/02/2021	21:12:41	-2	0.2	8.54	0.0	
12/02/2021	21:13:11	-2	0.2	8.54	0.0	
12/02/2021	21:13:41	-2	0.2	8.54	0.0	
12/02/2021	21:14:11	-2	0.2	8.54	0.0	
12/02/2021	21:14:41	-3	0.2	8.54	0.0	
12/02/2021	21:15:11	60	3.1	8.54	0.0	
12/02/2021	21:15:41	80	4.3	8.50	0.0	
12/02/2021	21:16:11	75	4.3	8.50	0.0	
12/02/2021	21:16:41	947	0.0	8.50	0.0	
12/02/2021	21:17:11	1355	0.0	8.50	0.0	
12/02/2021	21:18:11	2384	0.0	8.50	0.0	
12/02/2021	21:18:41	2299	0.0	8.50	0.0	
12/02/2021	21:19:11	2222	0.0	8.50	0.0	
12/02/2021	21:19:41	3	0.3	8.51	0.0	
12/02/2021	21:20:11	4	0.3	8.50	0.0	
12/02/2021	21:20:41	3	0.3	8.50	0.0	
12/02/2021	21:21:11	-0	0.0	8.50	0.0	
12/02/2021	21:21:41	0	0.0	8.50	0.0	
12/02/2021	21:22:11	-0	0.0	8.50	0.0	
12/02/2021	21:22:41	0	0.0	8.50	0.0	
12/02/2021	21:23:00	0	0.0	8.51	0.0	load test lines 2500psi
12/02/2021	21:23:11	0	0.0	8.50	0.0	
12/02/2021	21:23:41	59	2.4	8.50	0.0	
12/02/2021	21:24:11	122	0.1	8.50	0.0	
12/02/2021	21:24:41	2439	0.0	8.50	0.0	
12/02/2021	21:25:11	2424	0.0	8.50	0.0	
12/02/2021	21:25:41	2418	0.0	8.50	0.0	
12/02/2021	21:26:11	38	0.0	8.50	0.0	
12/02/2021	21:26:41	60	1.9	8.51	0.0	
12/02/2021	21:27:00	75	4.3	8.51	0.0	load casing 60bbl fresh water
12/02/2021	21:27:11	149	6.4	8.51	0.0	
12/02/2021	21:27:41	146	6.4	8.50	0.0	
12/02/2021	21:28:11	145	6.4	8.50	0.0	
12/02/2021	21:28:41	146	6.4	8.50	0.0	
12/02/2021	21:29:11	148	6.4	8.50	0.0	
12/02/2021	21:29:41	144	6.4	8.50	0.0	
12/02/2021	21:30:11	146	6.4	8.50	0.0	
12/02/2021	21:30:41	150	6.4	8.50	0.0	
12/02/2021	21:31:11	149	6.4	8.50	0.0	
12/02/2021	21:31:41	147	6.4	8.50	0.0	
12/02/2021	21:32:11	150	6.4	8.50	0.0	
12/02/2021	21:32:41	152	6.4	8.50	0.0	
12/02/2021	21:33:11	152	6.4	8.50	0.0	
12/02/2021	21:33:41	152	6.4	8.50	0.0	
12/02/2021	21:34:11	154	6.4	8.50	0.0	
12/02/2021	21:34:41	155	6.4	8.50	0.0	
12/02/2021	21:35:11	158	6.2	8.80	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 205 h 205H	Kausooth	Dec/02/2021	Southwestern	EN82-01779

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/02/2021	21:36:11	199	6.4	8.83	0.0	
12/02/2021	21:36:41	176	6.5	8.75	0.0	
12/02/2021	21:37:11	165	6.4	8.54	0.0	
12/02/2021	21:37:41	161	6.4	8.55	0.0	
12/02/2021	21:38:11	171	6.4	8.57	0.0	
12/02/2021	21:38:41	173	6.4	8.55	0.0	
12/02/2021	21:39:00	60	5.6	8.51	0.0	25bbl gel spacer
12/02/2021	21:39:11	43	0.0	8.61	0.0	
12/02/2021	21:39:41	39	0.2	8.61	0.0	
12/02/2021	21:40:11	38	0.2	8.60	0.0	
12/02/2021	21:40:41	38	0.2	8.60	0.0	
12/02/2021	21:41:11	38	0.3	8.59	0.0	
12/02/2021	21:41:41	38	0.2	8.60	0.0	
12/02/2021	21:42:11	38	0.3	8.60	0.0	
12/02/2021	21:42:41	39	0.3	8.60	0.0	
12/02/2021	21:43:11	38	0.3	8.60	0.0	
12/02/2021	21:43:41	311	6.5	15.21	0.0	
12/02/2021	21:44:00	320	6.5	15.30	0.0	69bbl tail cement 15.6ppg
12/02/2021	21:44:11	320	6.4	15.36	0.0	
12/02/2021	21:44:41	330	6.5	15.48	0.0	
12/02/2021	21:45:11	340	6.5	15.57	0.0	
12/02/2021	21:45:41	339	6.5	15.62	0.0	
12/02/2021	21:46:11	330	6.5	15.64	0.0	
12/02/2021	21:46:41	314	6.5	15.66	0.0	
12/02/2021	21:47:11	325	6.5	15.68	0.0	
12/02/2021	21:47:41	324	6.5	15.71	0.0	
12/02/2021	21:48:11	316	6.5	15.72	0.0	
12/02/2021	21:48:41	185	5.9	15.71	0.0	
12/02/2021	21:49:11	166	4.5	15.63	0.0	
12/02/2021	21:49:41	194	4.6	15.66	0.0	
12/02/2021	21:50:11	192	4.6	15.69	0.0	
12/02/2021	21:50:41	193	4.6	15.74	0.0	
12/02/2021	21:51:41	197	4.6	15.72	0.0	
12/02/2021	21:52:11	196	4.6	15.73	0.0	
12/02/2021	21:52:41	328	5.0	15.72	0.0	
12/02/2021	21:53:11	333	6.5	15.73	0.0	
12/02/2021	21:53:41	329	6.5	15.74	0.0	
12/02/2021	21:54:11	328	6.5	15.72	0.0	
12/02/2021	21:54:41	338	6.5	15.69	0.0	
12/02/2021	21:55:00	334	6.5	15.69	0.0	release top plug
12/02/2021	21:55:11	334	6.5	15.62	0.0	
12/02/2021	21:55:41	324	6.5	15.50	0.0	
12/02/2021	21:56:00	48	0.1	15.97	0.0	displace 44bbl fresh
12/02/2021	21:56:11	46	0.0	16.12	0.0	
12/02/2021	21:56:41	112	0.7	16.09	0.0	
12/02/2021	21:57:11	110	4.6	8.55	0.0	
12/02/2021	21:57:41	157	6.4	8.50	0.0	
12/02/2021	21:58:11	161	6.4	8.50	0.0	
12/02/2021	21:58:41	162	6.4	8.50	0.0	
12/02/2021	21:59:11	174	6.4	8.50	0.0	
12/02/2021	21:59:41	180	6.4	8.50	0.0	
12/02/2021	22:00:11	193	6.4	8.50	0.0	
12/02/2021	22:00:41	200	6.4	8.50	0.0	
12/02/2021	22:01:11	208	6.4	8.50	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 205 h 205H	Kausooth	Dec/02/2021	Southwestern	EN82-01779

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/02/2021	22:02:11	136	3.3	8.50	0.0	
12/02/2021	22:02:41	136	3.1	8.50	0.0	
12/02/2021	22:03:11	141	3.1	8.50	0.0	
12/02/2021	22:03:41	134	3.0	8.50	0.0	
12/02/2021	22:04:11	143	3.1	8.50	0.0	
12/02/2021	22:04:41	151	3.1	8.50	0.0	
12/02/2021	22:05:00	150	3.1	8.50	0.0	land plug 950psi
12/02/2021	22:05:11	148	3.1	8.50	0.0	
12/02/2021	22:05:41	154	3.1	8.50	0.0	
12/02/2021	22:06:00	957	0.5	8.50	0.0	15bbl cement to surface
12/02/2021	22:06:11	954	0.0	8.50	0.0	
12/02/2021	22:06:41	952	0.0	8.50	0.0	
12/02/2021	22:07:11	951	0.0	8.50	0.0	
12/02/2021	22:07:41	952	0.0	8.50	0.0	
12/02/2021	22:08:11	952	0.0	8.50	0.0	
12/02/2021	22:08:41	952	0.0	8.50	0.0	
12/02/2021	22:09:11	951	0.0	8.50	0.0	
12/02/2021	22:09:41	951	0.0	8.50	0.0	
12/02/2021	22:10:11	952	0.0	8.50	0.0	
12/02/2021	22:10:41	953	0.0	8.50	0.0	
12/02/2021	22:11:11	953	0.0	8.50	0.0	
12/02/2021	22:11:41	6	0.0	8.50	0.0	
12/02/2021	22:12:11	4	0.0	8.50	0.0	
12/02/2021	22:12:41	4	0.0	8.50	0.0	
12/02/2021	22:13:11	5	0.0	8.50	0.0	
12/02/2021	22:13:41	4	0.0	8.50	0.0	
12/02/2021	22:14:11	4	0.0	8.50	0.0	
12/02/2021	22:14:41	1	0.0	8.50	0.0	
12/02/2021	22:15:11	2	0.0	8.50	0.0	
12/02/2021	22:15:41	1	0.0	8.50	0.0	
12/02/2021	22:16:11	1	0.0	8.50	0.0	
12/02/2021	22:16:41	1	0.0	8.50	0.0	
12/02/2021	22:17:11	1	0.0	8.50	0.0	
12/02/2021	22:17:41	1	0.0	8.50	0.0	
12/02/2021	22:18:11	1	0.0	8.50	0.0	
12/02/2021	22:18:41	1	0.0	8.50	0.0	
12/02/2021	22:19:11	1	0.0	8.50	0.0	
12/02/2021	22:19:41	1	0.0	8.50	0.0	
12/02/2021	22:20:11	1	0.0	8.51	0.0	
12/02/2021	22:20:41	13	0.0	8.50	0.0	
12/02/2021	22:21:11	12	0.0	8.50	0.0	
12/02/2021	22:21:41	62	3.9	8.65	0.0	
12/02/2021	22:22:11	61	3.9	8.82	0.0	
12/02/2021	22:22:41	60	4.0	8.69	0.0	
12/02/2021	22:23:11	10	0.8	8.82	0.0	
12/02/2021	22:23:41	11	1.1	8.43	0.0	
12/02/2021	22:24:11	11	0.6	7.68	0.0	
12/02/2021	22:25:11	43	0.2	7.36	0.0	
12/02/2021	22:25:41	89	4.8	10.23	0.0	
12/02/2021	22:26:11	79	4.4	10.27	0.0	
12/02/2021	22:26:41	36	2.7	8.56	0.0	
12/02/2021	22:27:11	10	0.7	9.17	0.0	
12/02/2021	22:27:41	10	1.3	8.65	0.0	
12/02/2021	22:28:11	67	4.1	8.81	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 205 h 205H	Kausooth	Dec/02/2021	Southwestern	EN82-01779

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/02/2021	22:29:11	45	2.8	8.25	0.0	
12/02/2021	22:29:41	9	0.1	8.51	0.0	
12/02/2021	22:30:11	9	0.0	8.50	0.0	
12/02/2021	22:30:41	8	0.0	8.50	0.0	
12/02/2021	22:31:11	8	0.0	8.50	0.0	
12/02/2021	22:31:41	8	0.0	8.50	0.0	
12/02/2021	22:32:11	9	0.0	8.50	0.0	
12/02/2021	22:32:41	8	0.0	8.49	0.0	
12/02/2021	22:33:11	7	0.0	8.49	0.0	
12/02/2021	22:33:41	7	0.0	8.49	0.0	
12/02/2021	22:34:11	8	0.0	8.49	0.0	
12/02/2021	22:34:41	9	0.0	8.49	0.0	
12/02/2021	22:35:11	7	0.0	8.50	0.0	
12/02/2021	22:35:41	8	0.0	8.50	0.0	
12/02/2021	22:36:11	8	0.0	8.50	0.0	
12/02/2021	22:36:41	66	4.3	8.52	0.0	
12/02/2021	22:37:11	68	4.3	8.51	0.0	
12/02/2021	22:37:41	75	4.6	8.50	0.0	
12/02/2021	22:38:11	194	0.0	8.73	0.0	
12/02/2021	22:38:41	215	6.5	8.37	0.0	
12/02/2021	22:39:11	200	8.4	8.46	0.0	
12/02/2021	22:39:41	208	8.3	8.49	0.0	
12/02/2021	22:40:11	211	8.3	8.50	0.0	
12/02/2021	22:40:41	208	8.4	8.46	0.0	
12/02/2021	22:41:11	211	8.4	8.50	0.0	
12/02/2021	22:41:41	210	8.3	8.50	0.0	
12/02/2021	22:42:11	22	7.6	7.98	0.0	
12/02/2021	22:42:41	9	0.0	8.58	0.0	
12/02/2021	22:43:00	8	0.0	8.56	0.0	end pumping @ 23:00
12/02/2021	22:43:05	8	0.0	8.55	0.0	end job @ 00:00 12/3/2021
12/02/2021	22:43:11	8	0.0	8.54	0.0	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
2.3			8.8	0.0	0.0	0.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
2548	2	207	950			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume
%	69.0 bbl	0.0 bbl	59 degF	X	15.0 bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
	Danny Cover	-	X -

Service Quality Evaluation

Client:	Southwestern	**Service Order #:**	
Field:	Kausooth	**Date:**	Dec/02/2021
Rig:	sdc 41	**Operating Time (hh:mm):**	00:00
Well:	OE Burge 205 h	**Client Rep:**	
Service Line:	Cementing	**Schlumberger Engineer:**	Danny Cover
Job Type:	surface	**Schlumberger FSM:**	

Main Objective:

To be completed by Company Rep. Please answer Y (Yes) or N (No) and add any comments below.

		Score	Yes / No	Result
1	**HSE**			
1a	Free of lost time injury and compliance with SLB and loc. spec. HSE practice	5	**yes** [X] **no** [ ]	5
1b	Free of environmental spill or non-compliant discharge	5	**yes** [X] **no** [ ]	5
1c	Wellsite left clean	4	**yes** [X] **no** [ ]	4
			Sub-total	100%
2	**Design / Preparation**			
2a	Program incl. job simulation (CemCADE) & pump schedule / tool hydraulic calcs	3	**yes** [X] **no** [ ]	3
2b	Equipment maintenance schedule completed / Green tagged	2	**yes** [X] **no** [ ]	2
2c	All materials and equipment required for job/contingency checked & on location	2	**yes** [X] **no** [ ]	2
2d	Safety / pre-job meeting conducted with all involved present	2	**yes** [X] **no** [ ]	2
			Sub-total	100%
3	**Execution**			
3a	Lost time < 30 mins	3	**yes** [X] **no** [ ]	3
3b	Equipment pressure tested succesfully	3	**yes** [X] **no** [ ]	3
3c	All key parameters monitored and recorded accurately (Pressure, Rate, Density)	2	**yes** [X] **no** [ ]	2
3d	Plugs / darts released and tested succesfully	2	**yes** [X] **no** [ ]	2
3e	Density variation met expectations	2	**yes** [X] **no** [ ]	2
3f	Personnel performed as per expectations	2	**yes** [X] **no** [ ]	2
3g	Equipment performed as per expectations	2	**yes** [X] **no** [ ]	2
3h	Job pumped as per design	3	**yes** [X] **no** [ ]	3
3i	Did job start on time	2	**yes** [X] **no** [ ]	2
3j	Free of Operational failures (screen out, Cementing Example, etc.)	3	**yes** [X] **no** [ ]	3
			Sub-total	100%
4	**Evaluation**			
4a	Main job objective achieved with no consequential non-productive time	10	**yes** [X] **no** [ ]	10
			Sub-total	100%

Total 100%

Comments: (Please include a brief explanation for a "NO" response and summarize any innovations attempted on this well.)

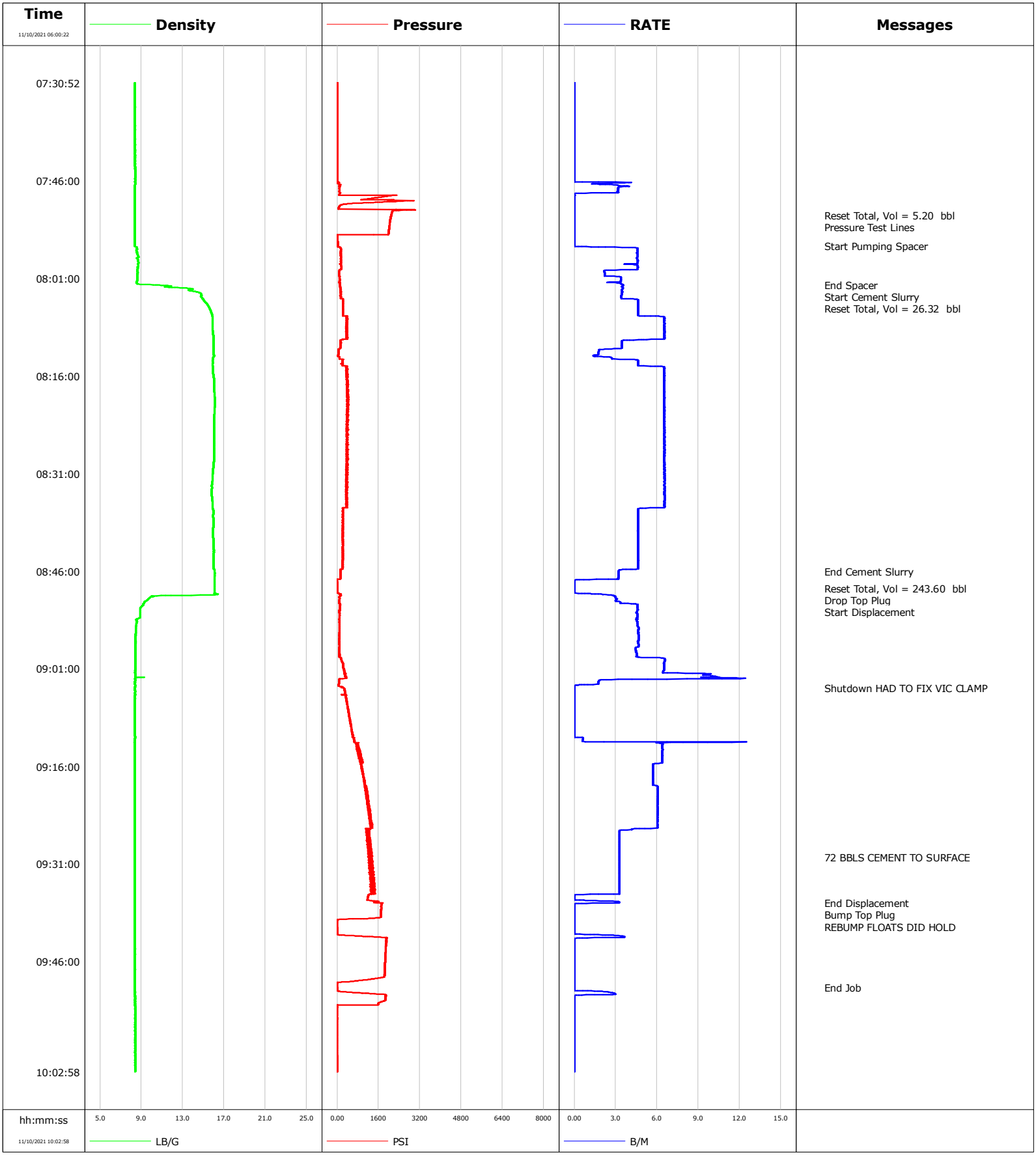
Client:	**Schlumberger:**
Client Signature:	**Schlumberger Signature:**

Schlumberger

Cementing Job Report

CemCAT v1.7

Well	OE BURGE MSH 3H	**Client**	SWN PRODUCTION COMPANY
Field	KAUSOOTH	**SIR No.**	EN82-01476
Engineer	BRIAN FOOTE	**Job Type**	INTERMEDIATE
Country	USA	**Job Date**	11/10/2021



Schlumberger

Cementing Service Report

Customer	Job Number
SWN PRODUCTION COMPANY	EN82-01476

Well	Location (legal)	Schlumberger Location	Job Start
OE BURGE MSH 3H 3H	OE BURGE PAD	STRASBURG	Nov/10/2021

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
KAUSOOTH	Dirty-Sandstone	1 deg	12.3 in	2750.0 ft	2750.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
MARSHALL	West Virginia	psi	90 degF	80 degF	lb/gal

Well Mast	API/UWI
47-051-02414-00-00	47-051-02414-00-00

Rig Name	Drilled For	Service Via
SDC 41	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
Clear Brine	9.80 lb/gal	cP

Service Line	Job Type
Cementing	INTERMEDIATE

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Service Instructions

CEMENT 2739' OF 9 5/8 WITH
25 BBL GEL
240.4 BBL CLASS A 16 PPG
1205 SK 1.12 YLD 4.8 H20
DROP TOP PLUG
DISP 208 BBL H20
FLOATS DID NOT HOLD
72 BBL CEMENT TO SURFACE

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
2300.0	9.6	36.0	J55	8RD
2739.0	9.6	40.0	J55	8RD

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	208.0 bbl	NONE	ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	211.3 bbl	21.2 bbl	134.5 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
X	X

Lift Pressure	Pipe Rotated	Pipe Reciprocated
1400 psi	☐	☐

No. Centralizers	Top Plugs	Bottom Plugs
	1	

Cement Head Type
Single

Job Scheduled For	Arrived on Location	Leave Location
Nov/10/2021	Nov/10/2021	Nov/10/2021

Casing Tools

Shoe Type	Guide
Shoe Depth	2739.0 ft
Stage Tool Type	
Stage Tool Depth	ft
Collar Type	Float
Collar Depth	2697.0 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
11/10/2021	07:29:47	14	0.0	5.9	8.38	Started Acquisition
11/10/2021	07:30:00	15	0.0	5.9	8.38	Start Job
11/10/2021	07:30:47	14	0.0	5.9	8.38	
11/10/2021	07:31:47	15	0.0	5.9	8.38	
11/10/2021	07:32:47	15	0.0	5.9	8.38	
11/10/2021	07:33:47	15	0.0	5.9	8.38	
11/10/2021	07:34:47	15	0.0	5.9	8.38	
11/10/2021	07:35:47	16	0.0	5.9	8.38	
11/10/2021	07:36:47	17	0.0	5.9	8.38	
11/10/2021	07:37:47	17	0.0	5.9	8.38	
11/10/2021	07:38:47	17	0.0	5.9	8.38	
11/10/2021	07:39:47	18	0.0	5.9	8.38	
11/10/2021	07:40:47	18	0.0	5.9	8.38	
11/10/2021	07:41:47	18	0.0	5.9	8.38	
11/10/2021	07:42:47	18	0.0	5.9	8.38	
11/10/2021	07:43:47	19	0.0	5.9	8.38	
11/10/2021	07:44:47	2	0.0	5.9	8.38	
11/10/2021	07:45:47	1	0.0	5.9	8.38	
11/10/2021	07:46:47	68	4.0	7.7	8.38	
11/10/2021	07:47:47	81	3.2	10.9	8.38	
11/10/2021	07:48:47	1085	0.0	11.1	8.38	

Well	Field	Job Start	Customer	Job Number
OE BURGE MSH 3H 3H	KAUSOOTH	Nov/10/2021	SWN PRODUCTION COMPANY	EN82-01476

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
11/10/2021	07:50:47	2119	0.0	11.1	8.38	
11/10/2021	07:51:19	2084	0.0	11.1	8.38	Reset Total, Vol = 5.20 bbl
11/10/2021	07:51:47	2061	0.0	11.1	8.38	
11/10/2021	07:52:00	2051	0.0	11.1	8.38	Pressure Test Lines
11/10/2021	07:52:47	2020	0.0	11.1	8.38	
11/10/2021	07:53:47	1990	0.0	11.1	8.38	
11/10/2021	07:54:47	16	0.0	11.1	8.38	
11/10/2021	07:55:47	21	0.0	11.1	8.38	
11/10/2021	07:56:00	21	0.0	11.1	8.38	Start Pumping Spacer
11/10/2021	07:56:47	139	4.6	14.0	8.54	
11/10/2021	07:57:47	142	4.5	18.6	8.60	
11/10/2021	07:58:47	141	3.9	23.1	8.67	
11/10/2021	07:59:47	76	2.2	27.4	8.62	
11/10/2021	08:00:47	78	3.4	29.7	8.62	
11/10/2021	08:01:47	94	3.4	33.0	8.61	
11/10/2021	08:02:00	101	3.5	33.8	10.74	End Spacer
11/10/2021	08:02:47	128	3.5	36.5	13.53	
11/10/2021	08:03:00	140	3.5	37.2	14.30	Start Cement Slurry
11/10/2021	08:03:03	130	3.5	37.4	14.38	Reset Total, Vol = 26.32 bbl
11/10/2021	08:03:47	149	3.4	39.9	14.75	
11/10/2021	08:04:47	218	4.6	44.1	15.28	
11/10/2021	08:05:47	221	4.6	48.8	15.66	
11/10/2021	08:06:47	411	6.1	53.4	15.86	
11/10/2021	08:07:47	381	6.5	60.0	15.88	
11/10/2021	08:08:47	358	6.5	66.5	15.89	
11/10/2021	08:09:47	377	6.5	73.0	15.96	
11/10/2021	08:10:47	139	3.4	78.4	15.96	
11/10/2021	08:11:47	79	2.9	81.8	15.96	
11/10/2021	08:12:47	21	1.4	83.6	16.08	
11/10/2021	08:13:47	223	4.6	86.7	15.91	
11/10/2021	08:14:47	379	6.5	92.0	15.92	
11/10/2021	08:15:47	355	6.5	98.5	15.96	
11/10/2021	08:16:47	374	6.5	105.0	16.03	
11/10/2021	08:17:47	407	6.5	111.6	16.03	
11/10/2021	08:18:47	449	6.5	118.1	16.07	
11/10/2021	08:19:47	442	6.5	124.6	16.13	
11/10/2021	08:20:47	390	6.5	131.2	16.09	
11/10/2021	08:21:47	377	6.5	137.7	16.05	
11/10/2021	08:22:47	443	6.5	144.2	16.03	
11/10/2021	08:23:47	395	6.5	150.8	16.02	
11/10/2021	08:24:47	362	6.5	157.3	16.01	
11/10/2021	08:25:47	377	6.5	163.8	16.03	
11/10/2021	08:26:47	348	6.5	170.4	16.01	
11/10/2021	08:27:47	379	6.5	176.9	16.01	
11/10/2021	08:28:47	407	6.5	183.4	16.01	
11/10/2021	08:29:47	384	6.5	190.0	15.98	
11/10/2021	08:30:47	354	6.5	196.5	15.92	
11/10/2021	08:31:47	356	6.5	203.0	15.88	
11/10/2021	08:32:47	388	6.5	209.6	15.81	
11/10/2021	08:33:47	372	6.5	216.1	15.78	
11/10/2021	08:34:47	350	6.5	222.7	15.84	
11/10/2021	08:35:47	370	6.5	229.2	15.88	
11/10/2021	08:36:47	213	4.6	234.8	15.97	
11/10/2021	08:37:47	219	4.6	239.4	15.95	

Well	Field	Job Start	Customer	Job Number
OE BURGE MSH 3H 3H	KAUSOOTH	Nov/10/2021	SWN PRODUCTION COMPANY	EN82-01476

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
11/10/2021	08:39:47	211	4.6	248.6	15.93	
11/10/2021	08:40:47	217	4.6	253.2	15.94	
11/10/2021	08:41:47	217	4.6	257.9	15.98	
11/10/2021	08:42:47	208	4.6	262.5	16.01	
11/10/2021	08:43:47	214	4.6	267.1	15.99	
11/10/2021	08:44:47	226	4.6	271.8	15.98	
11/10/2021	08:45:47	119	3.3	276.3	16.08	
11/10/2021	08:46:00	118	3.2	277.0	16.09	End Cement Slurry
11/10/2021	08:46:47	117	3.2	279.5	16.09	
11/10/2021	08:47:47	2	0.0	281.0	16.09	
11/10/2021	08:48:34	5	0.0	281.0	16.09	Reset Total, Vol = 243.60 bbl
11/10/2021	08:48:47	5	0.0	281.0	16.08	
11/10/2021	08:49:00	5	0.0	281.0	16.08	Drop Top Plug
11/10/2021	08:49:47	126	2.9	281.8	10.13	
11/10/2021	08:50:00	81	3.0	282.5	9.86	Start Displacement
11/10/2021	08:50:47	74	3.3	284.9	9.28	
11/10/2021	08:52:47	89	4.6	293.8	8.88	
11/10/2021	08:53:47	84	4.6	298.4	8.57	
11/10/2021	08:54:47	87	4.7	303.0	8.46	
11/10/2021	08:55:47	85	4.7	307.6	8.43	
11/10/2021	08:56:47	74	4.6	312.3	8.43	
11/10/2021	08:57:47	62	4.4	316.9	8.40	
11/10/2021	08:58:47	73	4.5	321.4	8.40	
11/10/2021	08:59:47	175	6.6	326.9	8.40	
11/10/2021	09:00:47	234	6.5	333.5	8.39	
11/10/2021	09:01:47	282	9.9	340.3	8.39	
11/10/2021	09:02:47	69	1.8	349.0	8.39	
11/10/2021	09:03:47	234	0.0	350.1	8.38	
11/10/2021	09:04:00	278	0.0	350.1	8.38	Shutdown HAD TO FIX VIC CLAMP
11/10/2021	09:04:47	312	0.0	350.1	8.38	
11/10/2021	09:05:47	367	0.0	350.1	8.38	
11/10/2021	09:06:47	405	0.0	350.1	8.38	
11/10/2021	09:07:47	441	0.0	350.1	8.38	
11/10/2021	09:08:47	486	0.0	350.1	8.38	
11/10/2021	09:09:47	531	0.0	350.1	8.38	
11/10/2021	09:10:47	572	0.0	350.1	8.38	
11/10/2021	09:11:47	640	0.6	350.3	8.38	
11/10/2021	09:12:47	765	6.4	354.4	8.37	
11/10/2021	09:13:47	895	6.4	360.8	8.38	
11/10/2021	09:14:47	952	6.4	367.2	8.38	
11/10/2021	09:15:47	920	5.7	373.4	8.38	
11/10/2021	09:16:47	965	5.7	379.1	8.38	
11/10/2021	09:17:47	1062	5.7	384.8	8.38	
11/10/2021	09:18:47	1057	5.7	390.5	8.38	
11/10/2021	09:19:47	1091	6.1	396.5	8.38	
11/10/2021	09:20:47	1163	6.1	402.5	8.38	
11/10/2021	09:21:47	1221	6.0	408.6	8.38	
11/10/2021	09:22:47	1198	6.0	414.6	8.38	
11/10/2021	09:23:47	1294	6.0	420.7	8.38	
11/10/2021	09:24:47	1273	6.0	426.7	8.38	
11/10/2021	09:25:47	1183	3.6	432.3	8.38	
11/10/2021	09:26:47	1247	3.3	435.6	8.38	
11/10/2021	09:27:47	1252	3.3	438.9	8.38	
11/10/2021	09:28:47	1236	3.3	442.1	8.38	

Well	Field	Job Start	Customer	Job Number
OE BURGE MSH 3H 3H	KAUSOOTH	Nov/10/2021	SWN PRODUCTION COMPANY	EN82-01476

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
11/10/2021	09:30:00	1265	3.3	446.1	8.38	72 BBLS CEMENT TO SURFACE
11/10/2021	09:30:47	1362	3.3	448.6	8.38	
11/10/2021	09:31:47	1353	3.3	451.9	8.38	
11/10/2021	09:32:47	1402	3.3	455.2	8.38	
11/10/2021	09:33:47	1409	3.3	458.4	8.38	
11/10/2021	09:34:47	1343	3.3	461.7	8.38	
11/10/2021	09:35:47	1214	0.0	464.6	8.38	
11/10/2021	09:36:47	1454	3.1	465.0	8.38	
11/10/2021	09:37:00	1677	2.9	465.7	8.38	End Displacement
11/10/2021	09:37:30	1703	0.0	465.8	8.38	Bump Top Plug
11/10/2021	09:37:47	1697	0.0	465.8	8.38	
11/10/2021	09:38:47	1685	0.0	465.8	8.38	
11/10/2021	09:39:00	1685	0.0	465.8	8.38	REBUMP FLOATS DID HOLD
11/10/2021	09:39:47	-1	0.0	465.8	8.38	
11/10/2021	09:40:47	0	0.0	465.8	8.38	
11/10/2021	09:41:47	18	0.0	465.8	8.38	
11/10/2021	09:42:47	1911	0.0	467.4	8.38	
11/10/2021	09:43:47	1879	0.0	467.4	8.38	
11/10/2021	09:44:47	1864	0.0	467.4	8.38	
11/10/2021	09:45:47	1851	0.0	467.4	8.38	
11/10/2021	09:46:47	1840	0.0	467.4	8.38	
11/10/2021	09:47:47	1833	0.0	467.4	8.38	
11/10/2021	09:48:47	1178	0.0	467.4	8.38	
11/10/2021	09:49:47	-2	0.0	467.4	8.38	
11/10/2021	09:50:00	0	0.0	467.4	8.38	End Job
11/10/2021	09:50:47	735	2.7	468.0	8.38	
11/10/2021	09:51:47	1869	0.0	469.0	8.38	
11/10/2021	09:52:47	-1	0.0	469.0	8.38	
11/10/2021	09:53:47	-2	0.0	469.0	8.38	
11/10/2021	09:54:47	0	0.0	469.0	8.38	
11/10/2021	09:55:47	-2	0.0	469.0	8.38	
11/10/2021	09:56:47	-2	0.0	469.0	8.38	
11/10/2021	09:57:47	-2	0.0	469.0	8.38	
11/10/2021	09:58:47	-1	0.0	469.0	8.38	
11/10/2021	09:59:47	-1	0.0	469.0	8.38	
11/10/2021	10:00:47	0	0.0	469.0	8.38	
11/10/2021	10:01:47	0	0.0	469.0	8.38	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
4.9			8.3	243.5	0.0	27.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
1900	1400	377	1900			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
%	240.0 bbl	208.0 bbl	66 degF	Cement Circulated to Surface? [X]	Volume 72.0 bbl
				Washed Thru Perfs [ ]	To ft

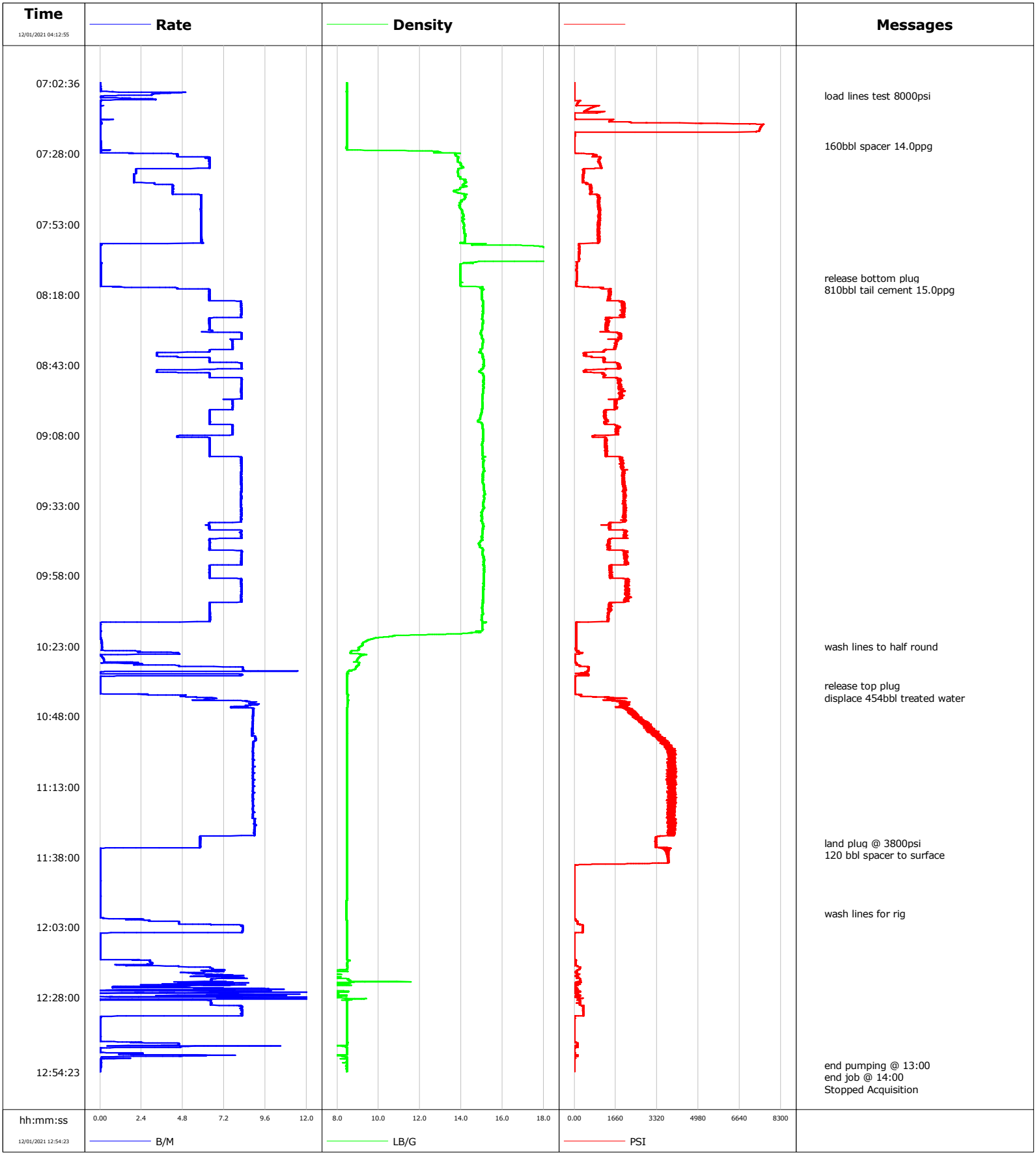
Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
BEN WALDEN	BRIAN FOOTE	[ ] -	[X] -

Schlumberger

Cementing Job Report

CemCAT v1.8

Well	OE Burge 5H	**Client**	Southwestern
Field	Kausooth	**SIR No.**	EN82-01903
Engineer	Danny Cover	**Job Type**	production
Country	United States	**Job Date**	12-01-2021



Cementing

PRD Post Job Plot

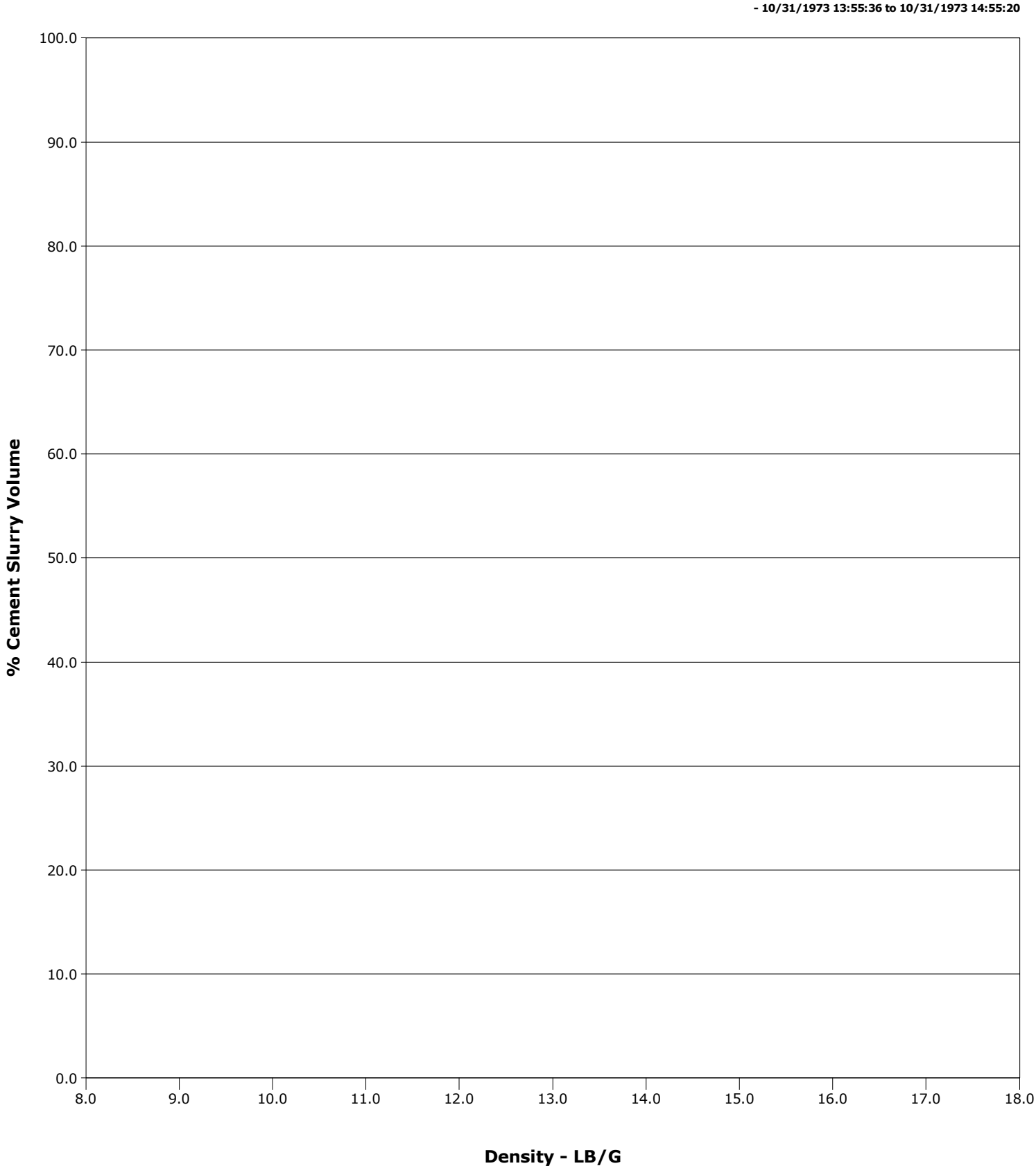


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Schlumberger

Cementing Qa/Qc Density Report

Well	OE Burge 5H	**Client**	Southwestern
Field	Kausooth	**SIR No.**	EN82-01903
Engineer	Danny Cover	**Job Type**	production
Country	United States	**Job Date**	12-01-2021



Schlumberger Cementing Service Report

Customer	Job Number
Southwestern	EN82-01903

Well	Location (legal)	Schlumberger Location	Job Start
OE Burge 5H 5h	47-051-02388-00-00	Weston	Dec/01/2021

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
Kausooth		deg	8.5 in	20496.0 ft	6319.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
Marshall	West Virginia	8500 psi	137 degF	137 degF	lb/gal
Well Master 0066447464	**API/UWI** 47-051-02388-00-00				

Rig Name	Drilled For	Service Via
sdc 41	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
	lb/gal	cP

Service Line	Job Type
Cementing	production

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Service Instructions

test lines 8000psi
160bbl apacer 14.0ppg
bottom plug
810bbl tail 15.0ppg
top plug
454bbl treated water displacement

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
2760.0	9.6	36.0	110	8RD
20496.0	5.5	20.0	110	BUTT

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	454.0 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	455.0 bbl	132.0 bbl	739.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement	Casing Tools	Squeeze Job
X	X		

Lift Pressure		Shoe Type	Float	Squeeze Type	
Pipe Rotated	X	Pipe Reciprocated		Shoe Depth	20496.0 ft	Tool Type	
No. Centralizers		Top Plugs	1	Bottom Plugs		Stage Tool Type		Tool Depth	ft
Cement Head Type	Single					Stage Tool Depth	ft	Tail Pipe Size	in
Job Scheduled For	Arrived on Location	Leave Location				Collar Type	Float	Tail Pipe Depth	ft
Dec/01/2021 02:00	Dec/01/2021 02:00	Dec/01/2021 14:00				Collar Depth	20453.0 ft	Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	04:12:55	0	0.0	0.00	0.0	Start Job @ 02:00
12/01/2021	04:13:25	0	0.0	0.00	0.0	
12/01/2021	04:13:55	0	0.0	0.00	0.0	
12/01/2021	04:14:25	0	0.0	0.00	0.0	
12/01/2021	04:14:55	0	0.0	0.00	0.0	
12/01/2021	04:15:25	0	0.0	0.00	0.0	
12/01/2021	04:15:55	0	0.0	0.00	0.0	
12/01/2021	04:16:25	0	0.0	0.00	0.0	
12/01/2021	04:16:55	0	0.0	0.00	0.0	
12/01/2021	04:17:25	0	0.0	0.00	0.0	
12/01/2021	04:17:55	0	0.0	0.00	0.0	
12/01/2021	04:18:25	0	0.0	0.00	0.0	
12/01/2021	04:18:55	0	0.0	0.00	0.0	
12/01/2021	04:19:25	0	0.0	0.00	0.0	
12/01/2021	04:19:55	0	0.0	0.00	0.0	
12/01/2021	04:20:25	0	0.0	0.00	0.0	
12/01/2021	04:20:55	0	0.0	0.00	0.0	
12/01/2021	04:21:25	0	0.0	0.00	0.0	
12/01/2021	04:21:55	0	0.0	0.00	0.0	
12/01/2021	04:22:25	0	0.0	0.00	0.0	
12/01/2021	04:22:55	0	0.0	0.00	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	04:23:55	0	0.0	0.00	0.0	
12/01/2021	04:24:25	0	0.0	0.00	0.0	
12/01/2021	04:24:55	0	0.0	0.00	0.0	
12/01/2021	04:25:25	0	0.0	0.00	0.0	
12/01/2021	04:25:55	0	0.0	0.00	0.0	
12/01/2021	04:26:25	0	0.0	0.00	0.0	
12/01/2021	04:26:55	0	0.0	0.00	0.0	
12/01/2021	04:27:25	0	0.0	0.00	0.0	
12/01/2021	04:27:55	0	0.0	0.00	0.0	
12/01/2021	04:28:25	0	0.0	0.00	0.0	
12/01/2021	04:29:25	0	0.0	0.00	0.0	
12/01/2021	04:29:55	0	0.0	0.00	0.0	
12/01/2021	04:30:25	0	0.0	0.00	0.0	
12/01/2021	04:30:55	0	0.0	0.00	0.0	
12/01/2021	04:31:25	0	0.0	0.00	0.0	
12/01/2021	04:31:55	0	0.0	0.00	0.0	
12/01/2021	04:32:25	0	0.0	0.00	0.0	
12/01/2021	04:32:55	0	0.0	0.00	0.0	
12/01/2021	04:33:25	0	0.0	0.00	0.0	
12/01/2021	04:33:55	0	0.0	0.00	0.0	
12/01/2021	04:34:25	0	0.0	0.00	0.0	
12/01/2021	04:34:55	0	0.0	0.00	0.0	
12/01/2021	04:35:25	0	0.0	0.00	0.0	
12/01/2021	04:35:55	0	0.0	0.00	0.0	
12/01/2021	04:36:25	0	0.0	0.00	0.0	
12/01/2021	04:36:55	0	0.0	0.00	0.0	
12/01/2021	04:37:25	0	0.0	0.00	0.0	
12/01/2021	04:37:55	0	0.0	0.00	0.0	
12/01/2021	04:38:25	0	0.0	0.00	0.0	
12/01/2021	04:38:55	0	0.0	0.00	0.0	
12/01/2021	04:39:25	0	0.0	0.00	0.0	
12/01/2021	04:39:55	0	0.0	0.00	0.0	
12/01/2021	04:40:25	0	0.0	0.00	0.0	
12/01/2021	04:40:55	0	0.0	0.00	0.0	
12/01/2021	04:41:55	0	0.0	0.00	0.0	
12/01/2021	04:42:25	0	0.0	0.00	0.0	
12/01/2021	04:42:55	0	0.0	0.00	0.0	
12/01/2021	04:43:55	0	0.0	0.00	0.0	
12/01/2021	04:44:25	0	0.0	0.00	0.0	
12/01/2021	04:44:55	0	0.0	0.00	0.0	
12/01/2021	04:45:25	0	0.0	0.00	0.0	
12/01/2021	04:45:55	0	0.0	0.00	0.0	
12/01/2021	04:46:25	0	0.0	0.00	0.0	
12/01/2021	04:46:55	0	0.0	0.00	0.0	
12/01/2021	04:48:55	0	0.0	0.00	0.0	
12/01/2021	04:49:25	0	0.0	0.00	0.0	
12/01/2021	04:49:55	0	0.0	0.00	0.0	
12/01/2021	04:50:25	0	0.0	0.00	0.0	
12/01/2021	04:50:55	0	0.0	0.00	0.0	
12/01/2021	04:51:25	0	0.0	0.00	0.0	
12/01/2021	04:51:55	0	0.0	0.00	0.0	
12/01/2021	04:52:25	0	0.0	0.00	0.0	
12/01/2021	04:52:55	0	0.0	0.00	0.0	
12/01/2021	04:53:25	0	0.0	0.00	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	04:54:25	0	0.0	0.00	0.0	
12/01/2021	04:54:55	0	0.0	0.00	0.0	
12/01/2021	04:55:25	0	0.0	0.00	0.0	
12/01/2021	04:55:55	0	0.0	0.00	0.0	
12/01/2021	04:56:25	0	0.0	0.00	0.0	
12/01/2021	04:56:55	0	0.0	0.00	0.0	
12/01/2021	04:57:25	0	0.0	0.00	0.0	
12/01/2021	04:57:55	0	0.0	0.00	0.0	
12/01/2021	04:58:25	0	0.0	0.00	0.0	
12/01/2021	04:58:55	0	0.0	0.00	0.0	
12/01/2021	04:59:25	0	0.0	0.00	0.0	
12/01/2021	04:59:55	0	0.0	0.00	0.0	
12/01/2021	05:00:25	0	0.0	0.00	0.0	
12/01/2021	05:01:55	0	0.0	0.00	0.0	
12/01/2021	05:02:25	0	0.0	0.00	0.0	
12/01/2021	05:02:55	0	0.0	0.00	0.0	
12/01/2021	05:03:25	0	0.0	0.00	0.0	
12/01/2021	05:03:55	0	0.0	0.00	0.0	
12/01/2021	05:04:25	0	0.0	0.00	0.0	
12/01/2021	05:04:55	0	0.0	0.00	0.0	
12/01/2021	05:05:25	0	0.0	0.00	0.0	
12/01/2021	05:05:55	0	0.0	0.00	0.0	
12/01/2021	05:06:25	0	0.0	0.00	0.0	
12/01/2021	05:06:55	0	0.0	0.00	0.0	
12/01/2021	05:07:25	0	0.0	0.00	0.0	
12/01/2021	05:07:55	0	0.0	0.00	0.0	
12/01/2021	05:08:25	0	0.0	0.00	0.0	
12/01/2021	05:08:55	0	0.0	0.00	0.0	
12/01/2021	05:09:25	0	0.0	0.00	0.0	
12/01/2021	05:09:55	0	0.0	0.00	0.0	
12/01/2021	05:10:25	0	0.0	0.00	0.0	
12/01/2021	05:10:55	0	0.0	0.00	0.0	
12/01/2021	05:11:25	0	0.0	0.00	0.0	
12/01/2021	05:11:55	0	0.0	0.00	0.0	
12/01/2021	05:12:25	0	0.0	0.00	0.0	
12/01/2021	05:12:55	0	0.0	0.00	0.0	
12/01/2021	05:13:25	0	0.0	0.00	0.0	
12/01/2021	05:13:55	0	0.0	0.00	0.0	
12/01/2021	05:14:25	0	0.0	0.00	0.0	
12/01/2021	05:14:55	0	0.0	0.00	0.0	
12/01/2021	05:15:25	0	0.0	0.00	0.0	
12/01/2021	05:15:55	0	0.0	0.00	0.0	
12/01/2021	05:16:25	0	0.0	0.00	0.0	
12/01/2021	05:16:55	0	0.0	0.00	0.0	
12/01/2021	05:17:25	0	0.0	0.00	0.0	
12/01/2021	05:17:55	0	0.0	0.00	0.0	
12/01/2021	05:18:55	0	0.0	0.00	0.0	
12/01/2021	05:19:25	0	0.0	0.00	0.0	
12/01/2021	05:19:55	0	0.0	0.00	0.0	
12/01/2021	05:20:25	0	0.0	0.00	0.0	
12/01/2021	05:20:55	0	0.0	0.00	0.0	
12/01/2021	05:21:25	0	0.0	0.00	0.0	
12/01/2021	05:21:55	0	0.0	0.00	0.0	
12/01/2021	05:22:25	0	0.0	0.00	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	05:23:25	0	0.0	0.00	0.0	
12/01/2021	05:23:55	0	0.0	0.00	0.0	
12/01/2021	05:24:25	0	0.0	0.00	0.0	
12/01/2021	05:24:55	0	0.0	0.00	0.0	
12/01/2021	05:25:25	0	0.0	0.00	0.0	
12/01/2021	05:25:55	0	0.0	0.00	0.0	
12/01/2021	05:26:25	0	0.0	0.00	0.0	
12/01/2021	05:26:55	0	0.0	0.00	0.0	
12/01/2021	05:27:25	0	0.0	0.00	0.0	
12/01/2021	05:27:55	0	0.0	0.00	0.0	
12/01/2021	05:28:25	0	0.0	0.00	0.0	
12/01/2021	05:28:55	0	0.0	0.00	0.0	
12/01/2021	05:29:25	0	0.0	0.00	0.0	
12/01/2021	05:29:55	0	0.0	0.00	0.0	
12/01/2021	05:30:25	0	0.0	0.00	0.0	
12/01/2021	05:30:55	0	0.0	0.00	0.0	
12/01/2021	05:31:25	0	0.0	0.00	0.0	
12/01/2021	05:31:55	0	0.0	0.00	0.0	
12/01/2021	05:32:25	0	0.0	0.00	0.0	
12/01/2021	05:32:55	0	0.0	0.00	0.0	
12/01/2021	05:33:25	0	0.0	0.00	0.0	
12/01/2021	05:33:55	0	0.0	0.00	0.0	
12/01/2021	05:34:25	0	0.0	0.00	0.0	
12/01/2021	05:34:55	0	0.0	0.00	0.0	
12/01/2021	05:35:25	0	0.0	0.00	0.0	
12/01/2021	05:35:55	0	0.0	0.00	0.0	
12/01/2021	05:36:25	0	0.0	0.00	0.0	
12/01/2021	05:36:55	0	0.0	0.00	0.0	
12/01/2021	05:37:25	0	0.0	0.00	0.0	
12/01/2021	05:37:55	0	0.0	0.00	0.0	
12/01/2021	05:38:25	0	0.0	0.00	0.0	
12/01/2021	05:38:55	0	0.0	0.00	0.0	
12/01/2021	05:39:25	0	0.0	0.00	0.0	
12/01/2021	05:39:55	0	0.0	0.00	0.0	
12/01/2021	05:40:25	0	0.0	0.00	0.0	
12/01/2021	05:40:55	0	0.0	0.00	0.0	
12/01/2021	05:41:25	0	0.0	0.00	0.0	
12/01/2021	05:41:55	0	0.0	0.00	0.0	
12/01/2021	05:42:25	0	0.0	0.00	0.0	
12/01/2021	05:42:55	0	0.0	0.00	0.0	
12/01/2021	05:43:25	0	0.0	0.00	0.0	
12/01/2021	05:43:55	0	0.0	0.00	0.0	
12/01/2021	05:44:25	0	0.0	0.00	0.0	
12/01/2021	05:44:55	0	0.0	0.00	0.0	
12/01/2021	05:45:25	0	0.0	0.00	0.0	
12/01/2021	05:45:55	0	0.0	0.00	0.0	
12/01/2021	05:46:25	0	0.0	0.00	0.0	
12/01/2021	05:46:55	0	0.0	0.00	0.0	
12/01/2021	05:47:25	0	0.0	0.00	0.0	
12/01/2021	05:47:55	0	0.0	0.00	0.0	
12/01/2021	05:48:25	0	0.0	0.00	0.0	
12/01/2021	05:48:55	0	0.0	0.00	0.0	
12/01/2021	05:49:25	0	0.0	0.00	0.0	
12/01/2021	05:49:55	0	0.0	0.00	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	05:50:55	0	0.0	0.00	0.0	
12/01/2021	05:51:25	0	0.0	0.00	0.0	
12/01/2021	05:51:55	0	0.0	0.00	0.0	
12/01/2021	05:52:25	0	0.0	0.00	0.0	
12/01/2021	05:52:55	0	0.0	0.00	0.0	
12/01/2021	05:53:55	0	0.0	0.00	0.0	
12/01/2021	05:54:25	0	0.0	0.00	0.0	
12/01/2021	05:54:55	0	0.0	0.00	0.0	
12/01/2021	05:55:25	0	0.0	0.00	0.0	
12/01/2021	05:55:55	0	0.0	0.00	0.0	
12/01/2021	05:56:25	0	0.0	0.00	0.0	
12/01/2021	05:56:55	0	0.0	0.00	0.0	
12/01/2021	05:57:25	0	0.0	0.00	0.0	
12/01/2021	05:57:55	0	0.0	0.00	0.0	
12/01/2021	05:58:25	0	0.0	0.00	0.0	
12/01/2021	05:58:55	0	0.0	0.00	0.0	
12/01/2021	05:59:25	0	0.0	0.00	0.0	
12/01/2021	05:59:55	0	0.0	0.00	0.0	
12/01/2021	06:00:25	0	0.0	0.00	0.0	
12/01/2021	06:00:55	0	0.0	0.00	0.0	
12/01/2021	06:01:25	0	0.0	0.00	0.0	
12/01/2021	06:01:55	0	0.0	0.00	0.0	
12/01/2021	06:02:25	0	0.0	0.00	0.0	
12/01/2021	06:02:55	0	0.0	0.00	0.0	
12/01/2021	06:03:25	0	0.0	0.00	0.0	
12/01/2021	06:03:55	0	0.0	0.00	0.0	
12/01/2021	06:04:25	0	0.0	0.00	0.0	
12/01/2021	06:04:55	0	0.0	0.00	0.0	
12/01/2021	06:05:25	0	0.0	0.00	0.0	
12/01/2021	06:05:55	0	0.0	0.00	0.0	
12/01/2021	06:06:25	0	0.0	0.00	0.0	
12/01/2021	06:06:55	0	0.0	0.00	0.0	
12/01/2021	06:07:25	0	0.0	0.00	0.0	
12/01/2021	06:07:55	0	0.0	0.00	0.0	
12/01/2021	06:08:25	0	0.0	0.00	0.0	
12/01/2021	06:08:55	0	0.0	0.00	0.0	
12/01/2021	06:09:25	0	0.0	0.00	0.0	
12/01/2021	06:09:55	0	0.0	0.00	0.0	
12/01/2021	06:10:25	0	0.0	0.00	0.0	
12/01/2021	06:10:55	0	0.0	0.00	0.0	
12/01/2021	06:11:25	0	0.0	0.00	0.0	
12/01/2021	06:11:55	0	0.0	0.00	0.0	
12/01/2021	06:12:25	0	0.0	0.00	0.0	
12/01/2021	06:12:55	0	0.0	0.00	0.0	
12/01/2021	06:13:25	0	0.0	0.00	0.0	
12/01/2021	06:13:55	0	0.0	0.00	0.0	
12/01/2021	06:14:25	0	0.0	0.00	0.0	
12/01/2021	06:14:55	0	0.0	0.00	0.0	
12/01/2021	06:15:25	0	0.0	0.00	0.0	
12/01/2021	06:15:55	0	0.0	0.00	0.0	
12/01/2021	06:16:25	0	0.0	0.00	0.0	
12/01/2021	06:16:55	0	0.0	0.00	0.0	
12/01/2021	06:17:25	0	0.0	0.00	0.0	
12/01/2021	06:17:55	0	0.0	0.00	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	06:18:55	0	0.0	0.00	0.0	
12/01/2021	06:19:25	0	0.0	0.00	0.0	
12/01/2021	06:19:55	0	0.0	0.00	0.0	
12/01/2021	06:20:25	0	0.0	0.00	0.0	
12/01/2021	06:20:55	0	0.0	0.00	0.0	
12/01/2021	06:21:25	0	0.0	0.00	0.0	
12/01/2021	06:21:55	0	0.0	0.00	0.0	
12/01/2021	06:22:25	0	0.0	0.00	0.0	
12/01/2021	06:22:55	0	0.0	0.00	0.0	
12/01/2021	06:23:25	0	0.0	0.00	0.0	
12/01/2021	06:23:55	0	0.0	0.00	0.0	
12/01/2021	06:24:25	0	0.0	0.00	0.0	
12/01/2021	06:25:55	0	0.0	0.00	0.0	
12/01/2021	06:26:25	0	0.0	0.00	0.0	
12/01/2021	06:26:55	0	0.0	0.00	0.0	
12/01/2021	06:27:25	0	0.0	0.00	0.0	
12/01/2021	06:27:55	0	0.0	0.00	0.0	
12/01/2021	06:28:55	0	0.0	0.00	0.0	
12/01/2021	06:29:25	0	0.0	0.00	0.0	
12/01/2021	06:29:55	0	0.0	0.00	0.0	
12/01/2021	06:30:25	0	0.0	0.00	0.0	
12/01/2021	06:30:55	0	0.0	0.00	0.0	
12/01/2021	06:31:25	0	0.0	0.00	0.0	
12/01/2021	06:31:55	0	0.0	0.00	0.0	
12/01/2021	06:32:25	0	0.0	0.00	0.0	
12/01/2021	06:32:55	0	0.0	0.00	0.0	
12/01/2021	06:33:25	0	0.0	0.00	0.0	
12/01/2021	06:33:55	0	0.0	0.00	0.0	
12/01/2021	06:34:25	0	0.0	0.00	0.0	
12/01/2021	06:34:55	0	0.0	0.00	0.0	
12/01/2021	06:35:25	0	0.0	0.00	0.0	
12/01/2021	06:35:55	0	0.0	0.00	0.0	
12/01/2021	06:36:25	0	0.0	0.00	0.0	
12/01/2021	06:36:55	0	0.0	0.00	0.0	
12/01/2021	06:37:25	0	0.0	0.00	0.0	
12/01/2021	06:37:55	0	0.0	0.00	0.0	
12/01/2021	06:38:25	0	0.0	0.00	0.0	
12/01/2021	06:38:55	0	0.0	0.00	0.0	
12/01/2021	06:39:25	0	0.0	0.00	0.0	
12/01/2021	06:39:55	0	0.0	0.00	0.0	
12/01/2021	06:40:25	0	0.0	0.00	0.0	
12/01/2021	06:40:55	0	0.0	0.00	0.0	
12/01/2021	06:41:25	0	0.0	0.00	0.0	
12/01/2021	06:41:55	0	0.0	0.00	0.0	
12/01/2021	06:42:25	0	0.0	0.00	0.0	
12/01/2021	06:42:55	0	0.0	0.00	0.0	
12/01/2021	06:43:25	0	0.0	0.00	0.0	
12/01/2021	06:43:55	0	0.0	0.00	0.0	
12/01/2021	06:44:25	0	0.0	0.00	0.0	
12/01/2021	06:44:55	0	0.0	0.00	0.0	
12/01/2021	06:45:25	0	0.0	0.00	0.0	
12/01/2021	06:45:55	0	0.0	0.00	0.0	
12/01/2021	06:46:25	0	0.0	0.00	0.0	
12/01/2021	06:46:55	0	0.0	0.00	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	06:47:55	0	0.0	0.00	0.0	
12/01/2021	06:48:25	0	0.0	0.00	0.0	
12/01/2021	06:48:55	0	0.0	0.00	0.0	
12/01/2021	06:50:25	0	0.0	0.00	0.0	
12/01/2021	06:50:55	0	0.0	0.00	0.0	
12/01/2021	06:51:25	0	0.0	0.00	0.0	
12/01/2021	06:51:55	0	0.0	0.00	0.0	
12/01/2021	06:52:25	0	0.0	0.00	0.0	
12/01/2021	06:52:55	0	0.0	0.00	0.0	
12/01/2021	06:53:25	0	0.0	0.00	0.0	
12/01/2021	06:53:55	0	0.0	0.00	0.0	
12/01/2021	06:54:25	0	0.0	0.00	0.0	
12/01/2021	06:54:55	0	0.0	0.00	0.0	
12/01/2021	06:55:25	0	0.0	0.00	0.0	
12/01/2021	06:55:55	0	0.0	0.00	0.0	
12/01/2021	06:56:55	0	0.0	0.00	0.0	
12/01/2021	06:57:25	0	0.0	0.00	0.0	
12/01/2021	06:57:55	0	0.0	0.00	0.0	
12/01/2021	06:58:25	0	0.0	0.00	0.0	
12/01/2021	06:58:55	0	0.0	0.00	0.0	
12/01/2021	06:59:25	0	0.0	0.00	0.0	
12/01/2021	06:59:55	0	0.0	0.00	0.0	
12/01/2021	07:00:25	0	0.0	0.00	0.0	
12/01/2021	07:00:55	0	0.0	0.00	0.0	
12/01/2021	07:01:15	0	0.0	0.00	0.0	Stopped Acquisition
12/01/2021	07:02:25	0	0.0	0.00	0.0	
12/01/2021	07:02:55	0	0.0	0.00	0.0	
12/01/2021	07:03:55	0	0.0	0.00	0.0	
12/01/2021	07:04:25	0	0.0	0.00	0.0	
12/01/2021	07:04:55	0	0.0	0.00	0.0	
12/01/2021	07:05:25	0	0.0	0.00	0.0	
12/01/2021	07:05:55	0	0.0	0.00	0.0	
12/01/2021	07:06:25	0	0.0	0.00	0.0	
12/01/2021	07:06:55	0	0.0	0.00	0.0	
12/01/2021	07:07:00	0	0.0	0.00	0.0	load lines test 8000psi
12/01/2021	07:07:25	0	0.1	0.00	0.0	
12/01/2021	07:07:55	0	0.0	0.00	0.0	
12/01/2021	07:08:25	0	3.1	0.00	0.0	
12/01/2021	07:08:55	0	0.1	0.00	0.0	
12/01/2021	07:09:25	165	0.0	8.46	0.0	
12/01/2021	07:09:55	126	0.0	8.46	0.0	
12/01/2021	07:10:25	95	0.0	8.46	0.0	
12/01/2021	07:10:55	918	0.0	8.47	0.0	
12/01/2021	07:11:25	715	0.0	8.46	0.0	
12/01/2021	07:11:55	586	0.0	8.46	0.0	
12/01/2021	07:12:25	478	0.0	8.46	0.0	
12/01/2021	07:12:55	1178	0.0	8.46	0.0	
12/01/2021	07:13:25	50	0.0	8.46	0.0	
12/01/2021	07:13:55	-2	0.0	8.46	0.0	
12/01/2021	07:14:25	-3	0.0	8.46	0.0	
12/01/2021	07:14:55	-6	0.0	8.46	0.0	
12/01/2021	07:15:25	-6	0.0	8.46	0.0	
12/01/2021	07:15:55	1479	0.0	8.46	0.0	
12/01/2021	07:16:25	1397	0.0	8.46	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	07:17:25	7590	0.0	8.46	0.0	
12/01/2021	07:17:55	7527	0.0	8.46	0.0	
12/01/2021	07:18:25	7485	0.0	8.46	0.0	
12/01/2021	07:18:55	7454	0.0	8.46	0.0	
12/01/2021	07:19:25	7431	0.0	8.46	0.0	
12/01/2021	07:19:55	7405	0.0	8.46	0.0	
12/01/2021	07:20:25	22	0.0	8.46	0.0	
12/01/2021	07:20:55	24	0.0	8.46	0.0	
12/01/2021	07:21:25	19	0.0	8.46	0.0	
12/01/2021	07:21:55	19	0.0	8.46	0.0	
12/01/2021	07:22:25	18	0.0	8.46	0.0	
12/01/2021	07:22:55	13	0.0	8.46	0.0	
12/01/2021	07:23:25	13	0.0	8.46	0.0	
12/01/2021	07:23:55	10	0.0	8.46	0.0	
12/01/2021	07:24:25	13	0.0	8.46	0.0	
12/01/2021	07:24:55	13	0.0	8.46	0.0	
12/01/2021	07:25:00	12	0.0	8.46	0.0	160bbl spacer 14.0ppg
12/01/2021	07:25:25	5	0.0	8.46	0.0	
12/01/2021	07:25:55	3	0.1	8.45	0.0	
12/01/2021	07:26:25	8	0.0	8.46	0.0	
12/01/2021	07:26:55	5	0.0	12.39	0.0	
12/01/2021	07:27:25	11	0.0	13.01	0.0	
12/01/2021	07:27:55	679	4.5	13.74	0.0	
12/01/2021	07:28:25	912	4.5	13.72	0.0	
12/01/2021	07:28:55	731	4.5	13.82	0.0	
12/01/2021	07:29:25	1029	6.2	13.85	0.0	
12/01/2021	07:29:55	998	6.3	13.81	0.0	
12/01/2021	07:30:25	993	6.4	13.82	0.0	
12/01/2021	07:30:55	1006	6.4	13.87	0.0	
12/01/2021	07:31:25	1035	6.4	13.97	0.0	
12/01/2021	07:31:55	1055	6.4	13.97	0.0	
12/01/2021	07:32:25	1059	6.4	14.05	0.0	
12/01/2021	07:32:55	1085	6.3	14.07	0.0	
12/01/2021	07:33:25	373	2.1	13.85	0.0	
12/01/2021	07:33:55	386	2.1	13.84	0.0	
12/01/2021	07:34:25	385	2.1	13.83	0.0	
12/01/2021	07:34:55	372	2.1	13.84	0.0	
12/01/2021	07:35:25	360	2.0	13.85	0.0	
12/01/2021	07:35:55	359	2.0	13.87	0.0	
12/01/2021	07:36:25	350	2.0	13.93	0.0	
12/01/2021	07:36:55	354	2.0	14.01	0.0	
12/01/2021	07:37:25	357	2.0	14.15	0.0	
12/01/2021	07:37:55	351	1.9	14.23	0.0	
12/01/2021	07:38:55	640	4.2	14.08	0.0	
12/01/2021	07:39:25	626	4.2	14.27	0.0	
12/01/2021	07:39:55	699	4.2	14.00	0.0	
12/01/2021	07:40:25	660	4.2	13.94	0.0	
12/01/2021	07:40:55	647	4.2	13.71	0.0	
12/01/2021	07:41:25	654	4.2	13.68	0.0	
12/01/2021	07:41:55	623	4.2	13.90	0.0	
12/01/2021	07:42:25	938	5.8	14.28	0.0	
12/01/2021	07:42:55	930	5.9	14.16	0.0	
12/01/2021	07:43:25	973	5.9	14.19	0.0	
12/01/2021	07:43:55	1015	5.9	14.17	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	07:44:55	972	5.9	14.02	0.0	
12/01/2021	07:45:25	972	5.9	13.93	0.0	
12/01/2021	07:45:55	985	5.9	13.95	0.0	
12/01/2021	07:46:25	989	5.9	13.92	0.0	
12/01/2021	07:46:55	1026	5.9	13.91	0.0	
12/01/2021	07:47:25	1043	5.9	13.96	0.0	
12/01/2021	07:47:55	1005	5.9	14.02	0.0	
12/01/2021	07:48:25	1011	5.9	14.04	0.0	
12/01/2021	07:48:55	1003	5.9	14.05	0.0	
12/01/2021	07:49:25	1002	5.9	14.08	0.0	
12/01/2021	07:49:55	1010	5.9	14.10	0.0	
12/01/2021	07:50:25	972	5.9	14.08	0.0	
12/01/2021	07:50:55	1016	5.9	14.08	0.0	
12/01/2021	07:51:25	1035	5.9	14.07	0.0	
12/01/2021	07:51:55	991	5.9	14.07	0.0	
12/01/2021	07:52:25	964	5.9	14.10	0.0	
12/01/2021	07:52:55	966	5.9	14.13	0.0	
12/01/2021	07:53:25	979	5.9	14.13	0.0	
12/01/2021	07:53:55	988	5.9	14.12	0.0	
12/01/2021	07:54:25	984	5.9	14.11	0.0	
12/01/2021	07:54:55	979	5.9	14.15	0.0	
12/01/2021	07:55:25	995	5.9	14.13	0.0	
12/01/2021	07:55:55	994	5.9	14.15	0.0	
12/01/2021	07:56:25	943	5.9	14.20	0.0	
12/01/2021	07:56:55	979	5.9	14.17	0.0	
12/01/2021	07:57:25	990	5.9	14.19	0.0	
12/01/2021	07:57:55	1003	5.9	14.18	0.0	
12/01/2021	07:58:25	951	5.9	14.18	0.0	
12/01/2021	07:58:55	1024	5.9	14.17	0.0	
12/01/2021	07:59:25	986	5.9	14.17	0.0	
12/01/2021	07:59:55	182	0.0	15.18	0.0	
12/01/2021	08:00:25	165	0.0	16.36	0.0	
12/01/2021	08:00:55	201	0.0	17.90	0.0	
12/01/2021	08:01:25	170	0.0	18.08	0.0	
12/01/2021	08:01:55	206	0.0	18.13	0.0	
12/01/2021	08:02:25	202	0.0	18.17	0.0	
12/01/2021	08:02:55	176	0.0	18.18	0.0	
12/01/2021	08:03:25	203	0.0	18.18	0.0	
12/01/2021	08:03:55	168	0.0	18.18	0.0	
12/01/2021	08:04:25	166	0.0	18.17	0.0	
12/01/2021	08:04:55	165	0.0	18.16	0.0	
12/01/2021	08:05:25	196	0.0	18.16	0.0	
12/01/2021	08:05:55	182	0.0	18.16	0.0	
12/01/2021	08:06:25	82	0.0	14.70	0.0	
12/01/2021	08:06:55	80	0.1	14.28	0.0	
12/01/2021	08:07:25	82	0.1	13.96	0.0	
12/01/2021	08:07:55	81	0.0	13.97	0.0	
12/01/2021	08:08:25	81	0.0	13.96	0.0	
12/01/2021	08:08:55	82	0.0	13.96	0.0	
12/01/2021	08:09:25	77	0.0	13.96	0.0	
12/01/2021	08:09:55	83	0.0	13.97	0.0	
12/01/2021	08:10:25	82	0.0	13.97	0.0	
12/01/2021	08:10:55	82	0.0	13.97	0.0	
12/01/2021	08:11:25	84	0.0	13.97	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	08:12:00	82	0.0	13.97	0.0	release bottom plug
12/01/2021	08:12:25	81	0.0	13.97	0.0	
12/01/2021	08:12:55	83	0.0	13.97	0.0	
12/01/2021	08:13:00	83	0.1	13.97	0.0	810bbl tail cement 15.0ppg
12/01/2021	08:13:25	75	0.0	13.97	0.0	
12/01/2021	08:13:55	80	0.0	13.97	0.0	
12/01/2021	08:14:25	78	0.0	13.97	0.0	
12/01/2021	08:14:55	82	0.0	13.97	0.0	
12/01/2021	08:15:25	1015	3.5	14.92	0.0	
12/01/2021	08:15:55	1427	5.2	15.01	0.0	
12/01/2021	08:16:25	1422	6.3	15.02	0.0	
12/01/2021	08:16:55	1427	6.3	14.98	0.0	
12/01/2021	08:17:25	1365	6.3	14.99	0.0	
12/01/2021	08:17:55	1489	6.3	15.00	0.0	
12/01/2021	08:18:25	1420	6.3	15.00	0.0	
12/01/2021	08:18:55	1393	6.3	15.00	0.0	
12/01/2021	08:19:25	1409	6.3	15.00	0.0	
12/01/2021	08:19:55	1395	6.3	15.01	0.0	
12/01/2021	08:20:25	1878	8.2	15.06	0.0	
12/01/2021	08:20:55	2006	8.2	15.07	0.0	
12/01/2021	08:21:25	2010	8.2	15.06	0.0	
12/01/2021	08:21:55	2028	8.2	15.04	0.0	
12/01/2021	08:22:25	1992	8.2	15.05	0.0	
12/01/2021	08:22:55	2002	8.2	15.07	0.0	
12/01/2021	08:23:25	1995	8.2	15.06	0.0	
12/01/2021	08:23:55	2038	8.2	15.04	0.0	
12/01/2021	08:24:25	1925	8.2	15.06	0.0	
12/01/2021	08:24:55	1983	8.2	15.04	0.0	
12/01/2021	08:25:25	1810	8.2	15.04	0.0	
12/01/2021	08:25:55	2002	8.2	15.02	0.0	
12/01/2021	08:26:25	1392	6.3	15.01	0.0	
12/01/2021	08:26:55	1338	6.3	15.02	0.0	
12/01/2021	08:27:25	1334	6.3	15.07	0.0	
12/01/2021	08:28:25	1278	6.3	15.04	0.0	
12/01/2021	08:28:55	1299	6.3	15.02	0.0	
12/01/2021	08:29:25	1294	6.3	15.01	0.0	
12/01/2021	08:29:55	1266	6.3	15.01	0.0	
12/01/2021	08:30:25	1341	6.3	15.01	0.0	
12/01/2021	08:30:55	1368	6.5	14.97	0.0	
12/01/2021	08:31:25	1736	8.1	14.95	0.0	
12/01/2021	08:31:55	1849	8.2	14.93	0.0	
12/01/2021	08:32:25	1843	8.2	14.98	0.0	
12/01/2021	08:32:55	1849	8.2	14.99	0.0	
12/01/2021	08:33:25	1858	8.2	14.99	0.0	
12/01/2021	08:33:55	1723	7.6	15.05	0.0	
12/01/2021	08:34:25	1726	7.7	15.07	0.0	
12/01/2021	08:34:55	1689	7.7	15.05	0.0	
12/01/2021	08:35:25	1653	7.7	15.03	0.0	
12/01/2021	08:35:55	1699	7.7	15.03	0.0	
12/01/2021	08:36:25	1639	7.7	15.01	0.0	
12/01/2021	08:36:55	1624	7.7	15.01	0.0	
12/01/2021	08:37:25	1610	7.7	14.93	0.0	
12/01/2021	08:37:55	1181	6.4	14.95	0.0	
12/01/2021	08:38:25	1163	6.3	14.88	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	08:39:25	486	3.3	15.04	0.0	
12/01/2021	08:39:55	663	3.7	15.05	0.0	
12/01/2021	08:40:25	1174	6.3	15.04	0.0	
12/01/2021	08:40:55	1224	6.3	15.07	0.0	
12/01/2021	08:41:25	1210	6.4	15.09	0.0	
12/01/2021	08:41:55	1173	6.3	15.09	0.0	
12/01/2021	08:42:25	1742	8.2	15.09	0.0	
12/01/2021	08:42:55	1805	8.2	15.07	0.0	
12/01/2021	08:43:25	1816	8.2	15.09	0.0	
12/01/2021	08:43:55	1843	8.2	15.05	0.0	
12/01/2021	08:44:25	1293	7.6	15.01	0.0	
12/01/2021	08:44:55	460	3.3	14.95	0.0	
12/01/2021	08:45:25	483	3.3	14.87	0.0	
12/01/2021	08:45:55	1135	6.3	15.00	0.0	
12/01/2021	08:46:25	1193	6.4	15.06	0.0	
12/01/2021	08:46:55	1199	6.4	15.08	0.0	
12/01/2021	08:47:25	1207	6.4	15.09	0.0	
12/01/2021	08:47:55	1760	8.2	15.09	0.0	
12/01/2021	08:48:25	1768	8.2	15.07	0.0	
12/01/2021	08:48:55	1776	8.2	15.07	0.0	
12/01/2021	08:49:25	1804	8.2	15.08	0.0	
12/01/2021	08:49:55	1792	8.2	15.07	0.0	
12/01/2021	08:50:25	1805	8.2	15.06	0.0	
12/01/2021	08:50:55	1887	8.2	15.08	0.0	
12/01/2021	08:51:25	1778	8.2	15.07	0.0	
12/01/2021	08:51:55	1928	8.2	15.06	0.0	
12/01/2021	08:52:25	1908	8.2	15.06	0.0	
12/01/2021	08:52:55	1814	8.2	15.05	0.0	
12/01/2021	08:53:25	1832	8.2	15.05	0.0	
12/01/2021	08:53:55	1867	8.2	15.04	0.0	
12/01/2021	08:54:25	1866	8.2	15.03	0.0	
12/01/2021	08:54:55	1926	8.2	15.03	0.0	
12/01/2021	08:55:25	1639	7.7	15.02	0.0	
12/01/2021	08:55:55	1608	7.7	15.02	0.0	
12/01/2021	08:56:25	1707	7.7	15.02	0.0	
12/01/2021	08:56:55	1637	7.7	15.02	0.0	
12/01/2021	08:57:25	1615	7.7	15.03	0.0	
12/01/2021	08:57:55	1625	7.7	15.03	0.0	
12/01/2021	08:58:25	1629	7.7	15.04	0.0	
12/01/2021	08:58:55	1377	6.9	14.98	0.0	
12/01/2021	08:59:25	1242	6.3	14.98	0.0	
12/01/2021	08:59:55	1280	6.4	14.99	0.0	
12/01/2021	09:00:25	1199	6.4	14.97	0.0	
12/01/2021	09:00:55	1204	6.4	14.94	0.0	
12/01/2021	09:01:25	1216	6.3	14.92	0.0	
12/01/2021	09:01:55	1225	6.4	14.91	0.0	
12/01/2021	09:02:25	1287	6.4	14.90	0.0	
12/01/2021	09:03:25	1257	6.4	14.92	0.0	
12/01/2021	09:03:55	1210	6.4	15.00	0.0	
12/01/2021	09:04:25	1675	7.7	15.02	0.0	
12/01/2021	09:04:55	1710	7.7	15.04	0.0	
12/01/2021	09:05:25	1685	7.7	15.04	0.0	
12/01/2021	09:05:55	1765	7.7	15.05	0.0	
12/01/2021	09:06:25	1694	7.7	15.05	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	09:07:25	1655	7.7	15.06	0.0	
12/01/2021	09:07:55	1663	7.7	15.06	0.0	
12/01/2021	09:08:25	752	4.5	15.06	0.0	
12/01/2021	09:08:55	1220	6.4	15.05	0.0	
12/01/2021	09:09:25	1262	6.4	15.05	0.0	
12/01/2021	09:09:55	1256	6.4	15.06	0.0	
12/01/2021	09:10:25	1243	6.4	15.04	0.0	
12/01/2021	09:10:55	1233	6.3	15.02	0.0	
12/01/2021	09:11:25	1254	6.3	15.00	0.0	
12/01/2021	09:11:55	1268	6.4	15.01	0.0	
12/01/2021	09:12:25	1329	6.3	15.04	0.0	
12/01/2021	09:12:55	1251	6.4	15.03	0.0	
12/01/2021	09:13:25	1263	6.4	15.03	0.0	
12/01/2021	09:13:55	1314	6.3	15.03	0.0	
12/01/2021	09:14:25	1241	6.4	15.05	0.0	
12/01/2021	09:14:55	1300	6.4	15.03	0.0	
12/01/2021	09:15:25	1295	6.4	15.05	0.0	
12/01/2021	09:15:55	1925	8.2	15.08	0.0	
12/01/2021	09:16:25	1921	8.2	15.02	0.0	
12/01/2021	09:16:55	1954	8.2	15.10	0.0	
12/01/2021	09:17:25	1860	8.2	15.07	0.0	
12/01/2021	09:17:55	1925	8.2	15.07	0.0	
12/01/2021	09:18:25	1903	8.2	15.07	0.0	
12/01/2021	09:18:55	1919	8.2	15.07	0.0	
12/01/2021	09:19:25	1890	8.2	15.07	0.0	
12/01/2021	09:19:55	1947	8.2	15.09	0.0	
12/01/2021	09:20:25	1965	8.2	15.09	0.0	
12/01/2021	09:20:55	1975	8.2	15.09	0.0	
12/01/2021	09:21:25	1941	8.2	15.06	0.0	
12/01/2021	09:21:55	1992	8.2	15.04	0.0	
12/01/2021	09:22:25	1946	8.2	15.05	0.0	
12/01/2021	09:22:55	1969	8.2	15.05	0.0	
12/01/2021	09:23:25	1958	8.2	15.04	0.0	
12/01/2021	09:23:55	1943	8.2	15.05	0.0	
12/01/2021	09:24:25	1933	8.2	15.03	0.0	
12/01/2021	09:24:55	1917	8.2	15.04	0.0	
12/01/2021	09:25:25	1987	8.2	15.07	0.0	
12/01/2021	09:25:55	2000	8.2	15.09	0.0	
12/01/2021	09:26:25	2011	8.2	15.09	0.0	
12/01/2021	09:26:55	2018	8.2	15.09	0.0	
12/01/2021	09:27:25	2042	8.2	15.09	0.0	
12/01/2021	09:27:55	1936	8.2	15.11	0.0	
12/01/2021	09:28:25	1973	8.2	15.13	0.0	
12/01/2021	09:28:55	2013	8.2	15.15	0.0	
12/01/2021	09:29:25	1988	8.2	15.09	0.0	
12/01/2021	09:29:55	2033	8.2	15.09	0.0	
12/01/2021	09:30:25	1979	8.2	15.10	0.0	
12/01/2021	09:30:55	1986	8.2	15.10	0.0	
12/01/2021	09:31:25	2002	8.2	15.08	0.0	
12/01/2021	09:31:55	1988	8.2	15.07	0.0	
12/01/2021	09:32:25	2018	8.2	15.07	0.0	
12/01/2021	09:32:55	2048	8.2	15.07	0.0	
12/01/2021	09:33:25	2028	8.2	15.07	0.0	
12/01/2021	09:33:55	1988	8.2	15.10	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	09:34:55	2009	8.2	15.03	0.0	
12/01/2021	09:35:25	1993	8.2	14.98	0.0	
12/01/2021	09:35:55	2002	8.2	14.99	0.0	
12/01/2021	09:36:25	1978	8.2	14.98	0.0	
12/01/2021	09:36:55	1989	8.2	15.00	0.0	
12/01/2021	09:37:25	2016	8.2	15.00	0.0	
12/01/2021	09:38:25	2002	8.2	14.96	0.0	
12/01/2021	09:38:55	2000	8.2	15.01	0.0	
12/01/2021	09:39:25	1410	6.3	15.06	0.0	
12/01/2021	09:39:55	1447	6.2	15.05	0.0	
12/01/2021	09:40:25	1438	6.3	15.08	0.0	
12/01/2021	09:40:55	1424	6.3	15.05	0.0	
12/01/2021	09:41:25	1398	6.3	15.05	0.0	
12/01/2021	09:41:55	2030	8.2	15.05	0.0	
12/01/2021	09:42:25	2098	8.2	15.03	0.0	
12/01/2021	09:42:55	2011	8.2	15.02	0.0	
12/01/2021	09:43:25	2025	8.2	15.00	0.0	
12/01/2021	09:43:55	2007	8.2	15.00	0.0	
12/01/2021	09:44:25	2026	8.2	15.04	0.0	
12/01/2021	09:44:55	1406	6.4	15.00	0.0	
12/01/2021	09:45:25	1384	6.3	15.00	0.0	
12/01/2021	09:45:55	1409	6.4	14.92	0.0	
12/01/2021	09:46:25	1400	6.4	14.86	0.0	
12/01/2021	09:46:55	1394	6.4	14.87	0.0	
12/01/2021	09:47:25	1438	6.4	14.90	0.0	
12/01/2021	09:47:55	1387	6.4	14.94	0.0	
12/01/2021	09:48:25	1402	6.4	15.03	0.0	
12/01/2021	09:48:55	1953	7.1	15.06	0.0	
12/01/2021	09:49:25	2006	8.2	15.04	0.0	
12/01/2021	09:49:55	2006	8.2	15.03	0.0	
12/01/2021	09:50:25	2037	8.2	15.02	0.0	
12/01/2021	09:50:55	2014	8.2	15.07	0.0	
12/01/2021	09:51:25	2073	8.2	15.08	0.0	
12/01/2021	09:51:55	2037	8.2	15.09	0.0	
12/01/2021	09:52:25	2094	8.2	15.09	0.0	
12/01/2021	09:52:55	2087	8.2	15.07	0.0	
12/01/2021	09:53:25	2019	8.2	15.09	0.0	
12/01/2021	09:53:55	2010	8.2	15.07	0.0	
12/01/2021	09:54:25	1463	6.3	15.10	0.0	
12/01/2021	09:54:55	1436	6.4	15.10	0.0	
12/01/2021	09:55:25	1423	6.4	15.09	0.0	
12/01/2021	09:55:55	1445	6.4	15.10	0.0	
12/01/2021	09:56:25	1442	6.4	15.10	0.0	
12/01/2021	09:56:55	1437	6.3	15.09	0.0	
12/01/2021	09:57:25	1433	6.4	15.08	0.0	
12/01/2021	09:57:55	1475	6.4	15.09	0.0	
12/01/2021	09:58:25	1439	6.4	15.08	0.0	
12/01/2021	09:58:55	1955	7.8	15.09	0.0	
12/01/2021	09:59:25	2222	8.2	15.08	0.0	
12/01/2021	09:59:55	2088	8.2	15.07	0.0	
12/01/2021	10:00:25	2085	8.2	15.09	0.0	
12/01/2021	10:00:55	2103	8.2	15.08	0.0	
12/01/2021	10:01:25	2035	8.2	15.08	0.0	
12/01/2021	10:01:55	2103	8.2	15.07	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	10:02:55	2079	8.2	15.07	0.0	
12/01/2021	10:03:25	2066	8.2	15.06	0.0	
12/01/2021	10:03:55	2165	8.2	15.06	0.0	
12/01/2021	10:04:25	2067	8.2	15.05	0.0	
12/01/2021	10:04:55	2085	8.2	15.06	0.0	
12/01/2021	10:05:25	2226	8.2	15.06	0.0	
12/01/2021	10:05:55	2042	8.2	15.06	0.0	
12/01/2021	10:06:25	2050	8.2	15.06	0.0	
12/01/2021	10:06:55	2022	8.2	15.05	0.0	
12/01/2021	10:07:25	1674	6.8	15.04	0.0	
12/01/2021	10:07:55	1407	6.4	15.04	0.0	
12/01/2021	10:08:25	1402	6.4	15.04	0.0	
12/01/2021	10:08:55	1398	6.4	15.04	0.0	
12/01/2021	10:09:25	1369	6.4	14.99	0.0	
12/01/2021	10:09:55	1414	6.4	15.02	0.0	
12/01/2021	10:10:25	1374	6.4	15.03	0.0	
12/01/2021	10:10:55	1364	6.4	15.05	0.0	
12/01/2021	10:11:25	1386	6.4	15.06	0.0	
12/01/2021	10:11:55	1362	6.4	15.00	0.0	
12/01/2021	10:12:25	1365	6.4	15.00	0.0	
12/01/2021	10:13:25	1376	6.4	15.00	0.0	
12/01/2021	10:13:55	1339	6.4	15.00	0.0	
12/01/2021	10:14:25	147	2.1	15.14	0.0	
12/01/2021	10:14:55	68	0.0	15.01	0.0	
12/01/2021	10:15:25	66	0.0	15.01	0.0	
12/01/2021	10:15:55	65	0.0	15.01	0.0	
12/01/2021	10:16:25	65	0.0	15.01	0.0	
12/01/2021	10:16:55	65	0.0	15.02	0.0	
12/01/2021	10:17:25	67	0.0	15.02	0.0	
12/01/2021	10:17:55	66	0.0	14.72	0.0	
12/01/2021	10:18:25	66	0.0	14.31	0.0	
12/01/2021	10:18:55	63	0.0	12.41	0.0	
12/01/2021	10:19:25	66	0.0	10.72	0.0	
12/01/2021	10:19:55	66	0.0	10.09	0.0	
12/01/2021	10:20:25	65	0.1	9.70	0.0	
12/01/2021	10:20:55	66	0.1	9.48	0.0	
12/01/2021	10:21:25	66	0.1	9.37	0.0	
12/01/2021	10:21:55	68	0.1	9.24	0.0	
12/01/2021	10:22:25	70	0.1	9.23	0.0	
12/01/2021	10:22:55	69	0.1	9.18	0.0	
12/01/2021	10:23:00	69	0.1	9.16	0.0	wash lines to half round
12/01/2021	10:23:25	65	0.1	9.06	0.0	
12/01/2021	10:23:55	61	0.1	9.03	0.0	
12/01/2021	10:24:25	65	0.1	9.03	0.0	
12/01/2021	10:24:55	101	2.3	8.66	0.0	
12/01/2021	10:25:25	320	4.5	8.64	0.0	
12/01/2021	10:25:55	26	3.2	9.18	0.0	
12/01/2021	10:26:25	23	0.1	9.16	0.0	
12/01/2021	10:26:55	23	0.1	9.06	0.0	
12/01/2021	10:27:25	23	0.2	9.00	0.0	
12/01/2021	10:27:55	24	0.2	8.96	0.0	
12/01/2021	10:28:25	24	0.2	8.94	0.0	
12/01/2021	10:28:55	64	0.3	9.06	0.0	
12/01/2021	10:29:25	102	2.4	9.03	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	10:30:25	567	8.2	8.93	0.0	
12/01/2021	10:30:55	570	8.3	8.91	0.0	
12/01/2021	10:31:25	566	8.3	8.79	0.0	
12/01/2021	10:31:55	535	8.7	8.57	0.0	
12/01/2021	10:32:25	460	0.0	8.48	0.0	
12/01/2021	10:32:55	573	7.7	8.53	0.0	
12/01/2021	10:33:25	553	8.2	8.47	0.0	
12/01/2021	10:33:55	35	0.0	8.47	0.0	
12/01/2021	10:34:25	33	0.0	8.47	0.0	
12/01/2021	10:34:55	32	0.0	8.47	0.0	
12/01/2021	10:35:25	30	0.0	8.47	0.0	
12/01/2021	10:35:55	27	0.0	8.47	0.0	
12/01/2021	10:36:25	28	0.0	8.47	0.0	
12/01/2021	10:36:55	27	0.0	8.47	0.0	
12/01/2021	10:37:00	26	0.0	8.47	0.0	release top plug
12/01/2021	10:37:25	26	0.0	8.47	0.0	
12/01/2021	10:37:55	26	0.0	8.47	0.0	
12/01/2021	10:38:00	25	0.0	8.47	0.0	displace 454bbl treated water
12/01/2021	10:38:25	25	0.0	8.47	0.0	
12/01/2021	10:38:55	24	0.0	8.47	0.0	
12/01/2021	10:39:25	24	0.0	8.47	0.0	
12/01/2021	10:39:55	23	0.0	8.47	0.0	
12/01/2021	10:40:25	229	4.7	8.52	0.0	
12/01/2021	10:40:55	366	4.7	8.50	0.0	
12/01/2021	10:41:25	1942	6.6	8.49	0.0	
12/01/2021	10:41:55	1347	6.2	8.48	0.0	
12/01/2021	10:42:25	1845	8.3	8.52	0.0	
12/01/2021	10:42:55	2191	8.9	8.50	0.0	
12/01/2021	10:43:25	1815	8.6	8.50	0.0	
12/01/2021	10:43:55	1863	9.0	8.48	0.0	
12/01/2021	10:44:25	2121	8.5	8.49	0.0	
12/01/2021	10:44:55	2048	7.7	8.48	0.0	
12/01/2021	10:45:25	2285	8.9	8.47	0.0	
12/01/2021	10:45:55	2275	8.9	8.47	0.0	
12/01/2021	10:46:25	2367	8.9	8.47	0.0	
12/01/2021	10:46:55	2182	8.9	8.47	0.0	
12/01/2021	10:47:25	2380	8.9	8.47	0.0	
12/01/2021	10:48:25	2451	8.9	8.47	0.0	
12/01/2021	10:48:55	2464	8.9	8.47	0.0	
12/01/2021	10:49:25	2741	8.9	8.47	0.0	
12/01/2021	10:49:55	2816	8.9	8.47	0.0	
12/01/2021	10:50:25	2959	8.9	8.47	0.0	
12/01/2021	10:50:55	3028	8.9	8.47	0.0	
12/01/2021	10:51:25	2947	8.9	8.47	0.0	
12/01/2021	10:51:55	3078	8.8	8.47	0.0	
12/01/2021	10:52:25	3132	8.9	8.47	0.0	
12/01/2021	10:52:55	3178	8.8	8.47	0.0	
12/01/2021	10:53:25	3237	8.8	8.47	0.0	
12/01/2021	10:53:55	3275	8.8	8.47	0.0	
12/01/2021	10:54:25	3286	8.8	8.47	0.0	
12/01/2021	10:54:55	3442	8.8	8.47	0.0	
12/01/2021	10:55:25	3365	9.0	8.47	0.0	
12/01/2021	10:55:55	3523	9.1	8.47	0.0	
12/01/2021	10:56:25	3418	9.0	8.47	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	10:57:25	3476	8.9	8.47	0.0	
12/01/2021	10:57:55	3610	8.9	8.47	0.0	
12/01/2021	10:58:25	3672	8.9	8.46	0.0	
12/01/2021	10:58:55	3860	8.9	8.47	0.0	
12/01/2021	10:59:25	3781	8.9	8.47	0.0	
12/01/2021	10:59:55	3779	8.9	8.47	0.0	
12/01/2021	11:00:25	4023	8.9	8.47	0.0	
12/01/2021	11:00:55	4033	8.9	8.47	0.0	
12/01/2021	11:01:25	3992	8.9	8.47	0.0	
12/01/2021	11:01:55	3971	8.9	8.47	0.0	
12/01/2021	11:02:25	4014	8.9	8.47	0.0	
12/01/2021	11:02:55	3913	8.9	8.47	0.0	
12/01/2021	11:03:25	4012	8.9	8.47	0.0	
12/01/2021	11:03:55	3993	8.9	8.47	0.0	
12/01/2021	11:04:25	4024	8.9	8.47	0.0	
12/01/2021	11:04:55	3835	8.9	8.46	0.0	
12/01/2021	11:05:25	4007	8.9	8.46	0.0	
12/01/2021	11:05:55	4087	8.9	8.47	0.0	
12/01/2021	11:06:25	3869	8.9	8.47	0.0	
12/01/2021	11:06:55	3929	8.9	8.47	0.0	
12/01/2021	11:07:25	3820	8.9	8.47	0.0	
12/01/2021	11:07:55	3799	8.9	8.47	0.0	
12/01/2021	11:08:25	3698	8.9	8.47	0.0	
12/01/2021	11:08:55	3887	8.9	8.46	0.0	
12/01/2021	11:09:25	3827	8.9	8.46	0.0	
12/01/2021	11:09:55	4047	8.9	8.46	0.0	
12/01/2021	11:10:25	3966	8.9	8.46	0.0	
12/01/2021	11:10:55	4038	8.9	8.46	0.0	
12/01/2021	11:11:25	3972	8.9	8.46	0.0	
12/01/2021	11:11:55	4034	8.9	8.46	0.0	
12/01/2021	11:12:25	4000	8.9	8.46	0.0	
12/01/2021	11:12:55	3923	8.9	8.46	0.0	
12/01/2021	11:13:25	4017	8.9	8.46	0.0	
12/01/2021	11:13:55	4024	8.9	8.46	0.0	
12/01/2021	11:14:25	4037	8.9	8.46	0.0	
12/01/2021	11:14:55	3979	8.9	8.46	0.0	
12/01/2021	11:15:25	3918	8.9	8.46	0.0	
12/01/2021	11:15:55	3764	8.9	8.46	0.0	
12/01/2021	11:16:25	3835	8.9	8.46	0.0	
12/01/2021	11:16:55	3874	8.9	8.46	0.0	
12/01/2021	11:17:25	3866	8.9	8.47	0.0	
12/01/2021	11:17:55	3707	8.9	8.46	0.0	
12/01/2021	11:18:25	3956	8.9	8.46	0.0	
12/01/2021	11:18:55	4032	8.9	8.46	0.0	
12/01/2021	11:19:25	4029	8.9	8.46	0.0	
12/01/2021	11:19:55	3998	8.9	8.46	0.0	
12/01/2021	11:20:25	4024	8.9	8.46	0.0	
12/01/2021	11:20:55	3935	8.9	8.46	0.0	
12/01/2021	11:21:25	3975	8.9	8.46	0.0	
12/01/2021	11:21:55	3970	8.9	8.46	0.0	
12/01/2021	11:22:25	3976	8.9	8.46	0.0	
12/01/2021	11:23:25	3932	8.9	8.46	0.0	
12/01/2021	11:23:55	4003	8.9	8.46	0.0	
12/01/2021	11:24:25	3770	9.0	8.46	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	11:25:25	3793	9.0	8.46	0.0	
12/01/2021	11:25:55	3818	9.0	8.46	0.0	
12/01/2021	11:26:25	3828	9.0	8.46	0.0	
12/01/2021	11:26:55	3976	9.0	8.47	0.0	
12/01/2021	11:27:25	3916	9.0	8.46	0.0	
12/01/2021	11:27:55	4077	9.0	8.46	0.0	
12/01/2021	11:28:25	3996	9.0	8.46	0.0	
12/01/2021	11:28:55	3987	9.0	8.46	0.0	
12/01/2021	11:29:25	3997	8.9	8.46	0.0	
12/01/2021	11:29:55	3925	9.0	8.46	0.0	
12/01/2021	11:30:25	3786	8.8	8.46	0.0	
12/01/2021	11:30:55	3277	5.8	8.46	0.0	
12/01/2021	11:31:25	3249	5.8	8.46	0.0	
12/01/2021	11:31:55	3285	5.8	8.46	0.0	
12/01/2021	11:32:25	3263	5.8	8.46	0.0	
12/01/2021	11:32:55	3255	5.8	8.46	0.0	
12/01/2021	11:33:00	3286	5.8	8.46	0.0	land plug @ 3800psi
12/01/2021	11:33:25	3294	5.8	8.46	0.0	
12/01/2021	11:33:55	3257	5.8	8.46	0.0	
12/01/2021	11:34:00	3268	5.8	8.46	0.0	120 bbl spacer to surface
12/01/2021	11:34:25	3282	5.8	8.46	0.0	
12/01/2021	11:34:55	3781	0.0	8.46	0.0	
12/01/2021	11:35:25	3660	0.0	8.46	0.0	
12/01/2021	11:35:55	3763	0.0	8.46	0.0	
12/01/2021	11:36:25	3701	0.0	8.47	0.0	
12/01/2021	11:36:55	3764	0.0	8.46	0.0	
12/01/2021	11:37:25	3721	0.0	8.47	0.0	
12/01/2021	11:37:55	3777	0.0	8.47	0.0	
12/01/2021	11:38:25	3750	0.0	8.47	0.0	
12/01/2021	11:38:55	3786	0.0	8.47	0.0	
12/01/2021	11:39:25	3767	0.0	8.47	0.0	
12/01/2021	11:39:55	3787	0.0	8.47	0.0	
12/01/2021	11:40:25	2029	0.0	8.47	0.0	
12/01/2021	11:40:55	6	0.0	8.47	0.0	
12/01/2021	11:41:25	-1	0.0	8.47	0.0	
12/01/2021	11:41:55	-4	0.0	8.47	0.0	
12/01/2021	11:42:25	-2	0.0	8.47	0.0	
12/01/2021	11:42:55	-4	0.0	8.47	0.0	
12/01/2021	11:43:25	-5	0.0	8.47	0.0	
12/01/2021	11:43:55	-5	0.0	8.47	0.0	
12/01/2021	11:44:25	-5	0.0	8.47	0.0	
12/01/2021	11:44:55	-4	0.0	8.47	0.0	
12/01/2021	11:45:25	-6	0.0	8.47	0.0	
12/01/2021	11:45:55	-5	0.0	8.47	0.0	
12/01/2021	11:46:25	-4	0.0	8.47	0.0	
12/01/2021	11:46:55	-5	0.0	8.47	0.0	
12/01/2021	11:47:25	-6	0.0	8.47	0.0	
12/01/2021	11:47:55	-5	0.0	8.47	0.0	
12/01/2021	11:48:25	-9	0.0	8.47	0.0	
12/01/2021	11:48:55	-8	0.0	8.47	0.0	
12/01/2021	11:49:25	-7	0.0	8.47	0.0	
12/01/2021	11:49:55	-9	0.0	8.47	0.0	
12/01/2021	11:50:25	-7	0.0	8.47	0.0	
12/01/2021	11:50:55	-6	0.0	8.47	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	11:51:55	-5	0.0	8.47	0.0	
12/01/2021	11:52:25	-17	0.0	8.47	0.0	
12/01/2021	11:52:55	-5	0.0	8.48	0.0	
12/01/2021	11:53:25	-3	0.0	8.46	0.0	
12/01/2021	11:53:55	-4	0.0	8.43	0.0	
12/01/2021	11:54:25	-4	0.0	8.44	0.0	
12/01/2021	11:54:55	-3	0.0	8.44	0.0	
12/01/2021	11:55:25	-5	0.0	8.44	0.0	
12/01/2021	11:55:55	-3	0.0	8.44	0.0	
12/01/2021	11:56:25	-3	0.0	8.44	0.0	
12/01/2021	11:56:55	-4	0.0	8.44	0.0	
12/01/2021	11:57:25	-3	0.0	8.44	0.0	
12/01/2021	11:57:55	-3	0.0	8.44	0.0	
12/01/2021	11:58:00	-3	0.0	8.44	0.0	wash lines for rig
12/01/2021	11:58:25	-3	0.0	8.44	0.0	
12/01/2021	11:58:55	-2	0.0	8.44	0.0	
12/01/2021	11:59:25	-3	0.0	8.44	0.0	
12/01/2021	11:59:55	18	0.8	8.45	0.0	
12/01/2021	12:00:25	61	2.6	8.45	0.0	
12/01/2021	12:00:55	126	4.5	8.46	0.0	
12/01/2021	12:01:25	146	4.6	8.46	0.0	
12/01/2021	12:01:55	230	6.3	8.47	0.0	
12/01/2021	12:02:25	349	8.3	8.47	0.0	
12/01/2021	12:02:55	354	8.3	8.47	0.0	
12/01/2021	12:03:25	334	8.3	8.47	0.0	
12/01/2021	12:03:55	323	8.3	8.47	0.0	
12/01/2021	12:04:25	322	8.2	8.47	0.0	
12/01/2021	12:04:55	38	3.2	8.47	0.0	
12/01/2021	12:05:25	11	0.0	8.47	0.0	
12/01/2021	12:05:55	5	0.0	8.47	0.0	
12/01/2021	12:06:25	6	0.0	8.47	0.0	
12/01/2021	12:06:55	1	0.0	8.47	0.0	
12/01/2021	12:07:25	0	0.0	8.47	0.0	
12/01/2021	12:07:55	4	0.0	8.47	0.0	
12/01/2021	12:08:25	-1	0.0	8.47	0.0	
12/01/2021	12:08:55	-4	0.0	8.47	0.0	
12/01/2021	12:09:25	-2	0.0	8.47	0.0	
12/01/2021	12:09:55	-3	0.0	8.47	0.0	
12/01/2021	12:10:25	-3	0.0	8.47	0.0	
12/01/2021	12:10:55	-3	0.0	8.47	0.0	
12/01/2021	12:11:25	-5	0.0	8.47	0.0	
12/01/2021	12:11:55	-3	0.0	8.47	0.0	
12/01/2021	12:12:55	-3	0.0	8.47	0.0	
12/01/2021	12:13:25	-5	0.0	8.47	0.0	
12/01/2021	12:13:55	5	0.0	8.47	0.0	
12/01/2021	12:14:25	4	0.0	8.47	0.0	
12/01/2021	12:14:55	57	2.9	8.57	0.0	
12/01/2021	12:15:25	48	2.9	8.48	0.0	
12/01/2021	12:15:55	49	3.0	8.48	0.0	
12/01/2021	12:16:25	31	1.7	8.48	0.0	
12/01/2021	12:16:55	126	4.6	8.48	0.0	
12/01/2021	12:17:25	228	6.4	8.49	0.0	
12/01/2021	12:17:55	203	6.5	8.49	0.0	
12/01/2021	12:18:25	109	6.3	7.33	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	12:19:25	108	5.8	7.50	0.0	
12/01/2021	12:19:55	120	7.3	7.58	0.0	
12/01/2021	12:20:25	57	5.3	6.82	0.0	
12/01/2021	12:20:55	159	7.3	7.92	0.0	
12/01/2021	12:21:25	231	6.5	8.52	0.0	
12/01/2021	12:21:55	240	6.5	8.60	0.0	
12/01/2021	12:22:25	208	7.7	9.35	0.0	
12/01/2021	12:22:55	82	6.5	8.60	0.0	
12/01/2021	12:23:25	37	2.4	2.05	0.0	
12/01/2021	12:23:55	29	5.0	4.40	0.0	
12/01/2021	12:24:25	56	0.7	5.52	0.0	
12/01/2021	12:24:55	95	9.8	7.76	0.0	
12/01/2021	12:25:25	31	3.1	4.98	0.0	
12/01/2021	12:25:55	218	6.4	8.50	0.0	
12/01/2021	12:26:25	34	0.1	4.76	0.0	
12/01/2021	12:26:55	75	6.4	7.86	0.0	
12/01/2021	12:27:25	236	6.6	8.42	0.0	
12/01/2021	12:27:55	93	7.2	7.87	0.0	
12/01/2021	12:28:25	289	15.2	9.40	0.0	
12/01/2021	12:28:55	224	4.6	8.22	0.0	
12/01/2021	12:29:25	223	6.4	8.46	0.0	
12/01/2021	12:29:55	233	6.5	8.47	0.0	
12/01/2021	12:30:25	212	6.4	8.47	0.0	
12/01/2021	12:30:55	289	8.2	8.47	0.0	
12/01/2021	12:31:25	363	8.2	8.47	0.0	
12/01/2021	12:31:55	356	8.2	8.47	0.0	
12/01/2021	12:32:25	358	8.2	8.47	0.0	
12/01/2021	12:32:55	356	8.2	8.47	0.0	
12/01/2021	12:33:25	366	8.2	8.47	0.0	
12/01/2021	12:33:55	367	8.2	8.47	0.0	
12/01/2021	12:34:25	365	8.2	8.47	0.0	
12/01/2021	12:34:55	13	0.0	8.47	0.0	
12/01/2021	12:35:25	20	0.0	8.47	0.0	
12/01/2021	12:35:55	12	0.0	8.47	0.0	
12/01/2021	12:36:25	10	0.0	8.47	0.0	
12/01/2021	12:36:55	15	0.0	8.47	0.0	
12/01/2021	12:37:25	13	0.0	8.47	0.0	
12/01/2021	12:37:55	13	0.0	8.47	0.0	
12/01/2021	12:38:25	11	0.0	8.47	0.0	
12/01/2021	12:38:55	9	0.0	8.47	0.0	
12/01/2021	12:39:25	13	0.0	8.47	0.0	
12/01/2021	12:39:55	13	0.0	8.47	0.0	
12/01/2021	12:40:25	15	0.0	8.47	0.0	
12/01/2021	12:40:55	13	0.0	8.47	0.0	
12/01/2021	12:41:25	11	0.0	8.47	0.0	
12/01/2021	12:41:55	11	0.0	8.47	0.0	
12/01/2021	12:42:25	9	0.0	8.47	0.0	
12/01/2021	12:42:55	9	0.0	8.47	0.0	
12/01/2021	12:43:25	9	0.0	8.47	0.0	
12/01/2021	12:43:55	48	2.4	8.49	0.0	
12/01/2021	12:44:25	133	4.6	8.48	0.0	
12/01/2021	12:44:55	117	4.6	8.48	0.0	
12/01/2021	12:45:25	128	4.7	8.40	0.0	
12/01/2021	12:45:55	24	0.0	8.47	0.0	

Well	Field	Job Start	Customer	Job Number
OE Burge 5H 5h	Kausooth	Dec/01/2021	Southwestern	EN82-01903

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
12/01/2021	12:46:55	5	0.0	8.47	0.0	
12/01/2021	12:47:55	39	2.5	8.47	0.0	
12/01/2021	12:48:25	134	4.8	8.28	0.0	
12/01/2021	12:48:55	31	2.7	8.28	0.0	
12/01/2021	12:49:25	15	0.1	8.46	0.0	
12/01/2021	12:49:55	12	0.0	8.46	0.0	
12/01/2021	12:50:25	9	0.0	8.46	0.0	
12/01/2021	12:50:55	8	0.0	8.46	0.0	
12/01/2021	12:51:25	11	0.0	8.46	0.0	
12/01/2021	12:51:55	10	0.0	8.46	0.0	
12/01/2021	12:52:00	9	0.1	8.43	0.0	end pumping @ 13:00
12/01/2021	12:52:25	5	0.0	8.41	0.0	
12/01/2021	12:52:55	3	0.0	8.47	0.0	
12/01/2021	12:53:00	8	0.0	8.46	0.0	end job @ 14:00
12/01/2021	12:53:25	9	0.0	8.46	0.0	
12/01/2021	12:53:55	-2	0.0	8.46	0.0	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
5.0			15.2	810.0	0.0	160.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
7598	-0	1477				bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
%	810.0 bbl	454.0 bbl	62 degF	Cement Circulated to Surface? ☐	Volume bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
	Danny Cover	☐ -	☒ -

Service Quality Evaluation

Client:	Southwestern
Field:	Kausooth
Rig:	sdc 41
Well:	OE Burge 5H
Service Line:	Cementing
Job Type:	production

Service Order #:	
Date:	Dec/01/2021
Operating Time (hh:mm):	00:00
Client Rep:	
Schlumberger Engineer:	Danny Cover
Schlumberger FSM:	

Main Objective:

To be completed by Company Rep. Please answer Y (Yes) or N (No) and add any comments below.

		Score	Yes / No	Result
1	**HSE**			
1a	Free of lost time injury and compliance with SLB and loc. spec. HSE practice	5	**yes** [X] **no** [ ]	5
1b	Free of environmental spill or non-compliant discharge	5	**yes** [X] **no** [ ]	5
1c	Wellsite left clean	4	**yes** [X] **no** [ ]	4
			Sub-total	100%

2	**Design / Preparation**			
2a	Program incl. job simulation (CemCADE) & pump schedule / tool hydraulic calcs	3	**yes** [X] **no** [ ]	3
2b	Equipment maintenance schedule completed / Green tagged	2	**yes** [X] **no** [ ]	2
2c	All materials and equipment required for job/contingency checked & on location	2	**yes** [X] **no** [ ]	2
2d	Safety / pre-job meeting conducted with all involved present	2	**yes** [X] **no** [ ]	2
			Sub-total	100%

3	**Execution**			
3a	Lost time < 30 mins	3	**yes** [X] **no** [ ]	3
3b	Equipment pressure tested succesfully	3	**yes** [X] **no** [ ]	3
3c	All key parameters monitored and recorded accurately (Pressure, Rate, Density)	2	**yes** [X] **no** [ ]	2
3d	Plugs / darts released and tested succesfully	2	**yes** [X] **no** [ ]	2
3e	Density variation met expectations	2	**yes** [X] **no** [ ]	2
3f	Personnel performed as per expectations	2	**yes** [X] **no** [ ]	2
3g	Equipment performed as per expectations	2	**yes** [X] **no** [ ]	2
3h	Job pumped as per design	3	**yes** [X] **no** [ ]	3
3i	Did job start on time	2	**yes** [X] **no** [ ]	2
3j	Free of Operational failures (screen out, Cementing Example, etc.)	3	**yes** [X] **no** [ ]	3
			Sub-total	100%

4	**Evaluation**			
4a	Main job objective achieved with no consequential non-productive time	10	**yes** [X] **no** [ ]	10
			Sub-total	100%

Total 100%

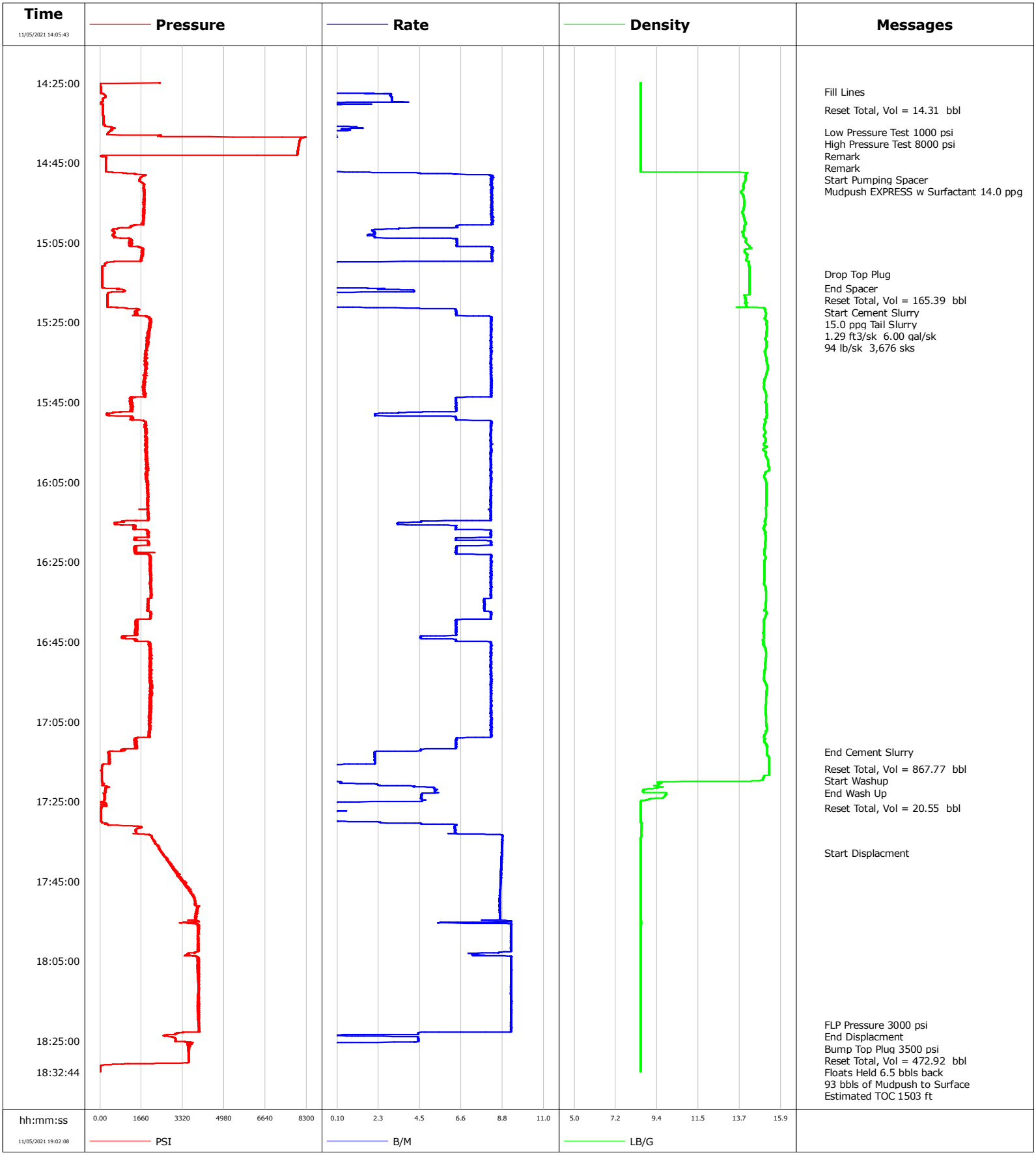
Comments: (Please include a brief explanation for a "NO" response and summarize any innovations attempted on this well.)

Client:	**Schlumberger:**
Client Signature:	**Schlumberger Signature:**

Schlumberger

Cementing Job Report

Well	OE Burge MSH 1H	**Client**	SWN Production Company
Field	Victory	**SIR No.**	EN82-01213
Engineer	Marco Arrington	**Job Type**	Cem Prod Casing
Country	US	**Job Date**	11-05-2021



Schlumberger

Cementing Service Report

Customer	Job Number
SWN Production Company	EN82-01213

Well	Location (legal)	Schlumberger Location	Job Start
OE Burge MSH 1H 1H	OE Burge Pad		Nov/05/2021

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
Victory	Shale	deg	8.5 in	21395.0 ft	6973.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
Marshall	West Virginia	psi	136 degF	136 degF	lb/gal

Well Master	API/UWI
0066447022	47-051-02387-00-00

Rig Name	Drilled For	Service Via
SDC #41	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
	lb/gal	cP

Service Line	Job Type
Cementing	Cem Prod Casing

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	

Service Instructions

Provide equipment, product, and service to cement 5 1/2" production casing in 8.75" x 8.5" OH at 21395'.
MW - 13.5 ppg
MPE - 160 bbls @ 14 ppg
Tail - TOC 2940' @ 15.0 ppg with 10% xs
2 pumps required

Pressure Test Lines L-1000 H-8000
160 bbls of MudPush Express w/Surfactant 14.0 ppg
Drop Bottom Plug

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
2740.0	9.6	36.0	p-110	BUTT
21414.0	5.5	20.0	J-55	BUTT

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	473.0 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	485.0 bbl	910.0 bbl	776.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
☐	☐

Lift Pressure	3000 psi

Pipe Rotated	Pipe Reciprocated
☒	☐

No. Centralizers	Top Plugs	Bottom Plugs
	1	1

Cement Head Type

Job Scheduled For	Arrived on Location	Leave Location
Nov/05/2021 08:30	Nov/05/2021 11:30	Nov/05/2021

Casing Tools

Shoe Type	Float
Shoe Depth	21412.0 ft
Stage Tool Type	
Stage Tool Depth	ft
Collar Type	Float
Collar Depth	21367.0 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
11/05/2021	14:05:43	89	0.0	8.50	End Cement Slurry
11/05/2021	14:07:48	9	0.0	8.50	
11/05/2021	14:09:53	7	0.0	8.50	
11/05/2021	14:11:58	8	0.0	8.50	
11/05/2021	14:14:03	8	0.0	8.50	
11/05/2021	14:16:08	18	0.0	8.49	
11/05/2021	14:18:13	670	2.8	8.49	
11/05/2021	14:20:18	250	0.0	8.49	
11/05/2021	14:22:23	259	0.0	8.49	
11/05/2021	14:23:51	2921	0.0	8.49	Remark
11/05/2021	14:24:28	2699	0.0	8.48	
11/05/2021	14:26:33	25	0.0	8.49	
11/05/2021	14:27:18	31	0.0	8.49	Fill Lines
11/05/2021	14:28:38	216	3.0	8.48	
11/05/2021	14:30:43	110	0.0	8.48	
11/05/2021	14:31:43	114	0.0	8.48	Reset Total, Vol = 14.31 bbl
11/05/2021	14:32:48	116	0.0	8.48	
11/05/2021	14:34:53	120	0.0	8.48	
11/05/2021	14:36:58	474	0.6	8.48	
11/05/2021	14:37:16	371	0.0	8.48	Low Pressure Test 1000 psi
11/05/2021	14:38:15	2354	0.0	8.48	High Pressure Test 8000 psi

Well	Field	Job Start	Customer	Job Number
OE Burge MSH 1H 1H	Victory	Nov/05/2021	SWN Production Company	EN82-01213

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
11/05/2021	14:41:08	7962	0.0	8.48	
11/05/2021	14:43:13	7919	0.0	8.48	
11/05/2021	14:43:20	20	0.0	8.49	Remark
11/05/2021	14:45:18	229	0.0	8.49	
11/05/2021	14:46:40	225	0.0	8.49	Start Pumping Spacer
11/05/2021	14:47:00	225	0.0	8.49	Mudpush EXPRESS w Surfactant 14.0 ppg
11/05/2021	14:47:23	362	0.9	11.71	
11/05/2021	14:49:28	1565	8.2	14.02	
11/05/2021	14:51:33	1768	8.3	13.94	
11/05/2021	14:53:38	1763	8.3	13.91	
11/05/2021	14:55:43	1746	8.2	13.96	
11/05/2021	14:57:48	1762	8.3	13.88	
11/05/2021	14:59:53	1735	8.3	14.01	
11/05/2021	15:01:58	482	1.9	13.96	
11/05/2021	15:04:03	1203	6.3	14.05	
11/05/2021	15:06:08	1552	8.2	14.24	
11/05/2021	15:08:13	1699	8.2	14.10	
11/05/2021	15:10:18	199	0.0	14.21	
11/05/2021	15:12:23	94	0.0	14.22	
11/05/2021	15:13:00	94	0.0	14.22	Drop Top Plug
11/05/2021	15:14:28	94	0.0	14.22	
11/05/2021	15:16:30	438	1.7	14.24	End Spacer
11/05/2021	15:16:33	800	2.6	14.24	
11/05/2021	15:18:07	296	0.0	14.23	Reset Total, Vol = 165.39 bbl
11/05/2021	15:18:38	290	0.0	14.00	
11/05/2021	15:20:10	288	0.0	14.00	Start Cement Slurry
11/05/2021	15:20:30	288	0.0	14.05	15.0 ppg Tail Slurry
11/05/2021	15:20:43	288	0.0	14.07	
11/05/2021	15:21:00	287	0.0	14.07	1.29 ft3/sk 6.00 gal/sk
11/05/2021	15:21:30	1087	4.4	15.01	94 lb/sk 3,676 sks
11/05/2021	15:22:48	1385	6.4	15.12	
11/05/2021	15:24:53	2001	8.2	15.15	
11/05/2021	15:26:58	2002	8.2	15.16	
11/05/2021	15:29:03	1854	8.2	15.06	
11/05/2021	15:31:08	1887	8.2	15.14	
11/05/2021	15:33:13	1833	8.2	15.07	
11/05/2021	15:35:18	1889	8.2	15.16	
11/05/2021	15:37:23	1849	8.2	15.16	
11/05/2021	15:39:28	1746	8.2	15.01	
11/05/2021	15:41:33	1790	8.2	15.00	
11/05/2021	15:45:43	1232	6.4	15.14	
11/05/2021	15:47:48	277	2.5	15.15	
11/05/2021	15:49:53	1820	8.2	15.07	
11/05/2021	15:51:58	1811	8.2	15.02	
11/05/2021	15:54:03	1892	8.2	15.07	
11/05/2021	15:56:08	1853	8.2	15.16	
11/05/2021	15:58:13	1877	8.2	15.08	
11/05/2021	16:00:18	1880	8.2	15.22	
11/05/2021	16:02:23	1886	8.2	15.15	
11/05/2021	16:04:28	1894	8.2	15.07	
11/05/2021	16:06:33	1902	8.2	15.14	
11/05/2021	16:08:38	1907	8.2	15.14	
11/05/2021	16:10:43	1920	8.2	15.12	
11/05/2021	16:14:53	867	4.5	15.04	

Well	Field	Job Start	Customer	Job Number
OE Burge MSH 1H 1H	Victory	Nov/05/2021	SWN Production Company	EN82-01213

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
11/05/2021	16:19:03	1448	6.4	15.08	
11/05/2021	16:21:08	1450	6.4	15.06	
11/05/2021	16:23:13	1958	8.2	15.04	
11/05/2021	16:25:18	2012	8.2	15.02	
11/05/2021	16:27:23	2031	8.2	15.02	
11/05/2021	16:29:28	2031	8.2	15.04	
11/05/2021	16:31:33	2052	8.2	15.08	
11/05/2021	16:33:38	2059	8.2	15.11	
11/05/2021	16:35:43	1929	7.8	15.09	
11/05/2021	16:37:48	2048	8.2	15.14	
11/05/2021	16:39:53	1428	6.3	15.00	
11/05/2021	16:41:58	1508	6.3	14.97	
11/05/2021	16:44:03	919	4.5	14.98	
11/05/2021	16:46:08	2049	8.2	15.01	
11/05/2021	16:48:13	2043	8.2	15.11	
11/05/2021	16:50:18	2058	8.2	15.07	
11/05/2021	16:52:23	2030	8.2	15.04	
11/05/2021	16:54:28	2000	8.3	14.99	
11/05/2021	16:56:33	2037	8.2	15.15	
11/05/2021	16:58:38	1990	8.2	15.12	
11/05/2021	17:00:43	2053	8.2	15.10	
11/05/2021	17:02:48	2065	8.2	15.09	
11/05/2021	17:04:53	1977	8.2	15.11	
11/05/2021	17:06:58	2042	8.2	15.16	
11/05/2021	17:09:03	1513	6.7	14.99	
11/05/2021	17:11:08	1424	6.4	15.15	
11/05/2021	17:12:44	332	2.1	15.16	End Cement Slurry
11/05/2021	17:13:13	350	2.1	15.16	
11/05/2021	17:15:18	351	2.1	15.26	
11/05/2021	17:16:50	75	0.0	15.26	Reset Total, Vol = 867.77 bbl
11/05/2021	17:16:55	76	0.0	15.26	Start Washup
11/05/2021	17:17:23	69	0.0	15.26	
11/05/2021	17:19:28	70	0.0	14.94	
11/05/2021	17:21:33	262	5.2	9.41	
11/05/2021	17:22:10	206	5.3	8.66	End Wash Up
11/05/2021	17:23:38	186	4.5	9.78	
11/05/2021	17:25:43	252	0.0	8.50	
11/05/2021	17:26:37	41	0.0	8.49	Reset Total, Vol = 20.55 bbl
11/05/2021	17:27:48	33	0.0	8.50	
11/05/2021	17:29:53	33	0.0	8.50	
11/05/2021	17:31:58	1446	6.3	8.53	
11/05/2021	17:34:03	2098	8.8	8.50	
11/05/2021	17:36:08	2318	8.8	8.50	
11/05/2021	17:37:53	2489	8.8	8.48	Start Displacment
11/05/2021	17:38:13	2543	8.8	8.48	
11/05/2021	17:40:18	2817	8.8	8.48	
11/05/2021	17:42:23	3028	8.7	8.49	
11/05/2021	17:44:28	3244	8.7	8.49	
11/05/2021	17:46:33	3535	8.7	8.49	
11/05/2021	17:48:38	3736	8.7	8.49	
11/05/2021	17:50:43	3825	8.7	8.48	
11/05/2021	17:52:48	3841	8.7	8.48	
11/05/2021	17:54:53	3902	9.2	8.50	
11/05/2021	17:56:58	3983	9.3	8.49	

Well	Field	Job Start	Customer	Job Number
OE Burge MSH 1H 1H	Victory	Nov/05/2021	SWN Production Company	EN82-01213

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
11/05/2021	18:01:08	3943	9.3	8.49	
11/05/2021	18:03:13	3518	7.3	8.49	
11/05/2021	18:05:18	3982	9.3	8.49	
11/05/2021	18:07:23	3925	9.3	8.48	
11/05/2021	18:09:28	3970	9.3	8.48	
11/05/2021	18:11:33	3949	9.3	8.48	
11/05/2021	18:13:38	3974	9.3	8.48	
11/05/2021	18:15:43	3916	9.3	8.48	
11/05/2021	18:17:48	3976	9.3	8.48	
11/05/2021	18:19:53	3972	9.3	8.48	
11/05/2021	18:20:57	3962	9.3	8.48	FLP Pressure 3000 psi
11/05/2021	18:21:22	3985	9.3	8.48	End Displacment
11/05/2021	18:21:25	3965	9.3	8.48	Bump Top Plug 3500 psi
11/05/2021	18:21:58	3964	9.3	8.48	
11/05/2021	18:22:41	3983	9.3	8.48	Reset Total, Vol = 472.92 bbl
11/05/2021	18:24:03	2927	4.4	8.48	
11/05/2021	18:26:08	3531	0.0	8.48	
11/05/2021	18:27:02	3538	0.0	8.48	Floats Held 6.5 bbls back
11/05/2021	18:27:10	3536	0.0	8.48	93 bbls of Mudpush to Surface
11/05/2021	18:28:00	3550	0.0	8.49	Estimated TOC 1503 ft
11/05/2021	18:28:13	3542	0.0	8.49	
11/05/2021	18:30:18	3566	0.0	8.49	
11/05/2021	18:32:23	9	0.0	8.49	
11/05/2021	18:34:28	9	0.0	8.49	
11/05/2021	18:36:33	9	0.0	8.49	
11/05/2021	18:38:38	8	0.0	8.49	
11/05/2021	18:40:43	8	0.0	8.49	
11/05/2021	18:42:48	7	0.0	8.49	
11/05/2021	18:44:53	7	0.0	8.49	
11/05/2021	18:46:58	61	0.0	8.49	
11/05/2021	18:49:03	83	0.0	8.49	
11/05/2021	18:51:08	103	4.7	8.49	
11/05/2021	18:53:13	292	8.3	8.49	
11/05/2021	18:55:18	288	8.3	8.49	
11/05/2021	18:57:23	8	0.0	8.49	
11/05/2021	18:59:28	23	0.0	8.49	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
			0.0	867.0	0.0	165.0	

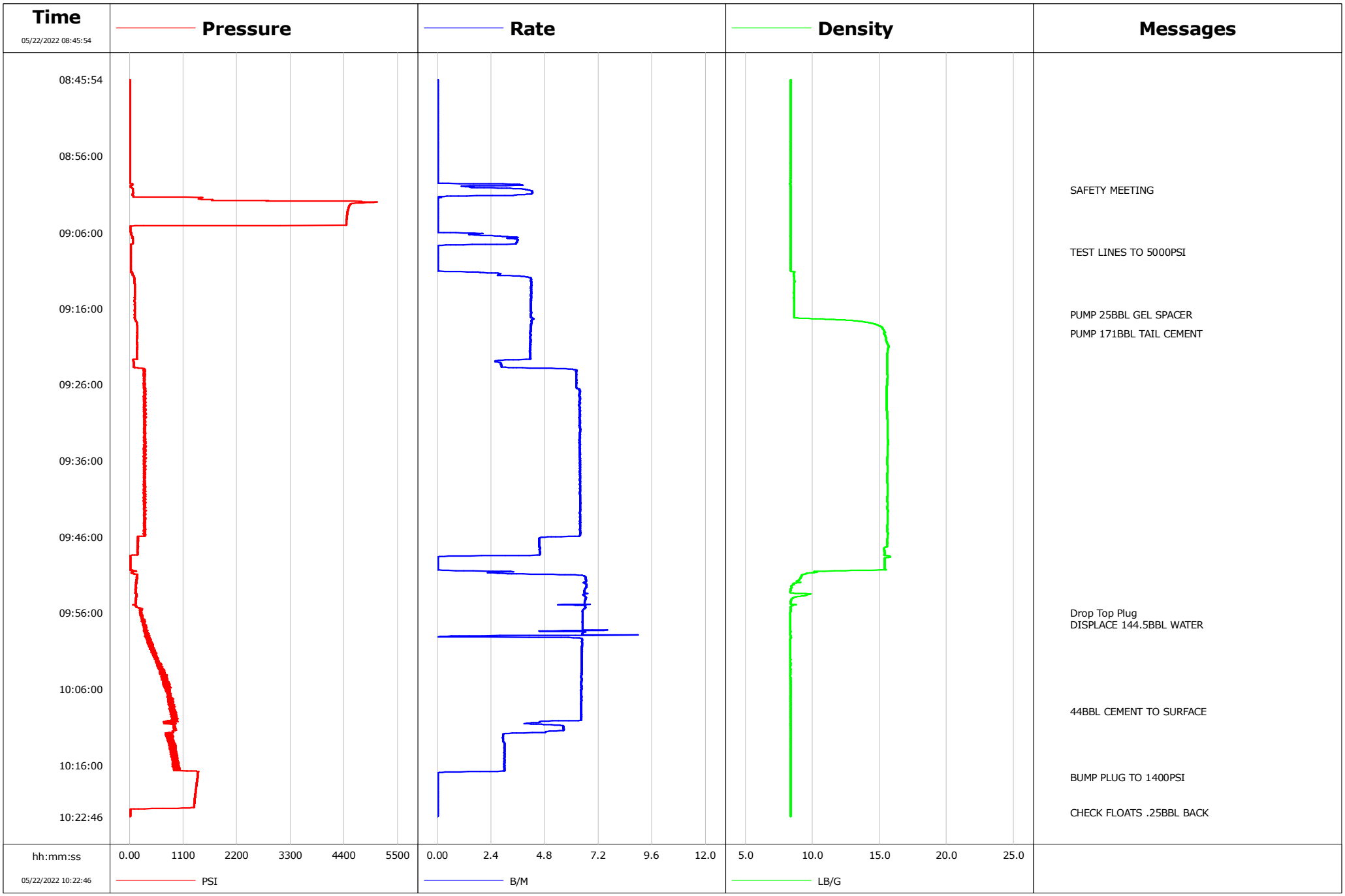
Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
0	0		3500		FreshWater	473.0 bbl	8.34 lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume
%	0.0 bbl	473.0 bbl	55 degF	☐	bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
	Marco Arrington	- ☐	- ☒

Schlumberger Cementing Job Report

Well	TIMMY MINCH 8H	**Client**	SWN
Field	OHIO COUNTY	**SIR No.**	EOHC-00682
Engineer	MATTHEW MORRIS	**Job Type**	9.625
Country	United States	**Job Date**	05-22-2022



Schlumberger

Cementing Service Report

Customer	Job Number
SWN	EOHC-00682

Well	Location (legal)	Schlumberger Location	Job Start
TIMMY MINCH 8H	WV	STRASBURG	May/22/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
OHIO COUNTY	Dirty-Sandstone	0 deg	12.3 in	1931.0 ft	1931.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
OHIO COUNTY	West Virginia	0 psi	81 degF	80 degF	0.00 lb/gal

Well Master	API/UWI
0066499488	47-069-00335-00-00

Rig Name	Drilled For	Service Via
SDC 40	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
NONE	8.33 lb/gal	0.000 cP

Service Line	Job Type
Cementing	9.625

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
3520 psi	2020 psi	Single Cement head

Service Instructions

TEST LINES TO 5000PSI, PUMP 25BBL GEL
PUMP 171BBL TAIL @ 15.6PPG, Y-1.19, W-5.27, 807SKS
DROP TOP PLUG, DISPLACE 144.5BBL WATER
BUMP PLUG, CHECK FLOATS
WATER TEST, C-20, S-200, PH-7, TEMP-70

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
530.0	13.4	54.5	J55	BUTT
1914.5	9.6	36.0	K55	BUTT

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
	0.0	0.0	0.0	0	0
	0.0	0.0	0.0	0	0

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
0.0 ft	0.0 ft	0.00	0	0.0 ft
0.0 ft	0.0 ft	0.00	0	Diameter
0.0 ft	0.0 ft	0.00	0	0.000 in

Treat Down	Displacement	Packer Type	Packer Depth
CASING	144.5 bbl	None	0.0 ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
0.0 bbl	147.5 bbl	111.0 bbl	77.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement	Lift Pressure	Pipe Rotated	Pipe Reciprocated	No. Centralizers	Top Plugs	Bottom Plugs	Cement Head Type
X	☐	900 psi	☐	☐	0	1	0	SINGLE

Job Scheduled For	Arrived on Location	Leave Location
May/22/2022 01:00	May/22/2022 01:00	May/22/2022 12:00

Casing Tools

Shoe Type	Guide
Shoe Depth	1914.5 ft
Stage Tool Type	NA
Stage Tool Depth	0.0 ft
Collar Type	Float
Collar Depth	1871.5 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
05/22/2022	08:45:54	6	0.0	8.36	0.0	Stopped Acquisition
05/22/2022	08:46:24	7	0.0	8.35	0.0	
05/22/2022	08:46:54	7	0.0	8.35	0.0	
05/22/2022	08:47:24	7	0.0	8.35	0.0	
05/22/2022	08:47:54	7	0.0	8.35	0.0	
05/22/2022	08:48:24	7	0.0	8.36	0.0	
05/22/2022	08:48:54	7	0.0	8.35	0.0	
05/22/2022	08:49:24	7	0.0	8.36	0.0	
05/22/2022	08:49:54	7	0.0	8.35	0.0	
05/22/2022	08:50:24	8	0.0	8.35	0.0	
05/22/2022	08:50:54	7	0.0	8.35	0.0	
05/22/2022	08:51:24	7	0.0	8.35	0.0	
05/22/2022	08:51:54	8	0.0	8.35	0.0	
05/22/2022	08:52:24	7	0.0	8.35	0.0	
05/22/2022	08:52:54	7	0.0	8.35	0.0	
05/22/2022	08:53:24	8	0.0	8.35	0.0	
05/22/2022	08:53:54	7	0.0	8.35	0.0	
05/22/2022	08:54:24	7	0.0	8.35	0.0	
05/22/2022	08:54:54	7	0.0	8.35	0.0	
05/22/2022	08:55:24	7	0.0	8.35	0.0	
05/22/2022	08:55:54	8	0.0	8.35	0.0	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH 8H	OHIO COUNTY	May/22/2022	SWN	EOHC-00682

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
05/22/2022	08:56:54	8	0.0	8.35	0.0	
05/22/2022	08:57:24	7	0.0	8.35	0.0	
05/22/2022	08:57:54	8	0.0	8.35	0.0	
05/22/2022	08:58:24	5	0.0	8.35	0.0	
05/22/2022	08:58:54	5	0.0	8.35	0.0	
05/22/2022	08:59:24	5	0.0	8.35	0.0	
05/22/2022	08:59:54	22	1.2	8.35	1.0	
05/22/2022	09:00:24	66	4.0	8.35	2.2	SAFETY MEETING
05/22/2022	09:00:54	70	4.2	8.35	4.3	
05/22/2022	09:01:24	1154	0.2	8.35	5.4	
05/22/2022	09:01:54	2965	0.0	8.36	5.5	
05/22/2022	09:02:24	4513	0.0	8.35	5.5	
05/22/2022	09:02:54	4479	0.0	8.35	5.5	
05/22/2022	09:03:24	4463	0.0	8.35	5.5	
05/22/2022	09:03:54	4453	0.0	8.36	5.5	
05/22/2022	09:04:24	4445	0.0	8.36	5.5	
05/22/2022	09:04:54	4438	0.0	8.35	5.5	
05/22/2022	09:05:24	18	0.0	8.35	5.5	
05/22/2022	09:05:54	18	0.0	8.35	5.5	
05/22/2022	09:06:24	49	2.1	8.35	6.1	
05/22/2022	09:06:54	63	3.6	8.35	7.7	
05/22/2022	09:07:24	64	3.5	8.35	9.4	
05/22/2022	09:07:54	27	0.0	8.35	10.1	
05/22/2022	09:08:24	26	0.0	8.35	10.1	
05/22/2022	09:08:34	27	0.0	8.35	10.1	TEST LINES TO 5000PSI
05/22/2022	09:08:54	26	0.0	8.35	10.1	
05/22/2022	09:09:24	26	0.0	8.35	10.1	
05/22/2022	09:09:54	26	0.0	8.35	10.1	
05/22/2022	09:10:24	27	0.0	8.35	10.1	
05/22/2022	09:10:54	26	0.0	8.35	10.1	
05/22/2022	09:11:24	55	2.8	8.59	10.7	
05/22/2022	09:11:54	91	4.1	8.63	12.3	
05/22/2022	09:12:24	98	4.2	8.65	14.4	
05/22/2022	09:12:54	102	4.2	8.64	16.5	
05/22/2022	09:13:54	106	4.2	8.61	20.7	
05/22/2022	09:14:24	102	4.2	8.63	22.8	
05/22/2022	09:14:54	101	4.2	8.62	24.9	
05/22/2022	09:15:24	103	4.2	8.63	26.9	
05/22/2022	09:15:54	103	4.2	8.63	29.0	
05/22/2022	09:16:24	104	4.2	8.63	31.1	
05/22/2022	09:16:45	102	4.2	8.62	32.6	PUMP 25BBL GEL SPACER
05/22/2022	09:16:54	104	4.2	8.62	33.2	
05/22/2022	09:17:24	107	4.3	10.77	35.3	
05/22/2022	09:17:54	146	4.2	14.29	37.4	
05/22/2022	09:18:24	159	4.2	15.12	39.5	
05/22/2022	09:18:54	158	4.2	15.32	41.6	
05/22/2022	09:19:15	158	4.1	15.33	43.0	PUMP 171BBL TAIL CEMENT
05/22/2022	09:19:24	157	4.2	15.37	43.7	
05/22/2022	09:19:54	153	4.2	15.47	45.7	
05/22/2022	09:20:24	155	4.2	15.52	47.8	
05/22/2022	09:20:54	153	4.1	15.65	49.9	
05/22/2022	09:21:24	152	4.1	15.61	52.0	
05/22/2022	09:21:54	151	4.2	15.57	54.0	
05/22/2022	09:22:24	149	4.1	15.56	56.1	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH 8H	OHIO COUNTY	May/22/2022	SWN	EOHC-00682

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
05/22/2022	09:23:24	84	2.8	15.55	59.3	
05/22/2022	09:23:54	286	5.5	15.55	61.0	
05/22/2022	09:24:24	318	6.2	15.55	64.0	
05/22/2022	09:24:54	284	6.2	15.58	67.1	
05/22/2022	09:25:24	311	6.2	15.56	70.2	
05/22/2022	09:25:54	292	6.2	15.55	73.4	
05/22/2022	09:26:24	291	6.2	15.53	76.5	
05/22/2022	09:26:54	334	6.4	15.53	79.6	
05/22/2022	09:27:24	300	6.3	15.52	82.8	
05/22/2022	09:27:54	317	6.4	15.51	86.0	
05/22/2022	09:28:24	309	6.4	15.51	89.1	
05/22/2022	09:28:54	289	6.4	15.52	92.3	
05/22/2022	09:29:24	338	6.4	15.53	95.5	
05/22/2022	09:29:54	310	6.4	15.55	98.7	
05/22/2022	09:30:24	335	6.4	15.57	101.9	
05/22/2022	09:30:54	334	6.3	15.58	105.0	
05/22/2022	09:31:24	295	6.3	15.58	108.2	
05/22/2022	09:31:54	327	6.4	15.58	111.4	
05/22/2022	09:32:24	301	6.3	15.58	114.6	
05/22/2022	09:32:54	292	6.4	15.59	117.8	
05/22/2022	09:33:24	331	6.4	15.61	120.9	
05/22/2022	09:33:54	298	6.4	15.61	124.1	
05/22/2022	09:34:24	319	6.4	15.60	127.3	
05/22/2022	09:34:54	288	6.4	15.59	130.5	
05/22/2022	09:35:24	296	6.4	15.58	133.6	
05/22/2022	09:35:54	302	6.4	15.56	136.8	
05/22/2022	09:36:24	291	6.4	15.57	140.0	
05/22/2022	09:36:54	317	6.4	15.58	143.2	
05/22/2022	09:37:24	306	6.4	15.59	146.4	
05/22/2022	09:37:54	300	6.4	15.55	149.6	
05/22/2022	09:38:24	318	6.3	15.54	152.7	
05/22/2022	09:38:54	305	6.4	15.57	155.9	
05/22/2022	09:39:24	292	6.4	15.59	159.1	
05/22/2022	09:39:54	320	6.4	15.60	162.3	
05/22/2022	09:40:24	299	6.4	15.58	165.5	
05/22/2022	09:40:54	324	6.4	15.56	168.7	
05/22/2022	09:41:24	287	6.4	15.57	171.9	
05/22/2022	09:41:54	301	6.4	15.58	175.0	
05/22/2022	09:42:24	304	6.4	15.57	178.2	
05/22/2022	09:42:54	299	6.3	15.60	181.4	
05/22/2022	09:43:24	317	6.4	15.60	184.6	
05/22/2022	09:43:54	306	6.4	15.59	187.8	
05/22/2022	09:44:24	307	6.4	15.57	191.0	
05/22/2022	09:44:54	328	6.4	15.56	194.2	
05/22/2022	09:45:24	310	6.4	15.58	197.3	
05/22/2022	09:45:54	312	6.3	15.58	200.5	
05/22/2022	09:46:24	165	4.5	15.57	203.0	
05/22/2022	09:47:24	168	4.6	15.41	207.5	
05/22/2022	09:47:54	162	4.6	15.35	209.8	
05/22/2022	09:48:24	166	4.6	15.35	212.1	
05/22/2022	09:48:54	11	0.0	15.35	212.5	
05/22/2022	09:49:24	14	0.0	15.35	212.5	
05/22/2022	09:49:54	14	0.0	15.35	212.5	
05/22/2022	09:50:24	11	0.3	14.48	212.5	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH 8H	OHIO COUNTY	May/22/2022	SWN	EOHC-00682

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
05/22/2022	09:51:24	152	6.6	9.11	216.9	
05/22/2022	09:51:54	140	6.6	8.83	220.2	
05/22/2022	09:52:24	138	6.7	8.47	223.5	
05/22/2022	09:52:54	128	6.6	8.36	226.8	
05/22/2022	09:53:24	108	6.6	8.37	230.1	
05/22/2022	09:53:54	136	6.6	8.82	233.4	
05/22/2022	09:54:24	138	6.6	8.39	236.7	
05/22/2022	09:54:54	118	5.6	8.59	240.0	
05/22/2022	09:55:24	221	6.6	8.36	243.2	
05/22/2022	09:55:54	242	6.5	8.35	246.4	
05/22/2022	09:56:00	213	6.5	8.35	247.1	Drop Top Plug
05/22/2022	09:56:01	225	6.5	8.35	247.2	DISPLACE 144.5BBL WATER
05/22/2022	09:56:24	226	6.5	8.35	249.7	
05/22/2022	09:56:54	271	6.5	8.35	252.9	
05/22/2022	09:57:24	274	6.5	8.35	256.2	
05/22/2022	09:57:54	296	6.5	8.35	259.4	
05/22/2022	09:58:24	352	6.6	8.35	262.6	
05/22/2022	09:58:54	326	6.5	8.35	265.9	
05/22/2022	09:59:24	436	6.5	8.35	269.2	
05/22/2022	09:59:54	442	6.5	8.35	272.4	
05/22/2022	10:00:24	477	6.5	8.35	275.6	
05/22/2022	10:00:54	436	6.5	8.35	278.9	
05/22/2022	10:01:24	468	6.5	8.35	282.1	
05/22/2022	10:01:54	541	6.4	8.35	285.3	
05/22/2022	10:02:24	534	6.4	8.35	288.5	
05/22/2022	10:02:54	643	6.4	8.35	291.8	
05/22/2022	10:03:24	665	6.4	8.35	295.0	
05/22/2022	10:03:54	631	6.4	8.35	298.2	
05/22/2022	10:04:24	735	6.4	8.35	301.4	
05/22/2022	10:04:54	685	6.4	8.35	304.6	
05/22/2022	10:05:24	696	6.4	8.35	307.9	
05/22/2022	10:05:54	822	6.4	8.35	311.1	
05/22/2022	10:06:24	796	6.4	8.35	314.3	
05/22/2022	10:06:54	857	6.4	8.35	317.5	
05/22/2022	10:07:24	786	6.4	8.35	320.7	
05/22/2022	10:07:54	861	6.4	8.35	323.9	
05/22/2022	10:08:24	839	6.4	8.35	327.1	
05/22/2022	10:08:54	829	6.4	8.35	330.3	
05/22/2022	10:08:56	890	6.4	8.35	330.6	44BBL CEMENT TO SURFACE
05/22/2022	10:09:24	945	6.4	8.35	333.6	
05/22/2022	10:09:54	900	6.4	8.35	336.8	
05/22/2022	10:10:24	932	4.5	8.35	339.6	
05/22/2022	10:10:54	930	5.6	8.35	341.9	
05/22/2022	10:11:24	966	5.6	8.35	344.8	
05/22/2022	10:11:54	880	3.0	8.35	347.0	
05/22/2022	10:12:24	763	2.9	8.35	348.5	
05/22/2022	10:12:54	824	2.9	8.35	349.9	
05/22/2022	10:13:24	852	3.0	8.35	351.4	
05/22/2022	10:13:54	909	3.0	8.35	352.9	
05/22/2022	10:14:24	972	3.0	8.35	354.4	
05/22/2022	10:14:54	865	3.0	8.35	355.9	
05/22/2022	10:15:24	951	3.0	8.35	357.4	
05/22/2022	10:15:54	909	3.0	8.35	358.9	
05/22/2022	10:16:24	920	3.0	8.35	360.4	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH 8H	OHIO COUNTY	May/22/2022	SWN	EOHC-00682

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
05/22/2022	10:17:24	1391	0.0	8.35	361.8	
05/22/2022	10:17:32	1390	0.0	8.35	361.8	BUMP PLUG TO 1400PSI
05/22/2022	10:17:54	1385	0.0	8.35	361.8	
05/22/2022	10:18:24	1375	0.0	8.35	361.8	
05/22/2022	10:18:54	1365	0.0	8.35	361.8	
05/22/2022	10:19:24	1354	0.0	8.35	361.8	
05/22/2022	10:19:54	1345	0.0	8.35	361.8	
05/22/2022	10:20:54	1329	0.0	8.35	361.8	
05/22/2022	10:21:24	1323	0.0	8.36	361.8	
05/22/2022	10:21:54	15	0.0	8.36	361.8	
05/22/2022	10:22:08	15	0.0	8.36	361.8	CHECK FLOATS .25BBL BACK

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
5.3			6.8	171.0	0.0	25.0	

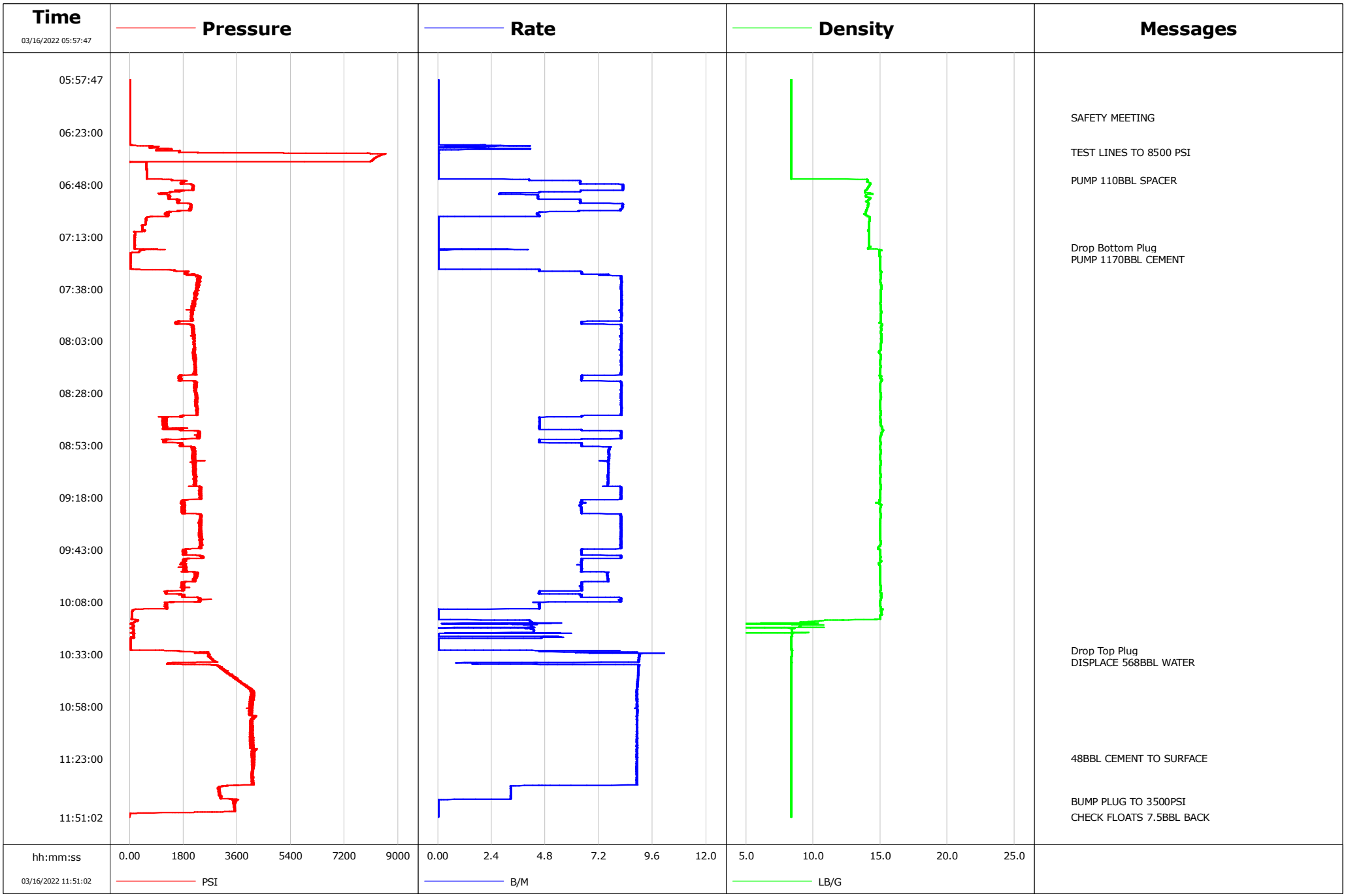
Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
5075	15	479	1400			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
0.0 %	171.0 bbl	144.5 bbl	70 degF	Cement Circulated to Surface? [X]	Volume 44.0 bbl
				Washed Thru Perfs [ ]	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
	MATTHEW MORRIS	-	[X] -

Schlumberger Cementing Job Report

Well	CARL ROTTER OHI 206H	**Client**	SWN
Field	OHIO COUNTY	**SIR No.**	EN82-04038
Engineer	MATTHEW MORRIS	**Job Type**	5.5 PRODUCTION
Country	United States	**Job Date**	03-15-2022



Schlumberger

Cementing Service Report

Customer	Job Number
SWN	EN82-04038

Well	Location (legal)	Schlumberger Location	Job Start
CARL ROTTER OHI 206H	WV	STRASBURG	Mar/15/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
OHIO COUNTY	SHALE	90 deg	8.5 in	25623.0 ft	6599.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
OHIO	West Virginia	0 psi	135 degF	134 degF	0.00 lb/gal

Well Master	API/UWI
0066462100	47-069-00329-00-00

Rig Name	Drilled For	Service Via
SDC 40	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
OBM	13.80 lb/gal	0.000 cP

Service Line	Job Type
Cementing	5.5 PRODUCTION

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
12640 psi	11080 psi	Single Cement head

Service Instructions

TEST LINES TO 8500PSI, PUMP 110BBL SPACER
DROP BOTTOM PLUG
PUMP 1170BBL CEMENT @ 15PPG, Y-1.29, W-6.02, 5095SKS
DROP TOP PLUG, DISPLACE 568BBL FRESH WATER
BUMP PLUG, CHECK FLOATS
WATER TEST, C-20, S-200, TEMP-65, PH-7

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
2189.0	9.6	36.0	J55	BUTT
25629.0	5.5	20.0	P110	BUTT

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
	0.0	0.0	0.0	0	0
	0.0	0.0	0.0	0	0

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
0.0 ft	0.0 ft	0.00	0	0.0 ft
0.0 ft	0.0 ft	0.00	0	Diameter
0.0 ft	0.0 ft	0.00	0	0.000 in

Treat Down	Displacement	Packer Type	Packer Depth
CASING	568.0 bbl	None	0.0 ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
0.0 bbl	569.0 bbl	1078.0 bbl	973.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
X	X

Lift Pressure	Pipe Rotated	Pipe Reciprocated
3000 psi	X	

No. Centralizers	Top Plugs	Bottom Plugs
0	1	1

Cement Head Type
SINGLE

Job Scheduled For	Arrived on Location	Leave Location
Mar/15/2022 20:00	Mar/15/2022 20:00	Mar/16/2022 14:00

Casing Tools

Shoe Type	Guide
Shoe Depth	25629.0 ft
Stage Tool Type	NA
Stage Tool Depth	0.0 ft
Collar Type	FLOAT
Collar Depth	25575.0 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	05:57:47	5	0.0	8.38	0.0	Stopped Acquisition
03/16/2022	05:58:17	5	0.0	8.38	0.0	
03/16/2022	05:58:47	5	0.0	8.38	0.0	
03/16/2022	05:59:17	5	0.0	8.38	0.0	
03/16/2022	06:00:17	5	0.0	8.38	0.0	
03/16/2022	06:00:47	5	0.0	8.38	0.0	
03/16/2022	06:01:17	5	0.0	8.38	0.0	
03/16/2022	06:01:47	5	0.0	8.38	0.0	
03/16/2022	06:02:17	5	0.0	8.38	0.0	
03/16/2022	06:02:47	5	0.0	8.38	0.0	
03/16/2022	06:03:17	5	0.0	8.38	0.0	
03/16/2022	06:03:47	5	0.0	8.38	0.0	
03/16/2022	06:04:17	5	0.0	8.38	0.0	
03/16/2022	06:04:47	5	0.0	8.38	0.0	
03/16/2022	06:05:17	5	0.0	8.38	0.0	
03/16/2022	06:05:47	5	0.0	8.38	0.0	
03/16/2022	06:06:17	5	0.0	8.38	0.0	
03/16/2022	06:06:47	5	0.0	8.38	0.0	
03/16/2022	06:07:17	5	0.0	8.38	0.0	
03/16/2022	06:07:47	5	0.0	8.38	0.0	
03/16/2022	06:08:17	5	0.0	8.38	0.0	

Well	Field	Job Start	Customer	Job Number
CARL ROTTER OHI 206H	OHIO COUNTY	Mar/15/2022	SWN	EN82-04038

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	06:09:17	5	0.0	8.38	0.0	
03/16/2022	06:09:47	5	0.0	8.38	0.0	
03/16/2022	06:10:17	5	0.0	8.38	0.0	
03/16/2022	06:10:47	5	0.0	8.38	0.0	
03/16/2022	06:11:17	5	0.0	8.38	0.0	
03/16/2022	06:11:47	5	0.0	8.38	0.0	
03/16/2022	06:12:17	5	0.0	8.38	0.0	
03/16/2022	06:12:47	5	0.0	8.38	0.0	
03/16/2022	06:13:17	5	0.0	8.38	0.0	
03/16/2022	06:13:47	5	0.0	8.38	0.0	
03/16/2022	06:14:17	5	0.0	8.38	0.0	
03/16/2022	06:14:47	5	0.0	8.38	0.0	
03/16/2022	06:15:17	5	0.0	8.38	0.0	
03/16/2022	06:15:47	5	0.0	8.38	0.0	
03/16/2022	06:15:58	5	0.0	8.38	0.0	SAFETY MEETING
03/16/2022	06:16:17	5	0.0	8.38	0.0	
03/16/2022	06:16:47	5	0.0	8.38	0.0	
03/16/2022	06:17:17	6	0.0	8.38	0.0	
03/16/2022	06:17:47	5	0.0	8.38	0.0	
03/16/2022	06:18:17	5	0.0	8.38	0.0	
03/16/2022	06:18:47	5	0.0	8.38	0.0	
03/16/2022	06:19:17	5	0.0	8.38	0.0	
03/16/2022	06:19:47	5	0.0	8.38	0.0	
03/16/2022	06:20:17	5	0.0	8.38	0.0	
03/16/2022	06:20:47	5	0.0	8.38	0.0	
03/16/2022	06:21:17	5	0.0	8.38	0.0	
03/16/2022	06:21:47	5	0.0	8.38	0.0	
03/16/2022	06:22:17	5	0.0	8.38	0.0	
03/16/2022	06:22:47	5	0.0	8.38	0.0	
03/16/2022	06:23:17	-1	0.0	8.38	0.0	
03/16/2022	06:23:47	-0	0.0	8.38	0.0	
03/16/2022	06:24:17	-1	0.0	8.38	0.0	
03/16/2022	06:24:47	-1	0.0	8.38	0.0	
03/16/2022	06:25:17	-1	0.0	8.38	0.0	
03/16/2022	06:25:47	12	0.0	8.38	0.0	
03/16/2022	06:26:17	13	0.0	8.38	0.0	
03/16/2022	06:26:47	12	0.0	8.38	0.0	
03/16/2022	06:27:17	13	0.0	8.38	0.0	
03/16/2022	06:27:47	13	0.0	8.38	0.0	
03/16/2022	06:28:17	13	0.0	8.38	0.0	
03/16/2022	06:28:47	14	0.0	8.38	0.0	
03/16/2022	06:29:17	41	1.1	8.38	0.5	
03/16/2022	06:29:47	852	2.3	8.38	1.9	
03/16/2022	06:30:17	674	0.0	8.38	2.3	
03/16/2022	06:30:47	1259	4.0	8.38	2.8	
03/16/2022	06:31:17	1138	2.4	8.38	4.8	
03/16/2022	06:31:47	872	0.0	8.38	4.9	
03/16/2022	06:32:17	1651	0.0	8.38	4.9	
03/16/2022	06:32:34	1643	0.0	8.38	4.9	TEST LINES TO 8500 PSI
03/16/2022	06:32:47	2277	0.0	8.38	4.9	
03/16/2022	06:33:47	8458	0.0	8.38	5.0	
03/16/2022	06:34:17	8367	0.0	8.38	5.0	
03/16/2022	06:34:47	8288	0.0	8.38	5.0	
03/16/2022	06:35:17	8227	0.0	8.38	5.0	

Well	Field	Job Start	Customer	Job Number
CARL ROTTER OHI 206H	OHIO COUNTY	Mar/15/2022	SWN	EN82-04038

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	06:36:17	8141	0.0	8.38	5.0	
03/16/2022	06:36:47	8107	0.0	8.38	5.0	
03/16/2022	06:37:17	2	0.0	8.38	5.0	
03/16/2022	06:37:47	544	0.0	8.38	5.0	
03/16/2022	06:38:17	543	0.0	8.38	5.0	
03/16/2022	06:38:47	545	0.0	8.38	5.0	
03/16/2022	06:39:17	546	0.0	8.38	5.0	
03/16/2022	06:39:47	548	0.0	8.38	5.0	
03/16/2022	06:40:17	550	0.0	8.38	5.0	
03/16/2022	06:40:47	551	0.0	8.38	5.0	
03/16/2022	06:41:17	551	0.0	8.38	5.0	
03/16/2022	06:41:47	553	0.0	8.38	5.0	
03/16/2022	06:42:17	553	0.0	8.38	5.0	
03/16/2022	06:42:47	554	0.0	8.38	5.0	
03/16/2022	06:43:17	555	0.0	8.38	5.0	
03/16/2022	06:43:47	556	0.0	8.38	5.0	
03/16/2022	06:44:17	557	0.0	8.38	5.0	
03/16/2022	06:44:47	557	0.0	8.38	5.0	
03/16/2022	06:45:17	558	0.0	8.37	5.0	
03/16/2022	06:45:46	1423	4.1	14.02	6.1	PUMP 110BBL SPACER
03/16/2022	06:45:47	1414	4.1	14.03	6.2	
03/16/2022	06:46:17	1843	6.4	14.05	8.6	
03/16/2022	06:46:47	1810	6.4	14.02	11.8	
03/16/2022	06:47:17	1765	6.3	14.21	15.0	
03/16/2022	06:47:47	1846	6.7	14.25	18.2	
03/16/2022	06:48:17	2092	8.3	14.22	22.2	
03/16/2022	06:48:47	2118	8.3	14.16	26.4	
03/16/2022	06:49:17	2165	8.3	14.10	30.5	
03/16/2022	06:49:47	2098	8.3	14.05	34.6	
03/16/2022	06:50:17	2107	8.3	14.02	38.8	
03/16/2022	06:50:47	2136	8.3	13.94	42.9	
03/16/2022	06:51:17	1715	6.4	13.85	46.2	
03/16/2022	06:51:47	1351	4.5	13.84	48.9	
03/16/2022	06:52:17	1042	2.8	14.26	50.7	
03/16/2022	06:52:47	1021	2.8	14.42	52.1	
03/16/2022	06:53:17	1292	4.5	13.89	54.2	
03/16/2022	06:53:47	1338	4.5	13.92	56.4	
03/16/2022	06:54:17	1301	4.4	14.17	58.7	
03/16/2022	06:54:47	1343	4.5	14.25	60.9	
03/16/2022	06:55:17	1637	6.4	14.16	63.6	
03/16/2022	06:55:47	1642	6.3	14.10	66.8	
03/16/2022	06:56:17	1666	6.4	13.94	70.0	
03/16/2022	06:56:47	1646	6.4	14.08	73.1	
03/16/2022	06:57:17	1992	8.2	14.12	76.7	
03/16/2022	06:57:47	2044	8.3	14.09	80.9	
03/16/2022	06:58:17	2043	8.2	14.09	85.0	
03/16/2022	06:58:47	2039	8.3	14.07	89.1	
03/16/2022	06:59:17	2059	8.2	14.02	93.3	
03/16/2022	06:59:47	2012	8.2	14.00	97.4	
03/16/2022	07:00:17	2019	8.1	13.96	101.4	
03/16/2022	07:00:47	1692	6.3	13.94	105.1	
03/16/2022	07:01:17	1273	4.5	13.91	107.9	
03/16/2022	07:01:47	1309	4.4	13.92	110.2	
03/16/2022	07:02:17	1172	4.4	13.85	112.4	

Well	Field	Job Start	Customer	Job Number
CARL ROTTER OHI 206H	OHIO COUNTY	Mar/15/2022	SWN	EN82-04038

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	07:03:17	1237	4.6	14.06	116.9	
03/16/2022	07:03:47	576	0.0	14.19	117.3	
03/16/2022	07:04:17	530	0.0	14.18	117.3	
03/16/2022	07:04:47	529	0.0	14.18	117.3	
03/16/2022	07:05:17	531	0.0	14.17	117.3	
03/16/2022	07:05:47	519	0.0	14.17	117.3	
03/16/2022	07:06:17	518	0.0	14.17	117.3	
03/16/2022	07:07:17	508	0.0	14.16	117.3	
03/16/2022	07:07:47	395	0.0	14.16	117.3	
03/16/2022	07:08:17	401	0.0	14.16	117.3	
03/16/2022	07:08:47	402	0.0	14.16	117.3	
03/16/2022	07:09:17	403	0.0	14.16	117.3	
03/16/2022	07:09:47	403	0.0	14.16	117.3	
03/16/2022	07:10:17	476	0.0	14.15	117.3	
03/16/2022	07:10:47	147	0.0	14.15	117.3	
03/16/2022	07:11:17	157	0.0	14.15	117.3	
03/16/2022	07:11:47	158	0.0	14.15	117.3	
03/16/2022	07:12:17	153	0.0	14.15	117.3	
03/16/2022	07:12:47	154	0.0	14.14	117.3	
03/16/2022	07:13:17	153	0.0	14.14	117.3	
03/16/2022	07:13:47	153	0.0	14.14	117.3	
03/16/2022	07:14:17	154	0.0	14.14	117.3	
03/16/2022	07:14:47	154	0.0	14.14	117.3	
03/16/2022	07:15:17	153	0.0	14.14	117.3	
03/16/2022	07:15:47	153	0.0	14.14	117.3	
03/16/2022	07:16:17	153	0.0	14.14	117.3	
03/16/2022	07:16:47	153	0.0	14.14	117.3	
03/16/2022	07:17:17	153	0.0	14.14	117.3	
03/16/2022	07:17:47	152	0.0	14.25	117.3	
03/16/2022	07:18:00	152	0.0	14.26	117.3	Drop Bottom Plug
03/16/2022	07:18:01	152	0.0	14.26	117.3	PUMP 1170BBL CEMENT
03/16/2022	07:18:17	153	0.0	14.08	117.3	
03/16/2022	07:18:47	153	0.0	14.06	117.3	
03/16/2022	07:19:17	617	1.1	15.01	118.2	
03/16/2022	07:19:47	326	0.0	14.95	118.3	
03/16/2022	07:20:17	294	0.0	14.93	118.3	
03/16/2022	07:20:47	45	0.0	14.93	118.3	
03/16/2022	07:21:17	13	0.0	14.93	118.3	
03/16/2022	07:21:47	13	0.0	14.93	118.3	
03/16/2022	07:22:17	13	0.0	14.93	118.3	
03/16/2022	07:22:47	13	0.0	15.02	118.3	
03/16/2022	07:23:17	13	0.0	14.95	118.3	
03/16/2022	07:23:47	12	0.0	14.95	118.3	
03/16/2022	07:24:17	13	0.0	14.95	118.3	
03/16/2022	07:24:47	12	0.0	14.95	118.3	
03/16/2022	07:25:17	13	0.0	14.95	118.3	
03/16/2022	07:25:47	13	0.0	14.95	118.3	
03/16/2022	07:26:17	12	0.0	14.95	118.3	
03/16/2022	07:26:47	12	0.0	14.95	118.3	
03/16/2022	07:27:17	12	0.0	14.95	118.3	
03/16/2022	07:27:47	12	0.0	14.95	118.3	
03/16/2022	07:28:17	12	0.0	14.95	118.3	
03/16/2022	07:28:47	409	4.6	14.97	119.1	
03/16/2022	07:29:17	1479	4.5	14.98	121.4	

Well	Field	Job Start	Customer	Job Number
CARL ROTTER OHI 206H	OHIO COUNTY	Mar/15/2022	SWN	EN82-04038

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	07:30:17	1875	6.4	15.06	127.2	
03/16/2022	07:30:47	1835	6.4	15.04	130.4	
03/16/2022	07:31:17	2169	7.6	15.03	134.0	
03/16/2022	07:31:47	2266	8.2	15.05	137.9	
03/16/2022	07:32:17	2327	8.2	15.03	142.0	
03/16/2022	07:32:47	2356	8.2	15.03	146.1	
03/16/2022	07:33:17	2265	8.2	15.02	150.2	
03/16/2022	07:33:47	2353	8.2	15.01	154.3	
03/16/2022	07:34:17	2324	8.2	15.00	158.4	
03/16/2022	07:34:47	2283	8.2	15.01	162.5	
03/16/2022	07:35:17	2261	8.2	15.03	166.6	
03/16/2022	07:35:47	2321	8.2	15.05	170.7	
03/16/2022	07:36:17	2231	8.2	15.06	174.8	
03/16/2022	07:36:47	2240	8.2	15.07	178.9	
03/16/2022	07:37:17	2306	8.2	15.07	183.0	
03/16/2022	07:37:47	2242	8.2	15.07	187.1	
03/16/2022	07:38:17	2224	8.2	15.07	191.2	
03/16/2022	07:38:47	2252	8.2	15.04	195.3	
03/16/2022	07:39:17	2221	8.2	15.04	199.4	
03/16/2022	07:39:47	2206	8.2	15.03	203.5	
03/16/2022	07:40:47	2231	8.2	15.04	211.7	
03/16/2022	07:41:17	2189	8.2	15.04	215.8	
03/16/2022	07:41:47	2152	8.2	15.05	219.9	
03/16/2022	07:42:17	2189	8.2	15.05	224.0	
03/16/2022	07:42:47	2133	8.2	15.04	228.1	
03/16/2022	07:43:17	2180	8.2	15.03	232.2	
03/16/2022	07:43:47	2159	8.2	15.03	236.3	
03/16/2022	07:44:17	2137	8.2	15.03	240.4	
03/16/2022	07:44:47	2168	8.2	15.02	244.5	
03/16/2022	07:45:17	2081	8.2	15.02	248.6	
03/16/2022	07:45:47	2147	8.2	15.02	252.7	
03/16/2022	07:46:17	2122	8.2	15.02	256.8	
03/16/2022	07:46:47	2071	8.2	15.03	260.9	
03/16/2022	07:47:17	2138	8.2	15.03	265.0	
03/16/2022	07:47:47	2115	8.2	15.04	269.1	
03/16/2022	07:48:17	2073	8.2	15.04	273.2	
03/16/2022	07:48:47	2087	8.2	15.06	277.3	
03/16/2022	07:49:17	2079	8.2	15.06	281.3	
03/16/2022	07:49:47	2061	8.2	15.05	285.5	
03/16/2022	07:50:17	2055	8.2	15.04	289.6	
03/16/2022	07:50:47	2053	8.2	15.04	293.7	
03/16/2022	07:51:17	2073	8.2	15.05	297.8	
03/16/2022	07:51:47	2076	8.2	15.04	301.9	
03/16/2022	07:52:17	2055	8.2	15.04	305.9	
03/16/2022	07:52:47	2068	8.2	15.05	310.0	
03/16/2022	07:53:17	2079	8.2	15.05	314.1	
03/16/2022	07:53:47	1588	6.4	15.03	317.8	
03/16/2022	07:54:17	1496	6.4	14.94	321.0	
03/16/2022	07:54:47	1537	6.4	15.10	324.2	
03/16/2022	07:55:17	2037	8.2	15.12	328.0	
03/16/2022	07:55:47	2115	8.2	15.08	332.1	
03/16/2022	07:56:17	2126	8.2	15.05	336.2	
03/16/2022	07:56:47	2104	8.2	15.06	340.3	
03/16/2022	07:57:17	2107	8.2	15.06	344.3	

Well	Field	Job Start	Customer	Job Number
CARL ROTTER OHI 206H	OHIO COUNTY	Mar/15/2022	SWN	EN82-04038

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	07:58:17	2113	8.2	15.05	352.5	
03/16/2022	07:58:47	2111	8.2	15.04	356.6	
03/16/2022	07:59:17	2104	8.2	15.05	360.7	
03/16/2022	07:59:47	2107	8.2	15.08	364.8	
03/16/2022	08:00:17	2125	8.2	15.09	368.9	
03/16/2022	08:00:47	2151	8.2	15.08	373.0	
03/16/2022	08:01:17	2181	8.2	15.08	377.1	
03/16/2022	08:01:47	2138	8.2	15.06	381.2	
03/16/2022	08:02:17	2146	8.2	15.07	385.3	
03/16/2022	08:02:47	2155	8.2	15.08	389.4	
03/16/2022	08:03:17	2139	8.2	15.08	393.5	
03/16/2022	08:03:47	2141	8.2	15.06	397.6	
03/16/2022	08:04:17	2146	8.2	15.05	401.7	
03/16/2022	08:04:47	2143	8.2	15.04	405.8	
03/16/2022	08:05:17	2156	8.2	15.04	409.9	
03/16/2022	08:05:47	2123	8.2	15.05	414.0	
03/16/2022	08:06:17	2166	8.2	15.05	418.1	
03/16/2022	08:06:47	2157	8.2	15.05	422.2	
03/16/2022	08:07:17	2151	8.2	15.01	426.2	
03/16/2022	08:07:47	2136	8.2	14.94	430.3	
03/16/2022	08:08:17	2153	8.2	14.89	434.4	
03/16/2022	08:08:47	2147	8.2	14.93	438.5	
03/16/2022	08:09:17	2135	8.2	15.00	442.6	
03/16/2022	08:09:47	2187	8.2	15.04	446.7	
03/16/2022	08:10:17	2178	8.2	15.05	450.8	
03/16/2022	08:10:47	2153	8.2	15.03	454.9	
03/16/2022	08:11:17	2183	8.2	15.03	459.0	
03/16/2022	08:11:47	2175	8.2	15.02	463.1	
03/16/2022	08:12:17	2120	8.2	15.00	467.2	
03/16/2022	08:12:47	2158	8.2	14.99	471.3	
03/16/2022	08:13:17	2186	8.2	15.00	475.4	
03/16/2022	08:14:17	2179	8.2	15.01	483.6	
03/16/2022	08:14:47	2203	8.2	15.02	487.7	
03/16/2022	08:15:17	2210	8.2	15.03	491.8	
03/16/2022	08:15:47	2183	8.2	15.01	495.9	
03/16/2022	08:16:17	2167	8.2	14.99	500.0	
03/16/2022	08:16:47	2201	8.2	14.98	504.1	
03/16/2022	08:17:17	2217	8.2	14.98	508.2	
03/16/2022	08:17:47	2168	8.2	14.98	512.3	
03/16/2022	08:18:17	2214	8.2	14.98	516.4	
03/16/2022	08:18:47	2194	8.2	14.99	520.5	
03/16/2022	08:19:17	2164	8.2	14.97	524.6	
03/16/2022	08:19:47	1683	6.4	15.08	527.9	
03/16/2022	08:20:17	1639	6.4	14.98	531.1	
03/16/2022	08:20:47	1654	6.5	14.97	534.3	
03/16/2022	08:21:17	1608	6.4	15.09	537.5	
03/16/2022	08:21:47	1628	6.4	15.11	540.8	
03/16/2022	08:22:17	2161	8.2	15.07	544.2	
03/16/2022	08:22:47	2245	8.2	15.03	548.3	
03/16/2022	08:23:17	2208	8.2	15.00	552.4	
03/16/2022	08:23:47	2175	8.2	15.00	556.5	
03/16/2022	08:24:17	2206	8.2	15.00	560.6	
03/16/2022	08:24:47	2183	8.2	15.00	564.7	
03/16/2022	08:25:17	2158	8.2	15.00	568.8	

Well	Field	Job Start	Customer	Job Number
CARL ROTTER OHI 206H	OHIO COUNTY	Mar/15/2022	SWN	EN82-04038

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	08:26:17	2214	8.2	15.00	577.0	
03/16/2022	08:26:47	2175	8.2	14.99	581.1	
03/16/2022	08:27:17	2159	8.2	15.00	585.1	
03/16/2022	08:27:47	2230	8.2	15.02	589.2	
03/16/2022	08:28:17	2213	8.2	15.03	593.3	
03/16/2022	08:28:47	2201	8.2	15.04	597.4	
03/16/2022	08:29:17	2232	8.2	15.04	601.5	
03/16/2022	08:29:47	2247	8.2	15.05	605.6	
03/16/2022	08:30:17	2237	8.2	15.04	609.7	
03/16/2022	08:30:47	2229	8.2	15.03	613.8	
03/16/2022	08:31:17	2243	8.2	15.01	617.9	
03/16/2022	08:31:47	2231	8.2	15.00	622.0	
03/16/2022	08:32:17	2210	8.2	14.96	626.1	
03/16/2022	08:32:47	2226	8.2	14.95	630.2	
03/16/2022	08:33:17	2217	8.2	14.95	634.3	
03/16/2022	08:33:47	2186	8.2	14.97	638.4	
03/16/2022	08:34:17	2207	8.2	14.98	642.5	
03/16/2022	08:34:47	2236	8.2	14.98	646.6	
03/16/2022	08:35:17	2250	8.2	15.00	650.7	
03/16/2022	08:35:47	2234	8.2	15.01	654.8	
03/16/2022	08:36:17	2271	8.2	15.02	658.9	
03/16/2022	08:36:47	2272	8.2	15.02	663.0	
03/16/2022	08:37:17	2235	8.2	15.03	667.1	
03/16/2022	08:37:47	2245	8.2	15.02	671.1	
03/16/2022	08:38:17	2268	8.2	15.02	675.2	
03/16/2022	08:38:47	1724	6.4	15.01	679.0	
03/16/2022	08:39:17	1724	6.4	15.01	682.3	
03/16/2022	08:39:47	1252	4.5	15.01	684.7	
03/16/2022	08:40:17	1106	4.5	15.01	687.0	
03/16/2022	08:40:47	1196	4.5	15.02	689.3	
03/16/2022	08:41:17	1091	4.5	15.01	691.5	
03/16/2022	08:41:47	1231	4.5	15.02	693.8	
03/16/2022	08:42:17	1204	4.5	15.02	696.1	
03/16/2022	08:42:47	1161	4.5	15.02	698.3	
03/16/2022	08:43:17	1167	4.6	15.02	700.6	
03/16/2022	08:43:47	1124	4.5	15.07	702.9	
03/16/2022	08:44:17	1116	4.5	15.11	705.1	
03/16/2022	08:44:47	1796	4.5	15.11	707.4	
03/16/2022	08:45:17	1161	4.5	15.15	709.7	
03/16/2022	08:45:47	1739	6.4	15.20	712.7	
03/16/2022	08:46:17	2279	8.2	15.17	716.7	
03/16/2022	08:46:47	2324	8.2	15.11	720.8	
03/16/2022	08:47:47	2267	8.2	15.06	729.0	
03/16/2022	08:48:17	2283	8.2	15.05	733.1	
03/16/2022	08:48:47	2349	8.2	15.02	737.1	
03/16/2022	08:49:17	2266	8.2	15.00	741.2	
03/16/2022	08:49:47	2289	8.2	15.00	745.3	
03/16/2022	08:50:17	1162	4.5	14.97	748.3	
03/16/2022	08:50:47	1105	4.5	14.97	750.5	
03/16/2022	08:51:17	1208	4.5	15.00	752.8	
03/16/2022	08:51:47	1570	6.3	15.03	755.2	
03/16/2022	08:52:17	1748	6.4	15.02	758.4	
03/16/2022	08:52:47	1689	6.4	15.01	761.6	
03/16/2022	08:53:17	1700	6.4	14.99	764.8	

Well	Field	Job Start	Customer	Job Number
CARL ROTTER OHI 206H	OHIO COUNTY	Mar/15/2022	SWN	EN82-04038

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	08:54:17	2045	7.7	15.00	772.1	
03/16/2022	08:54:47	2126	7.6	15.01	776.0	
03/16/2022	08:55:17	2125	7.7	15.02	779.8	
03/16/2022	08:55:47	2082	7.6	15.04	783.6	
03/16/2022	08:56:17	2134	7.6	15.03	787.4	
03/16/2022	08:56:47	2066	7.6	15.02	791.2	
03/16/2022	08:57:17	2056	7.6	15.02	795.1	
03/16/2022	08:57:47	2154	7.6	15.01	798.9	
03/16/2022	08:58:17	2051	7.7	15.00	802.7	
03/16/2022	08:58:47	2131	7.6	14.99	806.5	
03/16/2022	08:59:17	2139	7.6	14.97	810.3	
03/16/2022	08:59:47	2081	7.6	14.99	814.2	
03/16/2022	09:00:17	2144	7.6	15.02	818.0	
03/16/2022	09:00:47	2084	7.6	15.04	821.8	
03/16/2022	09:01:17	2178	7.6	15.03	825.6	
03/16/2022	09:01:47	2148	7.6	15.03	829.4	
03/16/2022	09:02:17	2122	7.6	15.02	833.2	
03/16/2022	09:02:47	2166	7.6	15.01	837.0	
03/16/2022	09:03:17	2081	7.6	15.00	840.8	
03/16/2022	09:03:47	2104	7.6	14.98	844.6	
03/16/2022	09:04:17	2121	7.6	14.98	848.4	
03/16/2022	09:04:47	2097	7.6	14.98	852.2	
03/16/2022	09:05:17	2170	7.6	14.98	856.0	
03/16/2022	09:05:47	2155	7.6	14.96	859.8	
03/16/2022	09:06:17	2126	7.6	14.98	863.6	
03/16/2022	09:06:47	2158	7.6	15.02	867.5	
03/16/2022	09:07:17	2073	7.6	15.05	871.3	
03/16/2022	09:07:47	2196	7.6	15.04	875.0	
03/16/2022	09:08:17	2151	7.6	15.01	878.8	
03/16/2022	09:08:47	2186	7.6	14.98	882.6	
03/16/2022	09:09:17	2157	7.6	14.97	886.5	
03/16/2022	09:09:47	2100	7.6	14.97	890.3	
03/16/2022	09:10:17	2110	7.6	14.98	894.1	
03/16/2022	09:10:47	2190	7.6	14.99	897.9	
03/16/2022	09:11:17	2141	7.6	15.00	901.7	
03/16/2022	09:11:47	2189	7.6	15.02	905.4	
03/16/2022	09:12:17	2191	7.6	15.04	909.2	
03/16/2022	09:12:47	2353	8.2	15.05	913.1	
03/16/2022	09:13:17	2381	8.2	15.04	917.2	
03/16/2022	09:13:47	2378	8.2	15.04	921.3	
03/16/2022	09:14:17	2357	8.2	14.98	925.4	
03/16/2022	09:14:47	2344	8.2	14.97	929.5	
03/16/2022	09:15:17	2330	8.2	14.98	933.6	
03/16/2022	09:15:47	2323	8.2	14.99	937.7	
03/16/2022	09:16:17	2350	8.2	14.99	941.7	
03/16/2022	09:16:47	2345	8.2	14.99	945.8	
03/16/2022	09:17:17	2390	8.2	14.98	949.9	
03/16/2022	09:17:47	2360	8.2	14.99	954.0	
03/16/2022	09:18:17	2373	8.2	15.00	958.1	
03/16/2022	09:18:47	2391	8.2	15.00	962.2	
03/16/2022	09:19:17	1839	6.4	14.94	965.6	
03/16/2022	09:19:47	1795	6.4	14.95	968.8	
03/16/2022	09:20:17	1792	6.4	14.89	972.0	
03/16/2022	09:21:17	1740	6.3	15.04	978.4	

Well	Field	Job Start	Customer	Job Number
CARL ROTTER OHI 206H	OHIO COUNTY	Mar/15/2022	SWN	EN82-04038

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	09:22:17	1808	6.4	15.04	984.8	
03/16/2022	09:22:47	1734	6.4	15.01	988.0	
03/16/2022	09:23:17	1817	6.4	15.00	991.2	
03/16/2022	09:23:47	1684	6.4	14.99	994.4	
03/16/2022	09:24:17	1741	6.4	14.98	997.6	
03/16/2022	09:24:47	1763	6.4	14.98	1000.8	
03/16/2022	09:25:17	1699	6.4	15.01	1004.0	
03/16/2022	09:25:47	2308	8.1	15.03	1007.4	
03/16/2022	09:26:17	2381	8.2	15.03	1011.5	
03/16/2022	09:26:47	2344	8.2	15.03	1015.6	
03/16/2022	09:27:47	2351	8.2	15.02	1023.7	
03/16/2022	09:28:17	2355	8.2	15.02	1027.8	
03/16/2022	09:28:47	2327	8.2	15.01	1031.9	
03/16/2022	09:29:17	2380	8.2	15.01	1036.0	
03/16/2022	09:29:47	2315	8.2	14.99	1040.1	
03/16/2022	09:30:17	2330	8.2	14.98	1044.2	
03/16/2022	09:30:47	2347	8.2	14.98	1048.3	
03/16/2022	09:31:17	2333	8.2	14.99	1052.3	
03/16/2022	09:31:47	2336	8.2	14.99	1056.4	
03/16/2022	09:32:17	2344	8.2	14.99	1060.5	
03/16/2022	09:32:47	2352	8.2	15.00	1064.6	
03/16/2022	09:33:17	2361	8.2	15.00	1068.7	
03/16/2022	09:33:47	2327	8.2	15.00	1072.8	
03/16/2022	09:34:17	2382	8.2	15.00	1076.9	
03/16/2022	09:34:47	2374	8.2	15.01	1081.0	
03/16/2022	09:35:17	2316	8.2	15.01	1085.1	
03/16/2022	09:35:47	2370	8.2	15.00	1089.2	
03/16/2022	09:36:17	2325	8.2	15.00	1093.3	
03/16/2022	09:36:47	2337	8.2	14.99	1097.3	
03/16/2022	09:37:17	2321	8.2	15.00	1101.4	
03/16/2022	09:37:47	2418	8.2	15.01	1105.5	
03/16/2022	09:38:17	2327	8.2	15.01	1109.6	
03/16/2022	09:38:47	2391	8.2	15.02	1113.7	
03/16/2022	09:39:17	2359	8.2	15.03	1117.8	
03/16/2022	09:39:47	2392	8.2	15.03	1121.9	
03/16/2022	09:40:17	2347	8.2	15.02	1126.0	
03/16/2022	09:40:47	2402	8.2	15.00	1130.0	
03/16/2022	09:41:17	2358	8.2	14.95	1134.1	
03/16/2022	09:41:47	2359	8.2	14.86	1138.2	
03/16/2022	09:42:17	2335	8.2	14.84	1142.3	
03/16/2022	09:42:47	1828	6.4	14.94	1145.9	
03/16/2022	09:43:17	1773	6.4	14.99	1149.1	
03/16/2022	09:43:47	1791	6.4	15.00	1152.4	
03/16/2022	09:44:17	1772	6.4	15.00	1155.6	
03/16/2022	09:44:47	1749	6.4	14.99	1158.8	
03/16/2022	09:45:17	1843	6.4	15.00	1162.0	
03/16/2022	09:45:47	2340	8.2	15.01	1165.6	
03/16/2022	09:46:17	2370	8.2	15.02	1169.7	
03/16/2022	09:46:47	2465	8.2	15.02	1173.8	
03/16/2022	09:47:17	1848	6.4	14.98	1177.5	
03/16/2022	09:47:47	1822	6.4	14.99	1180.7	
03/16/2022	09:48:17	1865	6.4	15.04	1183.9	
03/16/2022	09:48:47	1745	6.4	15.03	1187.1	
03/16/2022	09:49:17	1772	6.4	14.92	1190.3	

Well	Field	Job Start	Customer	Job Number
CARL ROTTER OHI 206H	OHIO COUNTY	Mar/15/2022	SWN	EN82-04038

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	09:50:17	1732	6.4	14.94	1196.7	
03/16/2022	09:50:47	1839	6.4	14.95	1199.9	
03/16/2022	09:51:17	1791	6.4	14.95	1203.1	
03/16/2022	09:51:47	1808	6.4	14.97	1206.3	
03/16/2022	09:52:17	1863	6.4	14.98	1209.5	
03/16/2022	09:52:47	1759	6.4	14.98	1212.8	
03/16/2022	09:53:17	1835	6.4	14.98	1216.0	
03/16/2022	09:53:47	2117	7.6	14.98	1219.4	
03/16/2022	09:54:47	2194	7.6	14.96	1227.0	
03/16/2022	09:55:17	2193	7.6	14.96	1230.8	
03/16/2022	09:55:47	2199	7.6	14.97	1234.6	
03/16/2022	09:56:17	2129	7.6	14.97	1238.4	
03/16/2022	09:56:47	2110	7.6	14.96	1242.2	
03/16/2022	09:57:17	2128	7.6	14.95	1246.0	
03/16/2022	09:57:47	2104	7.6	14.95	1249.8	
03/16/2022	09:58:17	1851	6.7	14.97	1253.5	
03/16/2022	09:58:47	1798	6.4	15.00	1256.8	
03/16/2022	09:59:17	1705	6.4	15.01	1260.0	
03/16/2022	09:59:47	1759	6.4	15.01	1263.2	
03/16/2022	10:00:17	1742	6.4	15.02	1266.4	
03/16/2022	10:00:47	1710	6.4	15.02	1269.6	
03/16/2022	10:01:17	1795	6.4	15.03	1272.8	
03/16/2022	10:01:47	1713	6.4	15.03	1276.0	
03/16/2022	10:02:17	1761	6.4	15.02	1279.2	
03/16/2022	10:02:47	1204	4.5	14.98	1282.1	
03/16/2022	10:03:17	1200	4.5	14.99	1284.4	
03/16/2022	10:03:47	1191	4.5	15.05	1286.7	
03/16/2022	10:04:17	1710	6.4	15.08	1289.2	
03/16/2022	10:04:47	1805	6.4	15.04	1292.4	
03/16/2022	10:05:17	1816	6.4	15.06	1295.6	
03/16/2022	10:05:47	2216	7.5	15.07	1298.9	
03/16/2022	10:06:17	2338	8.2	15.05	1302.9	
03/16/2022	10:06:47	2355	8.2	15.04	1307.0	
03/16/2022	10:07:17	2324	8.2	15.00	1311.1	
03/16/2022	10:07:47	2326	8.2	15.00	1315.2	
03/16/2022	10:08:17	1234	4.5	14.99	1318.1	
03/16/2022	10:08:47	1178	4.5	14.99	1320.3	
03/16/2022	10:09:17	1227	4.5	14.99	1322.6	
03/16/2022	10:09:47	1215	4.5	14.99	1324.9	
03/16/2022	10:10:17	1235	4.5	15.04	1327.1	
03/16/2022	10:10:47	1243	4.5	15.05	1329.4	
03/16/2022	10:11:17	1236	4.5	15.05	1331.7	
03/16/2022	10:11:47	104	0.0	15.05	1331.9	
03/16/2022	10:12:17	71	0.0	15.05	1331.9	
03/16/2022	10:12:47	64	0.0	15.06	1331.9	
03/16/2022	10:13:17	61	0.0	15.06	1331.9	
03/16/2022	10:13:47	58	0.0	15.06	1331.9	
03/16/2022	10:14:17	57	0.0	15.00	1331.9	
03/16/2022	10:14:47	57	0.0	15.00	1331.9	
03/16/2022	10:15:17	56	0.0	14.99	1331.9	
03/16/2022	10:15:47	54	0.0	15.00	1331.9	
03/16/2022	10:16:17	74	0.0	14.62	1331.9	
03/16/2022	10:16:47	208	4.1	10.80	1332.9	
03/16/2022	10:17:17	225	4.1	10.06	1335.0	

Well	Field	Job Start	Customer	Job Number
CARL ROTTER OHI 206H	OHIO COUNTY	Mar/15/2022	SWN	EN82-04038

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	10:18:17	37	5.1	4.69	1338.8	
03/16/2022	10:18:47	60	4.0	8.42	1340.3	
03/16/2022	10:19:17	121	4.2	9.04	1342.4	
03/16/2022	10:19:47	120	4.2	9.01	1344.5	
03/16/2022	10:20:17	25	0.7	6.43	1346.4	
03/16/2022	10:20:47	80	4.2	8.39	1347.8	
03/16/2022	10:21:17	117	4.3	8.41	1349.9	
03/16/2022	10:21:47	109	4.3	8.40	1352.0	
03/16/2022	10:22:17	115	4.3	8.40	1354.2	
03/16/2022	10:22:47	28	5.5	4.92	1356.0	
03/16/2022	10:23:17	114	0.0	8.43	1357.1	
03/16/2022	10:23:47	135	0.0	8.40	1357.1	
03/16/2022	10:24:17	122	0.0	8.39	1357.1	
03/16/2022	10:24:47	35	5.5	8.37	1359.1	
03/16/2022	10:25:17	127	4.6	8.38	1361.5	
03/16/2022	10:25:47	11	0.0	8.38	1361.8	
03/16/2022	10:26:17	13	0.0	8.38	1361.8	
03/16/2022	10:26:47	15	0.0	8.39	1361.8	
03/16/2022	10:27:17	15	0.0	8.38	1361.8	
03/16/2022	10:27:47	16	0.0	8.38	1361.8	
03/16/2022	10:28:17	15	0.0	8.38	1361.8	
03/16/2022	10:28:47	16	0.0	8.39	1361.8	
03/16/2022	10:29:17	16	0.0	8.39	1361.8	
03/16/2022	10:29:47	15	0.0	8.39	1361.8	
03/16/2022	10:30:17	16	0.0	8.39	1361.8	
03/16/2022	10:30:47	15	0.0	8.39	1361.8	
03/16/2022	10:31:00	35	0.9	8.40	1361.9	Drop Top Plug
03/16/2022	10:31:01	24	1.2	8.41	1361.9	DISPLACE 568BBL WATER
03/16/2022	10:31:17	1463	6.9	8.40	1362.9	
03/16/2022	10:31:47	1729	4.6	8.40	1365.3	
03/16/2022	10:32:17	2245	6.6	8.40	1368.7	
03/16/2022	10:32:47	2599	9.0	8.40	1372.9	
03/16/2022	10:33:17	2618	9.0	8.41	1377.4	
03/16/2022	10:33:47	2668	9.0	8.41	1381.9	
03/16/2022	10:34:47	2696	9.0	8.38	1390.9	
03/16/2022	10:35:17	2735	9.0	8.38	1395.4	
03/16/2022	10:35:47	2776	9.0	8.39	1399.9	
03/16/2022	10:36:17	2854	9.0	8.38	1404.4	
03/16/2022	10:36:47	2948	9.0	8.38	1408.9	
03/16/2022	10:37:17	1290	1.6	8.38	1410.5	
03/16/2022	10:37:47	1632	4.2	8.38	1411.4	
03/16/2022	10:38:17	2941	9.0	8.38	1415.5	
03/16/2022	10:38:47	2991	9.0	8.38	1420.0	
03/16/2022	10:39:17	3012	9.0	8.38	1424.5	
03/16/2022	10:39:47	3063	9.0	8.38	1429.0	
03/16/2022	10:40:17	3091	9.0	8.38	1433.5	
03/16/2022	10:40:47	3177	8.9	8.38	1438.0	
03/16/2022	10:41:17	3204	9.0	8.38	1442.4	
03/16/2022	10:41:47	3215	8.9	8.38	1446.9	
03/16/2022	10:42:17	3263	9.0	8.38	1451.4	
03/16/2022	10:42:47	3388	9.0	8.38	1455.9	
03/16/2022	10:43:17	3428	8.9	8.38	1460.3	
03/16/2022	10:43:47	3415	8.9	8.38	1464.8	
03/16/2022	10:44:17	3478	8.9	8.38	1469.3	

Well	Field	Job Start	Customer	Job Number
CARL ROTTER OHI 206H	OHIO COUNTY	Mar/15/2022	SWN	EN82-04038

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	10:45:17	3617	8.9	8.38	1478.2	
03/16/2022	10:45:47	3616	8.9	8.38	1482.7	
03/16/2022	10:46:17	3650	8.9	8.38	1487.1	
03/16/2022	10:46:47	3790	8.9	8.38	1491.6	
03/16/2022	10:47:17	3824	8.9	8.38	1496.1	
03/16/2022	10:47:47	3832	8.9	8.38	1500.5	
03/16/2022	10:48:17	3874	8.9	8.38	1505.0	
03/16/2022	10:48:47	3901	8.9	8.38	1509.4	
03/16/2022	10:49:17	4061	8.9	8.38	1513.9	
03/16/2022	10:49:47	4081	8.9	8.39	1518.3	
03/16/2022	10:50:17	4032	8.9	8.38	1522.8	
03/16/2022	10:50:47	4080	8.9	8.38	1527.2	
03/16/2022	10:51:17	4118	8.9	8.38	1531.7	
03/16/2022	10:51:47	4117	8.9	8.38	1536.1	
03/16/2022	10:52:17	4106	8.9	8.38	1540.5	
03/16/2022	10:52:47	4062	8.9	8.38	1545.0	
03/16/2022	10:53:17	4136	8.9	8.38	1549.4	
03/16/2022	10:53:47	4127	8.9	8.38	1553.9	
03/16/2022	10:54:17	4068	8.9	8.38	1558.3	
03/16/2022	10:54:47	4056	8.9	8.38	1562.8	
03/16/2022	10:55:17	4031	8.9	8.38	1567.2	
03/16/2022	10:55:47	4138	8.9	8.38	1571.7	
03/16/2022	10:56:17	4108	8.9	8.38	1576.1	
03/16/2022	10:56:47	4007	8.9	8.38	1580.6	
03/16/2022	10:57:17	4044	8.9	8.38	1585.0	
03/16/2022	10:57:47	4058	8.9	8.38	1589.5	
03/16/2022	10:58:17	4065	8.9	8.38	1593.9	
03/16/2022	10:58:47	4016	8.9	8.38	1598.4	
03/16/2022	10:59:17	3987	8.9	8.38	1602.8	
03/16/2022	10:59:47	4097	8.9	8.38	1607.2	
03/16/2022	11:00:17	4086	8.9	8.38	1611.7	
03/16/2022	11:00:47	4024	8.9	8.38	1616.1	
03/16/2022	11:01:17	4036	8.9	8.38	1620.6	
03/16/2022	11:01:47	3985	8.9	8.38	1625.1	
03/16/2022	11:02:17	4101	8.9	8.38	1629.5	
03/16/2022	11:02:47	4218	8.9	8.38	1634.0	
03/16/2022	11:03:17	4105	8.9	8.38	1638.4	
03/16/2022	11:03:47	4073	8.9	8.38	1642.8	
03/16/2022	11:04:17	4106	8.9	8.38	1647.3	
03/16/2022	11:04:47	4086	8.9	8.38	1651.7	
03/16/2022	11:05:17	4069	8.9	8.38	1656.2	
03/16/2022	11:05:47	4061	8.9	8.38	1660.6	
03/16/2022	11:06:17	4069	8.9	8.38	1665.1	
03/16/2022	11:06:47	4061	8.9	8.38	1669.5	
03/16/2022	11:07:17	4082	8.9	8.38	1674.0	
03/16/2022	11:08:17	4031	8.9	8.38	1682.9	
03/16/2022	11:08:47	4114	8.9	8.38	1687.3	
03/16/2022	11:09:17	4088	8.9	8.38	1691.8	
03/16/2022	11:09:47	4035	8.9	8.38	1696.2	
03/16/2022	11:10:17	4023	8.9	8.38	1700.7	
03/16/2022	11:10:47	4110	8.9	8.38	1705.1	
03/16/2022	11:11:17	4142	8.9	8.38	1709.6	
03/16/2022	11:11:47	4023	8.9	8.38	1714.0	
03/16/2022	11:12:17	4037	8.9	8.38	1718.5	

Well	Field	Job Start	Customer	Job Number
CARL ROTTER OHI 206H	OHIO COUNTY	Mar/15/2022	SWN	EN82-04038

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	11:13:17	4040	8.9	8.38	1727.3	
03/16/2022	11:13:47	4126	8.9	8.38	1731.8	
03/16/2022	11:14:17	4134	8.9	8.38	1736.2	
03/16/2022	11:14:47	4010	8.9	8.38	1740.7	
03/16/2022	11:15:17	4128	8.9	8.38	1745.1	
03/16/2022	11:15:47	4086	8.9	8.38	1749.6	
03/16/2022	11:16:17	4076	8.9	8.38	1754.0	
03/16/2022	11:16:47	4087	8.9	8.38	1758.5	
03/16/2022	11:17:17	4090	8.9	8.38	1762.9	
03/16/2022	11:17:47	4138	8.9	8.38	1767.4	
03/16/2022	11:18:17	4086	8.9	8.38	1771.8	
03/16/2022	11:18:47	4133	8.9	8.38	1776.3	
03/16/2022	11:19:17	4149	8.9	8.38	1780.7	
03/16/2022	11:19:47	4103	8.9	8.38	1785.2	
03/16/2022	11:20:17	4168	8.9	8.38	1789.6	
03/16/2022	11:20:47	4162	8.9	8.38	1794.0	
03/16/2022	11:21:17	4077	8.9	8.38	1798.5	
03/16/2022	11:21:47	4164	8.9	8.38	1802.9	
03/16/2022	11:22:17	4130	8.9	8.38	1807.4	
03/16/2022	11:22:41	4084	8.9	8.38	1810.9	48BBL CEMENT TO SURFACE
03/16/2022	11:22:47	4119	8.9	8.38	1811.8	
03/16/2022	11:23:17	4111	8.9	8.38	1816.3	
03/16/2022	11:23:47	4152	8.9	8.38	1820.7	
03/16/2022	11:24:17	4170	8.9	8.38	1825.2	
03/16/2022	11:24:47	4084	8.9	8.38	1829.6	
03/16/2022	11:25:17	4117	8.9	8.38	1834.1	
03/16/2022	11:25:47	4122	8.9	8.38	1838.5	
03/16/2022	11:26:17	4104	8.9	8.38	1842.9	
03/16/2022	11:26:47	4146	8.9	8.38	1847.4	
03/16/2022	11:27:17	4165	8.9	8.38	1851.8	
03/16/2022	11:27:47	4080	8.9	8.38	1856.3	
03/16/2022	11:28:17	4141	8.9	8.38	1860.7	
03/16/2022	11:28:47	4118	8.9	8.38	1865.1	
03/16/2022	11:29:17	4076	8.9	8.38	1869.6	
03/16/2022	11:29:47	4087	8.9	8.38	1874.0	
03/16/2022	11:30:17	4111	8.9	8.38	1878.5	
03/16/2022	11:30:47	4109	8.9	8.38	1882.9	
03/16/2022	11:31:17	4082	8.9	8.38	1887.4	
03/16/2022	11:31:47	4090	8.9	8.38	1891.8	
03/16/2022	11:32:17	4081	8.9	8.38	1896.3	
03/16/2022	11:32:47	4094	8.9	8.38	1900.7	
03/16/2022	11:33:17	4106	8.9	8.38	1905.1	
03/16/2022	11:33:47	4092	8.9	8.38	1909.6	
03/16/2022	11:34:17	4117	8.9	8.38	1914.0	
03/16/2022	11:34:47	4108	8.9	8.38	1918.5	
03/16/2022	11:35:17	4132	8.9	8.38	1922.9	
03/16/2022	11:35:47	3524	4.7	8.38	1927.0	
03/16/2022	11:36:17	3055	3.3	8.38	1928.8	
03/16/2022	11:36:47	2982	3.3	8.38	1930.4	
03/16/2022	11:37:17	2959	3.3	8.38	1932.1	
03/16/2022	11:37:47	2964	3.3	8.38	1933.7	
03/16/2022	11:38:17	2984	3.3	8.38	1935.3	
03/16/2022	11:38:47	2955	3.3	8.38	1936.9	
03/16/2022	11:39:17	2980	3.3	8.38	1938.6	

Well	Field	Job Start	Customer	Job Number
CARL ROTTER OHI 206H	OHIO COUNTY	Mar/15/2022	SWN	EN82-04038

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/16/2022	11:40:17	2976	3.3	8.38	1941.8	
03/16/2022	11:40:47	3057	3.3	8.38	1943.5	
03/16/2022	11:41:47	3065	3.3	8.38	1946.7	
03/16/2022	11:42:17	3332	3.2	8.38	1948.3	
03/16/2022	11:42:47	3536	0.0	8.38	1949.0	
03/16/2022	11:43:17	3460	0.0	8.38	1949.0	BUMP PLUG TO 3500PSI
03/16/2022	11:43:47	3457	0.0	8.38	1949.0	
03/16/2022	11:44:17	3464	0.0	8.38	1949.0	
03/16/2022	11:44:47	3487	0.0	8.38	1949.0	
03/16/2022	11:45:17	3514	0.0	8.38	1949.0	
03/16/2022	11:45:47	3486	0.0	8.39	1949.0	
03/16/2022	11:46:17	3485	0.0	8.38	1949.0	
03/16/2022	11:46:47	3495	0.0	8.39	1949.0	
03/16/2022	11:47:17	3504	0.0	8.39	1949.0	
03/16/2022	11:47:47	3513	0.0	8.38	1949.0	
03/16/2022	11:48:17	3515	0.0	8.39	1949.0	
03/16/2022	11:48:47	1829	0.0	8.38	1949.0	
03/16/2022	11:49:17	54	0.0	8.39	1949.0	
03/16/2022	11:49:47	-5	0.0	8.39	1949.0	
03/16/2022	11:50:17	-9	0.0	8.39	1949.0	
03/16/2022	11:50:47	-9	0.0	8.39	1949.0	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
7.3			10.1	1216.0	0.0	110.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
8597	-9	2004	3500			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
0.0 %	1170.0 bbl	568.0 bbl	65 degF	Cement Circulated to Surface? [X]	Volume 48.0 bbl
				Washed Thru Perfs [ ]	To ft

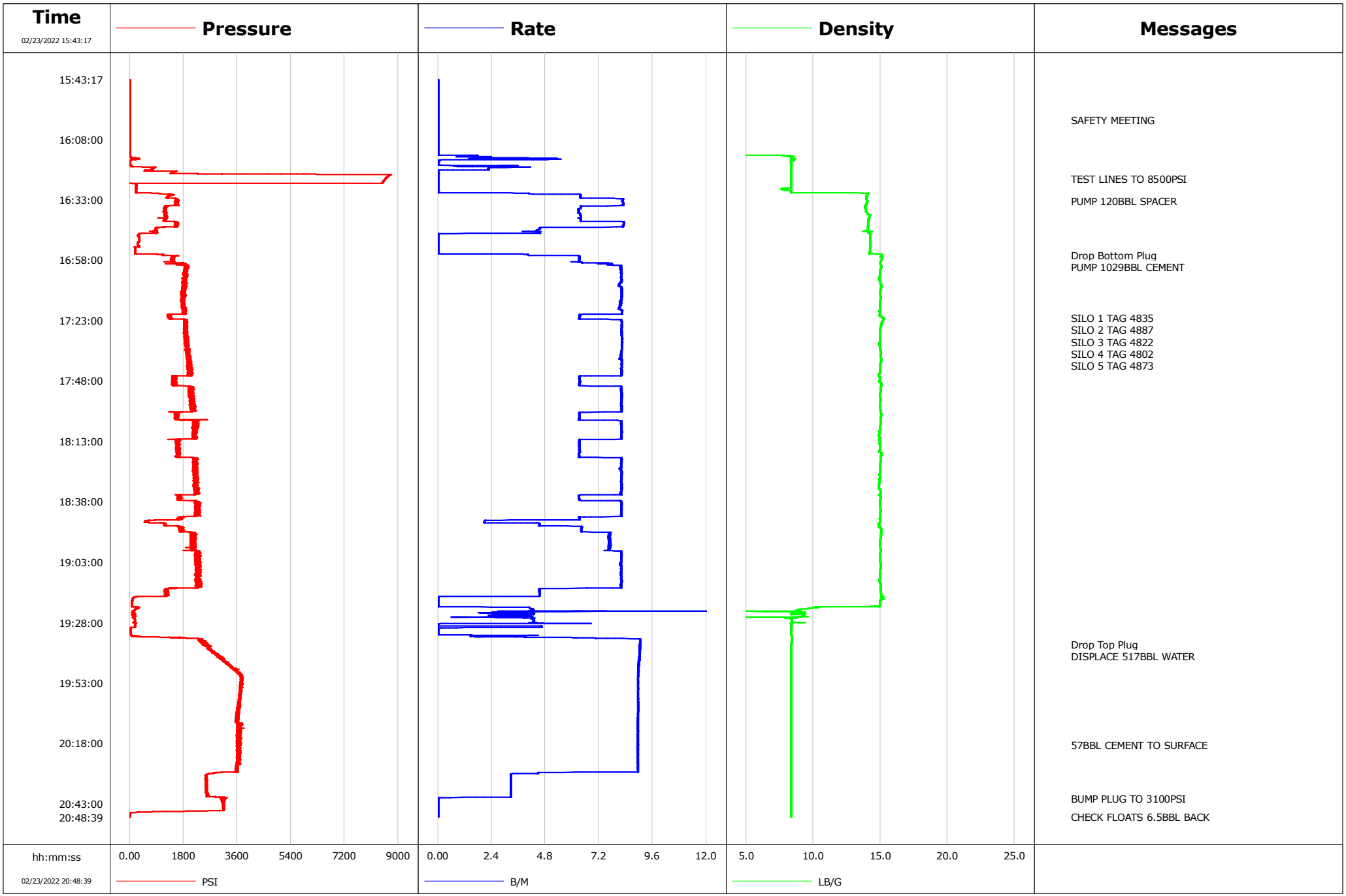
Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
	MATTHEW MORRIS	- [ ]	- [X]

Schlumberger

Cementing Job Report

CemCAT v1.7

Well	BETTY SCHAFER MSH 1H	**Client**	SWN
Field	MARSHALL COUNTY	**SIR No.**	EN82-03506
Engineer	MATTHEW MORRIS	**Job Type**	5.5 PRODUCTION
Country	United States	**Job Date**	02-23-2022



Schlumberger Cementing Service Report

Customer	Job Number
SWN	EN82-03506

Well	Location (legal)	Schlumberger Location	Job Start
BETTY SCHAFER MSH 1H	WV	STRASBURG	Feb/23/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
MARSHALL COUNTY	SHALE	90 deg	8.5 in	23322.0 ft	5998.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
MARSHALL COUNTY	West Virginia	0 psi	123 degF	124 degF	0.00 lb/gal

Well Master	API/UWI
0066459918	47-051-02382-00-00

Rig Name	Drilled For	Service Via
SDC 40	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
OBM	13.60 lb/gal	0.000 cP

Service Line	Job Type
Cementing	5.5 PRODUCTION

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
12640 psi	11080 psi	Single Cement head

Service Instructions

TEST LINES TO 8500PSI
PUMP 120BBL SPACER @ 14PPG
DROP BOTTOM PLUG
PUMP 1029BBL CEMENT @ 15PPG, Y-1.29, W-6.02, 4445SKS
DROP TOP PLUG, DISPLACE 517BBL WATER
BUMP PLUG, CHECK FLOATS
WATER TEST, C-20, S-200, TEMP-60, PH-7

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
1714.0	9.6	36.0	J55	BUTT
23324.0	5.5	20.0	P110	BUTT

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
	0.0	0.0	0.0	0	0
	0.0	0.0	0.0	0	0

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
0.0 ft	0.0 ft	0.00	0	0.0 ft
0.0 ft	0.0 ft	0.00	0	Diameter
0.0 ft	0.0 ft	0.00	0	0.000 in

Treat Down	Displacement	Packer Type	Packer Depth
CASING	517.0 bbl	None	0.0 ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
0.0 bbl	518.0 bbl	971.0 bbl	889.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement	Lift Pressure	Pipe Rotated	Pipe Reciprocated	No. Centralizers	Top Plugs	Bottom Plugs	Cement Head Type
X	X	2550 psi	X		0	1	1	SINGLE

Job Scheduled For	Arrived on Location	Leave Location
Feb/23/2022 10:00	Feb/23/2022 10:00	Feb/23/2022 23:00

Casing Tools		Squeeze Job	
Shoe Type	Guide	Squeeze Type	
Shoe Depth	23324.0 ft	Tool Type	
Stage Tool Type	NA	Tool Depth	ft
Stage Tool Depth	0.0 ft	Tail Pipe Size	in
Collar Type	FLOAT	Tail Pipe Depth	ft
Collar Depth	23276.0 ft	Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/23/2022	15:43:17	-1	0.0	0.02	0.0	Stopped Acquisition
02/23/2022	15:43:47	-1	0.0	0.02	0.0	
02/23/2022	15:44:17	-1	0.0	0.02	0.0	
02/23/2022	15:44:47	-1	0.0	0.02	0.0	
02/23/2022	15:45:17	-1	0.0	0.02	0.0	
02/23/2022	15:45:47	-1	0.0	0.02	0.0	
02/23/2022	15:46:17	-1	0.0	0.02	0.0	
02/23/2022	15:46:47	-1	0.0	0.02	0.0	
02/23/2022	15:47:17	-1	0.0	0.02	0.0	
02/23/2022	15:47:47	-1	0.0	0.02	0.0	
02/23/2022	15:48:17	-0	0.0	0.02	0.0	
02/23/2022	15:48:47	-2	0.0	0.02	0.0	
02/23/2022	15:49:17	-1	0.0	0.02	0.0	
02/23/2022	15:49:47	-1	0.0	0.02	0.0	
02/23/2022	15:50:17	-1	0.0	0.02	0.0	
02/23/2022	15:50:47	-2	0.0	0.02	0.0	
02/23/2022	15:51:17	-2	0.0	0.02	0.0	
02/23/2022	15:51:47	-1	0.0	0.02	0.0	
02/23/2022	15:52:17	-1	0.0	0.02	0.0	
02/23/2022	15:52:47	-1	0.0	0.02	0.0	
02/23/2022	15:53:17	-1	0.0	0.02	0.0	

Well	Field	Job Start	Customer	Job Number
BETTY SCHAFER MSH 1H	MARSHALL COUNTY	Feb/23/2022	SWN	EN82-03506

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/23/2022	15:54:17	-1	0.0	0.02	0.0	
02/23/2022	15:54:47	-1	0.0	0.02	0.0	
02/23/2022	15:55:47	-1	0.0	0.02	0.0	
02/23/2022	15:56:17	-2	0.0	0.02	0.0	
02/23/2022	15:56:47	-1	0.0	0.02	0.0	
02/23/2022	15:57:17	-2	0.0	0.02	0.0	
02/23/2022	15:57:47	-1	0.0	0.02	0.0	
02/23/2022	15:58:17	-1	0.0	0.02	0.0	
02/23/2022	15:58:47	-2	0.0	0.02	0.0	
02/23/2022	15:59:17	-1	0.0	0.02	0.0	
02/23/2022	15:59:47	-2	0.0	0.02	0.0	
02/23/2022	16:00:11	-1	0.0	0.02	0.0	SAFETY MEETING
02/23/2022	16:00:17	-2	0.0	0.02	0.0	
02/23/2022	16:00:47	-1	0.0	0.02	0.0	
02/23/2022	16:01:17	-1	0.0	0.02	0.0	
02/23/2022	16:01:47	-1	0.0	0.02	0.0	
02/23/2022	16:02:17	-1	0.0	0.02	0.0	
02/23/2022	16:02:47	-1	0.0	0.02	0.0	
02/23/2022	16:03:17	-1	0.0	0.02	0.0	
02/23/2022	16:03:47	-1	0.0	0.02	0.0	
02/23/2022	16:04:17	-1	0.0	0.02	0.0	
02/23/2022	16:04:47	-2	0.0	0.02	0.0	
02/23/2022	16:05:17	-1	0.0	0.02	0.0	
02/23/2022	16:05:47	-2	0.0	0.02	0.0	
02/23/2022	16:06:17	-1	0.0	0.02	0.0	
02/23/2022	16:06:47	-2	0.0	0.02	0.0	
02/23/2022	16:07:17	-1	0.0	0.02	0.0	
02/23/2022	16:07:47	-2	0.0	0.02	0.0	
02/23/2022	16:08:17	-2	0.0	0.02	0.0	
02/23/2022	16:08:47	-1	0.0	0.02	0.0	
02/23/2022	16:09:17	-1	0.0	0.02	0.0	
02/23/2022	16:09:47	-1	0.0	0.02	0.0	
02/23/2022	16:10:17	-1	0.0	0.02	0.0	
02/23/2022	16:10:47	-1	0.0	0.02	0.0	
02/23/2022	16:11:17	-1	0.0	0.02	0.0	
02/23/2022	16:11:47	-1	0.0	0.02	0.0	
02/23/2022	16:12:17	-1	0.0	0.02	0.0	
02/23/2022	16:12:47	-1	0.0	0.02	0.0	
02/23/2022	16:13:17	-1	0.0	0.02	0.0	
02/23/2022	16:13:47	-1	0.0	0.02	0.0	
02/23/2022	16:14:17	-2	0.0	0.02	0.0	
02/23/2022	16:14:47	-1	1.8	7.71	0.3	
02/23/2022	16:15:17	11	1.2	8.44	1.1	
02/23/2022	16:15:47	195	4.1	8.37	2.2	
02/23/2022	16:16:17	328	5.4	8.38	4.2	
02/23/2022	16:16:47	29	0.0	8.56	5.2	
02/23/2022	16:17:17	7	0.0	8.38	5.2	
02/23/2022	16:17:47	2	0.0	8.38	5.2	
02/23/2022	16:18:17	0	0.0	8.38	5.2	
02/23/2022	16:18:47	-1	0.0	8.38	5.2	
02/23/2022	16:19:17	107	1.3	8.38	6.2	
02/23/2022	16:19:47	856	2.3	8.38	7.7	
02/23/2022	16:20:17	756	2.3	8.38	8.8	
02/23/2022	16:20:47	514	0.4	8.38	9.9	

Well	Field	Job Start	Customer	Job Number
BETTY SCHAFER MSH 1H	MARSHALL COUNTY	Feb/23/2022	SWN	EN82-03506

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/23/2022	16:21:47	1419	0.0	8.38	9.9	
02/23/2022	16:22:17	2281	0.0	8.38	9.9	
02/23/2022	16:22:47	8737	0.0	8.38	9.9	
02/23/2022	16:23:17	8666	0.0	8.38	9.9	
02/23/2022	16:23:47	8613	0.0	8.38	9.9	
02/23/2022	16:24:17	8570	0.0	8.38	9.9	
02/23/2022	16:24:22	8562	0.0	8.38	9.9	TEST LINES TO 8500PSI
02/23/2022	16:24:47	8538	0.0	8.38	9.9	
02/23/2022	16:25:17	8504	0.0	8.38	9.9	
02/23/2022	16:25:47	8475	0.0	8.38	9.9	
02/23/2022	16:26:17	8447	0.0	8.38	9.9	
02/23/2022	16:26:47	203	0.0	8.37	9.9	
02/23/2022	16:27:17	198	0.0	8.38	9.9	
02/23/2022	16:27:47	199	0.0	8.38	9.9	
02/23/2022	16:28:17	199	0.0	7.95	9.9	
02/23/2022	16:29:17	199	0.0	8.37	9.9	
02/23/2022	16:29:47	199	0.0	8.37	9.9	
02/23/2022	16:30:17	738	3.7	13.69	10.1	
02/23/2022	16:30:47	1364	6.2	14.07	12.3	
02/23/2022	16:31:17	1407	6.4	13.98	15.5	
02/23/2022	16:31:47	1267	6.4	14.00	18.7	
02/23/2022	16:32:17	1282	6.4	13.97	21.8	
02/23/2022	16:32:47	1552	8.3	13.96	25.6	
02/23/2022	16:33:17	1520	8.3	14.00	29.7	
02/23/2022	16:33:34	1615	8.2	14.03	32.1	PUMP 120BBL SPACER
02/23/2022	16:33:47	1503	8.3	14.03	33.9	
02/23/2022	16:34:17	1537	8.3	14.02	38.0	
02/23/2022	16:34:47	1522	8.3	13.98	42.1	
02/23/2022	16:35:17	1544	8.3	13.95	46.3	
02/23/2022	16:35:47	1229	6.4	13.87	50.0	
02/23/2022	16:36:17	1205	6.4	13.87	53.2	
02/23/2022	16:36:47	1190	6.3	13.95	56.4	
02/23/2022	16:37:17	1205	6.3	13.93	59.6	
02/23/2022	16:37:47	1219	6.3	13.94	62.7	
02/23/2022	16:38:17	1160	6.3	13.96	65.8	
02/23/2022	16:38:47	1203	6.4	14.01	69.0	
02/23/2022	16:39:17	1169	6.4	14.21	72.2	
02/23/2022	16:39:47	1188	6.4	14.23	75.4	
02/23/2022	16:40:17	1227	6.4	14.18	78.5	
02/23/2022	16:40:47	1213	6.4	14.15	81.7	
02/23/2022	16:41:17	1207	6.4	14.14	84.9	
02/23/2022	16:41:47	1197	6.4	14.12	88.1	
02/23/2022	16:42:17	1518	8.3	14.12	91.8	
02/23/2022	16:42:47	1538	8.3	14.11	96.0	
02/23/2022	16:43:17	1519	8.3	14.11	100.1	
02/23/2022	16:43:47	1524	8.3	14.09	104.2	
02/23/2022	16:44:17	1530	8.3	14.06	108.4	
02/23/2022	16:44:47	885	4.6	14.06	111.1	
02/23/2022	16:45:17	863	4.5	14.08	113.4	
02/23/2022	16:45:47	859	4.4	14.01	115.6	
02/23/2022	16:46:17	822	4.6	14.28	117.8	
02/23/2022	16:46:47	845	4.6	14.14	120.0	
02/23/2022	16:47:17	280	0.0	14.24	120.9	
02/23/2022	16:47:47	259	0.0	14.27	120.9	

Well	Field	Job Start	Customer	Job Number
BETTY SCHAFER MSH 1H	MARSHALL COUNTY	Feb/23/2022	SWN	EN82-03506

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/23/2022	16:48:47	300	0.0	14.26	120.9	
02/23/2022	16:49:17	298	0.0	14.26	120.9	
02/23/2022	16:49:47	296	0.0	14.25	120.9	
02/23/2022	16:50:17	296	0.0	14.25	120.9	
02/23/2022	16:50:47	252	0.0	14.25	120.9	
02/23/2022	16:51:17	254	0.0	14.25	120.9	
02/23/2022	16:51:47	254	0.0	14.25	120.9	
02/23/2022	16:52:17	291	0.0	14.25	120.9	
02/23/2022	16:52:47	148	0.0	14.24	120.9	
02/23/2022	16:53:17	158	0.0	14.25	120.9	
02/23/2022	16:53:47	158	0.0	14.24	120.9	
02/23/2022	16:54:17	157	0.0	14.24	120.9	
02/23/2022	16:54:47	157	0.0	14.25	120.9	
02/23/2022	16:55:17	157	0.0	14.15	120.9	
02/23/2022	16:55:47	1079	4.0	15.11	122.0	
02/23/2022	16:55:58	1093	4.0	15.15	122.8	Drop Bottom Plug
02/23/2022	16:56:05	1495	5.6	15.15	123.3	PUMP 1029BBL CEMENT
02/23/2022	16:56:17	1552	6.3	15.14	124.5	
02/23/2022	16:56:47	1464	6.3	15.07	127.7	
02/23/2022	16:57:17	1428	6.3	15.15	130.8	
02/23/2022	16:57:47	1496	6.3	15.11	134.0	
02/23/2022	16:58:17	1462	6.3	15.05	137.1	
02/23/2022	16:58:47	1144	6.0	15.02	140.3	
02/23/2022	16:59:17	1749	7.7	14.99	143.6	
02/23/2022	16:59:47	1797	7.8	15.01	147.4	
02/23/2022	17:00:17	1925	8.2	15.05	151.3	
02/23/2022	17:00:47	1854	8.2	15.07	155.4	
02/23/2022	17:01:17	1878	8.2	15.06	159.5	
02/23/2022	17:01:47	1913	8.2	15.02	163.6	
02/23/2022	17:02:47	1810	8.2	14.97	171.8	
02/23/2022	17:03:17	1907	8.2	14.98	175.9	
02/23/2022	17:03:47	1814	8.2	14.98	180.0	
02/23/2022	17:04:17	1853	8.2	14.98	184.1	
02/23/2022	17:04:47	1838	8.2	14.96	188.2	
02/23/2022	17:05:17	1960	8.2	14.92	192.3	
02/23/2022	17:05:47	1837	8.2	14.91	196.4	
02/23/2022	17:06:17	1857	8.2	14.93	200.5	
02/23/2022	17:06:47	1841	8.2	14.96	204.6	
02/23/2022	17:07:17	1835	8.2	14.96	208.7	
02/23/2022	17:07:47	1800	8.1	15.04	212.7	
02/23/2022	17:08:17	1822	8.1	15.06	216.8	
02/23/2022	17:08:47	1822	8.1	15.06	220.8	
02/23/2022	17:09:17	1783	8.2	15.06	224.9	
02/23/2022	17:09:47	1788	8.2	15.05	229.0	
02/23/2022	17:10:17	1792	8.2	15.03	233.1	
02/23/2022	17:10:47	1760	8.2	15.01	237.2	
02/23/2022	17:11:17	1763	8.2	15.01	241.4	
02/23/2022	17:11:47	1758	8.2	15.01	245.5	
02/23/2022	17:12:17	1791	8.2	15.02	249.6	
02/23/2022	17:12:47	1765	8.2	15.01	253.7	
02/23/2022	17:13:17	1811	8.2	15.03	257.8	
02/23/2022	17:13:47	1817	8.2	15.04	261.9	
02/23/2022	17:14:17	1748	8.2	15.03	266.0	
02/23/2022	17:14:47	1754	8.2	15.01	270.1	

Well	Field	Job Start	Customer	Job Number
BETTY SCHAFER MSH 1H	MARSHALL COUNTY	Feb/23/2022	SWN	EN82-03506

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/23/2022	17:15:47	1769	8.2	14.98	278.2	
02/23/2022	17:16:17	1752	8.2	14.97	282.3	
02/23/2022	17:16:47	1873	8.2	14.95	286.4	
02/23/2022	17:17:17	1774	8.1	14.98	290.5	
02/23/2022	17:17:47	1763	8.1	14.99	294.5	
02/23/2022	17:18:17	1770	8.1	15.00	298.6	
02/23/2022	17:18:47	1859	8.2	15.00	302.7	
02/23/2022	17:19:17	1778	8.2	14.94	306.8	
02/23/2022	17:19:47	1839	8.2	14.96	310.9	
02/23/2022	17:20:17	1798	8.2	14.99	315.0	
02/23/2022	17:20:47	1380	6.3	14.92	318.5	
02/23/2022	17:21:17	1260	6.3	14.97	321.7	
02/23/2022	17:21:47	1335	6.3	15.13	324.9	
02/23/2022	17:21:57	1339	6.3	15.22	325.9	SILO 1 TAG 4835
02/23/2022	17:22:05	1330	6.3	15.24	326.8	SILO 2 TAG 4887
02/23/2022	17:22:14	1359	6.3	15.24	327.7	SILO 3 TAG 4822
02/23/2022	17:22:17	1381	6.3	15.24	328.0	
02/23/2022	17:22:22	1421	6.3	15.24	328.5	SILO 4 TAG 4802
02/23/2022	17:22:30	1375	6.4	15.24	329.4	SILO 5 TAG 4873
02/23/2022	17:22:47	1785	8.2	15.22	331.6	
02/23/2022	17:23:17	1919	8.2	15.17	335.7	
02/23/2022	17:23:47	1845	8.2	15.11	339.8	
02/23/2022	17:24:17	1821	8.2	15.09	343.9	
02/23/2022	17:24:47	1876	8.2	15.07	348.0	
02/23/2022	17:25:17	1836	8.2	15.06	352.2	
02/23/2022	17:25:47	1843	8.2	15.03	356.3	
02/23/2022	17:26:17	1916	8.2	15.01	360.4	
02/23/2022	17:26:47	1844	8.2	15.00	364.5	
02/23/2022	17:27:17	1833	8.2	15.00	368.6	
02/23/2022	17:27:47	1885	8.2	14.99	372.7	
02/23/2022	17:28:17	1911	8.2	14.98	376.8	
02/23/2022	17:28:47	1837	8.2	14.98	380.9	
02/23/2022	17:29:17	1855	8.2	14.97	385.0	
02/23/2022	17:29:47	1871	8.2	14.97	389.1	
02/23/2022	17:30:17	1928	8.2	14.97	393.2	
02/23/2022	17:30:47	1869	8.2	14.97	397.3	
02/23/2022	17:31:17	1851	8.2	14.97	401.5	
02/23/2022	17:31:47	1972	8.2	14.96	405.6	
02/23/2022	17:32:17	1861	8.2	14.94	409.7	
02/23/2022	17:32:47	1839	8.2	14.95	413.8	
02/23/2022	17:33:17	1876	8.2	14.94	417.9	
02/23/2022	17:33:47	1943	8.2	14.95	422.0	
02/23/2022	17:34:17	1968	8.2	14.97	426.1	
02/23/2022	17:34:47	1881	8.2	14.99	430.2	
02/23/2022	17:35:17	1920	8.2	15.02	434.4	
02/23/2022	17:36:17	1976	8.2	15.02	442.6	
02/23/2022	17:36:47	1918	8.2	15.02	446.7	
02/23/2022	17:37:17	1901	8.2	15.03	450.8	
02/23/2022	17:37:47	2033	8.2	15.04	454.8	
02/23/2022	17:38:17	1978	8.2	15.04	458.9	
02/23/2022	17:38:47	1959	8.1	15.06	463.0	
02/23/2022	17:39:17	1951	8.2	15.06	467.1	
02/23/2022	17:39:47	1943	8.2	15.07	471.2	
02/23/2022	17:40:17	1964	8.2	15.05	475.3	

Well	Field	Job Start	Customer	Job Number
BETTY SCHAFER MSH 1H	MARSHALL COUNTY	Feb/23/2022	SWN	EN82-03506

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/23/2022	17:41:17	1982	8.2	15.00	483.5	
02/23/2022	17:41:47	1934	8.2	15.00	487.7	
02/23/2022	17:42:17	1948	8.2	15.00	491.8	
02/23/2022	17:42:47	1954	8.2	15.00	495.9	
02/23/2022	17:43:17	1959	8.2	15.00	500.0	
02/23/2022	17:43:47	1982	8.2	15.00	504.1	
02/23/2022	17:44:17	2074	8.2	14.99	508.2	
02/23/2022	17:44:47	1997	8.2	14.97	512.3	
02/23/2022	17:45:17	1974	8.2	14.91	516.4	
02/23/2022	17:45:47	1964	8.2	14.90	520.5	
02/23/2022	17:46:17	1476	6.3	14.92	523.9	
02/23/2022	17:46:47	1552	6.3	14.95	527.1	
02/23/2022	17:47:17	1544	6.3	14.97	530.2	
02/23/2022	17:47:47	1507	6.3	14.96	533.4	
02/23/2022	17:48:17	1428	6.3	14.93	536.6	
02/23/2022	17:48:47	1465	6.3	15.01	539.7	
02/23/2022	17:49:17	1452	6.3	15.08	542.9	
02/23/2022	17:49:47	1479	6.3	15.08	546.1	
02/23/2022	17:50:17	2012	8.2	15.07	549.5	
02/23/2022	17:50:47	2116	8.2	15.03	553.6	
02/23/2022	17:51:17	2077	8.2	15.04	557.7	
02/23/2022	17:51:47	2061	8.2	15.04	561.8	
02/23/2022	17:52:17	2050	8.2	15.03	565.9	
02/23/2022	17:52:47	2008	8.2	15.01	570.0	
02/23/2022	17:53:17	1988	8.2	15.00	574.1	
02/23/2022	17:53:47	2154	8.2	14.98	578.2	
02/23/2022	17:54:17	2057	8.2	14.98	582.3	
02/23/2022	17:54:47	2012	8.2	14.99	586.4	
02/23/2022	17:55:17	2033	8.2	15.01	590.5	
02/23/2022	17:55:47	2124	8.2	15.02	594.6	
02/23/2022	17:56:17	2002	8.2	15.02	598.7	
02/23/2022	17:56:47	2011	8.2	15.01	602.8	
02/23/2022	17:57:17	2036	8.2	15.00	606.9	
02/23/2022	17:57:47	2161	8.2	14.99	611.0	
02/23/2022	17:58:17	2084	8.2	14.98	615.1	
02/23/2022	17:58:47	2065	8.2	14.97	619.2	
02/23/2022	17:59:17	2175	8.2	14.98	623.3	
02/23/2022	17:59:47	2132	8.2	15.00	627.4	
02/23/2022	18:00:17	2089	8.2	15.02	631.5	
02/23/2022	18:00:47	2067	8.2	15.04	635.6	
02/23/2022	18:01:17	1538	6.3	15.05	639.1	
02/23/2022	18:01:47	1608	6.3	15.06	642.2	
02/23/2022	18:02:17	1522	6.3	15.07	645.4	
02/23/2022	18:02:47	1655	6.3	15.05	648.6	
02/23/2022	18:03:17	1542	6.3	15.04	651.7	
02/23/2022	18:03:47	1657	6.3	15.04	654.9	
02/23/2022	18:04:17	1701	6.3	15.04	658.0	
02/23/2022	18:04:47	2136	8.2	15.04	662.0	
02/23/2022	18:05:17	2226	8.2	15.04	666.1	
02/23/2022	18:05:47	2165	8.2	15.03	670.2	
02/23/2022	18:06:17	2212	8.2	15.01	674.3	
02/23/2022	18:06:47	2140	8.2	15.00	678.4	
02/23/2022	18:07:17	2267	8.2	14.98	682.5	
02/23/2022	18:07:47	2170	8.2	14.97	686.6	

Well	Field	Job Start	Customer	Job Number
BETTY SCHAFER MSH 1H	MARSHALL COUNTY	Feb/23/2022	SWN	EN82-03506

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/23/2022	18:08:47	2168	8.2	14.94	694.8	
02/23/2022	18:09:47	2097	8.2	14.92	703.0	
02/23/2022	18:10:17	2116	8.2	14.90	707.1	
02/23/2022	18:10:47	2156	8.2	14.89	711.2	
02/23/2022	18:11:17	2163	8.2	14.93	715.3	
02/23/2022	18:11:47	2157	8.2	14.97	719.4	
02/23/2022	18:12:17	1642	6.3	14.89	723.4	
02/23/2022	18:12:47	1562	6.3	14.94	726.6	
02/23/2022	18:13:17	1628	6.3	14.97	729.7	
02/23/2022	18:13:47	1594	6.3	14.94	732.9	
02/23/2022	18:14:17	1688	6.3	14.95	736.0	
02/23/2022	18:14:47	1601	6.3	14.96	739.2	
02/23/2022	18:15:17	1602	6.3	14.98	742.4	
02/23/2022	18:15:47	1634	6.3	14.98	745.5	
02/23/2022	18:16:17	1601	6.3	14.97	748.7	
02/23/2022	18:16:47	1610	6.3	14.95	751.8	
02/23/2022	18:17:17	1640	6.3	14.93	755.0	
02/23/2022	18:17:47	1634	6.3	15.07	758.2	
02/23/2022	18:18:17	1654	6.3	15.10	761.3	
02/23/2022	18:18:47	1600	6.3	15.07	764.5	
02/23/2022	18:19:17	1667	6.3	15.05	767.6	
02/23/2022	18:19:47	2089	7.9	15.04	770.9	
02/23/2022	18:20:17	2141	8.2	15.04	775.0	
02/23/2022	18:20:47	2209	8.2	15.03	779.1	
02/23/2022	18:21:17	2134	8.2	15.02	783.2	
02/23/2022	18:21:47	2230	8.2	15.01	787.3	
02/23/2022	18:22:17	2194	8.2	15.01	791.4	
02/23/2022	18:22:47	2262	8.2	15.01	795.5	
02/23/2022	18:23:17	2122	8.2	15.00	799.6	
02/23/2022	18:23:47	2186	8.2	15.01	803.7	
02/23/2022	18:24:17	2128	8.1	14.99	807.7	
02/23/2022	18:24:47	2106	8.2	14.98	811.8	
02/23/2022	18:25:17	2189	8.2	14.96	815.9	
02/23/2022	18:25:47	2144	8.2	14.97	820.0	
02/23/2022	18:26:17	2269	8.2	14.96	824.1	
02/23/2022	18:26:47	2140	8.2	14.94	828.2	
02/23/2022	18:27:17	2172	8.2	14.95	832.3	
02/23/2022	18:27:47	2217	8.2	14.95	836.4	
02/23/2022	18:28:17	2141	8.2	14.95	840.5	
02/23/2022	18:28:47	2194	8.2	14.94	844.6	
02/23/2022	18:29:17	2158	8.2	14.94	848.7	
02/23/2022	18:29:47	2214	8.2	14.93	852.8	
02/23/2022	18:30:17	2171	8.2	14.93	856.9	
02/23/2022	18:30:47	2183	8.2	14.91	861.0	
02/23/2022	18:31:17	2169	8.2	14.90	865.1	
02/23/2022	18:31:47	2200	8.2	14.90	869.2	
02/23/2022	18:32:17	2178	8.2	14.89	873.3	
02/23/2022	18:32:47	2281	8.2	14.93	877.4	
02/23/2022	18:33:17	2149	8.2	14.98	881.5	
02/23/2022	18:33:47	2181	8.2	15.03	885.6	
02/23/2022	18:34:17	2218	8.2	15.04	889.7	
02/23/2022	18:34:47	2198	8.2	15.02	893.8	
02/23/2022	18:35:17	1652	6.3	14.89	897.8	
02/23/2022	18:35:47	1670	6.3	15.01	900.9	

Well	Field	Job Start	Customer	Job Number
BETTY SCHAFER MSH 1H	MARSHALL COUNTY	Feb/23/2022	SWN	EN82-03506

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/23/2022	18:36:47	1619	6.3	15.02	907.2	
02/23/2022	18:37:17	1699	6.3	15.00	910.4	
02/23/2022	18:37:47	2178	8.2	14.99	914.0	
02/23/2022	18:38:17	2171	8.2	14.98	918.1	
02/23/2022	18:38:47	2192	8.2	15.00	922.2	
02/23/2022	18:39:17	2218	8.2	15.00	926.3	
02/23/2022	18:39:47	2197	8.2	14.99	930.4	
02/23/2022	18:40:17	2179	8.2	14.97	934.5	
02/23/2022	18:40:47	2204	8.2	14.98	938.6	
02/23/2022	18:41:17	2351	8.2	15.03	942.7	
02/23/2022	18:41:47	2305	8.2	15.02	946.8	
02/23/2022	18:42:17	2253	8.2	15.02	950.9	
02/23/2022	18:43:17	2182	8.5	14.99	959.1	
02/23/2022	18:43:47	2176	8.2	14.99	963.2	
02/23/2022	18:44:17	1673	6.8	14.99	967.3	
02/23/2022	18:44:47	1706	6.3	14.98	970.5	
02/23/2022	18:45:17	1756	6.3	14.96	973.6	
02/23/2022	18:45:47	721	2.2	14.96	976.3	
02/23/2022	18:46:17	616	2.1	14.96	977.3	
02/23/2022	18:46:47	994	3.7	14.94	978.4	
02/23/2022	18:47:17	1125	4.5	14.86	980.6	
02/23/2022	18:47:47	1146	4.5	14.95	982.9	
02/23/2022	18:48:17	1659	6.4	14.91	985.5	
02/23/2022	18:48:47	1633	6.4	14.95	988.7	
02/23/2022	18:49:17	1677	6.4	15.07	991.9	
02/23/2022	18:49:47	1612	6.4	15.09	995.1	
02/23/2022	18:50:17	1707	6.4	15.07	998.3	
02/23/2022	18:50:47	2039	7.7	15.06	1001.7	
02/23/2022	18:51:17	2074	7.7	15.06	1005.6	
02/23/2022	18:51:47	2095	7.7	15.05	1009.4	
02/23/2022	18:52:17	1997	7.7	15.03	1013.3	
02/23/2022	18:52:47	2038	7.7	15.03	1017.1	
02/23/2022	18:53:17	2012	7.7	15.02	1020.9	
02/23/2022	18:53:47	1986	7.7	15.01	1024.8	
02/23/2022	18:54:17	2164	7.6	14.98	1028.6	
02/23/2022	18:54:47	2076	7.6	14.98	1032.4	
02/23/2022	18:55:17	2016	7.7	14.99	1036.3	
02/23/2022	18:55:47	2071	7.7	14.98	1040.1	
02/23/2022	18:56:17	2014	7.7	14.98	1044.0	
02/23/2022	18:56:47	2071	7.7	14.98	1047.8	
02/23/2022	18:57:17	2080	7.7	15.01	1051.6	
02/23/2022	18:57:47	2038	7.7	15.04	1055.5	
02/23/2022	18:58:17	2068	7.7	15.04	1059.3	
02/23/2022	18:58:47	2195	8.2	15.02	1063.3	
02/23/2022	18:59:17	2223	8.2	14.99	1067.4	
02/23/2022	18:59:47	2275	8.2	14.96	1071.5	
02/23/2022	19:00:17	2330	8.2	14.96	1075.6	
02/23/2022	19:00:47	2321	8.2	14.96	1079.7	
02/23/2022	19:01:17	2297	8.2	14.96	1083.8	
02/23/2022	19:01:47	2353	8.2	14.97	1087.9	
02/23/2022	19:02:17	2266	8.2	14.96	1092.0	
02/23/2022	19:02:47	2356	8.2	15.00	1096.1	
02/23/2022	19:03:17	2341	8.2	15.02	1100.2	
02/23/2022	19:03:47	2269	8.2	15.02	1104.3	

Well	Field	Job Start	Customer	Job Number
BETTY SCHAFER MSH 1H	MARSHALL COUNTY	Feb/23/2022	SWN	EN82-03506

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/23/2022	19:04:47	2304	8.2	15.03	1112.5	
02/23/2022	19:05:17	2315	8.2	15.03	1116.6	
02/23/2022	19:05:47	2297	8.2	15.02	1120.7	
02/23/2022	19:06:17	2325	8.2	15.01	1124.8	
02/23/2022	19:06:47	2272	8.2	15.00	1128.9	
02/23/2022	19:07:17	2215	8.2	14.99	1133.0	
02/23/2022	19:07:47	2242	8.2	14.99	1137.1	
02/23/2022	19:08:17	2238	8.2	14.98	1141.1	
02/23/2022	19:08:47	2207	8.2	14.97	1145.2	
02/23/2022	19:09:17	2229	8.2	14.97	1149.3	
02/23/2022	19:09:47	2262	8.2	14.96	1153.4	
02/23/2022	19:10:17	2235	8.2	14.94	1157.5	
02/23/2022	19:10:47	2228	8.2	14.93	1161.6	
02/23/2022	19:11:17	2237	8.2	14.95	1165.7	
02/23/2022	19:11:47	2228	8.2	14.99	1169.8	
02/23/2022	19:12:17	2218	8.2	15.04	1173.9	
02/23/2022	19:12:47	2248	8.2	15.05	1178.0	
02/23/2022	19:13:17	2255	8.2	15.05	1182.1	
02/23/2022	19:13:47	2266	8.2	15.00	1186.2	
02/23/2022	19:14:17	1224	4.5	15.03	1188.8	
02/23/2022	19:14:47	1174	4.5	15.03	1191.1	
02/23/2022	19:15:17	1224	4.5	15.03	1193.3	
02/23/2022	19:15:47	1147	4.5	15.04	1195.6	
02/23/2022	19:16:47	1163	4.5	15.09	1200.2	
02/23/2022	19:17:17	305	0.4	15.20	1202.2	
02/23/2022	19:17:47	97	0.0	15.07	1202.2	
02/23/2022	19:18:17	70	0.0	15.21	1202.2	
02/23/2022	19:18:47	61	0.0	15.00	1202.2	
02/23/2022	19:19:17	57	0.0	14.98	1202.2	
02/23/2022	19:19:47	55	0.0	14.98	1202.2	
02/23/2022	19:20:17	54	0.0	14.97	1202.2	
02/23/2022	19:20:47	55	0.0	14.96	1202.2	
02/23/2022	19:21:17	54	0.0	14.38	1202.2	
02/23/2022	19:21:47	174	4.0	10.43	1202.8	
02/23/2022	19:22:17	238	4.1	9.56	1204.9	
02/23/2022	19:22:47	116	4.3	8.86	1207.0	
02/23/2022	19:23:17	60	4.1	9.10	1209.1	
02/23/2022	19:23:47	18	2.5	9.32	1211.7	
02/23/2022	19:24:17	104	4.3	8.48	1213.3	
02/23/2022	19:24:47	35	3.5	8.56	1215.4	
02/23/2022	19:25:17	109	4.1	9.26	1217.0	
02/23/2022	19:25:47	59	0.9	4.89	1218.9	
02/23/2022	19:26:17	79	4.3	7.94	1220.4	
02/23/2022	19:26:47	116	4.3	8.39	1222.5	
02/23/2022	19:27:17	102	4.3	8.40	1224.7	
02/23/2022	19:27:47	109	4.3	8.39	1226.8	
02/23/2022	19:28:17	193	4.7	8.36	1229.0	
02/23/2022	19:28:47	126	0.0	8.38	1229.9	
02/23/2022	19:29:17	127	0.0	8.37	1229.9	
02/23/2022	19:29:47	128	4.6	8.37	1231.5	
02/23/2022	19:30:17	3	0.1	8.37	1233.3	
02/23/2022	19:30:47	7	0.0	8.37	1233.3	
02/23/2022	19:31:17	9	0.0	8.37	1233.3	
02/23/2022	19:31:47	9	0.0	8.37	1233.3	

Well	Field	Job Start	Customer	Job Number
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Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/23/2022	19:32:47	9	0.0	8.37	1233.3	
02/23/2022	19:33:17	13	1.5	8.38	1233.5	
02/23/2022	19:33:47	271	1.6	8.42	1234.8	
02/23/2022	19:34:17	1701	5.9	8.41	1236.6	
02/23/2022	19:34:47	2332	9.0	8.41	1240.1	
02/23/2022	19:35:17	2375	9.1	8.41	1244.6	
02/23/2022	19:35:47	2542	9.0	8.41	1249.2	
02/23/2022	19:36:17	2353	9.1	8.41	1253.7	
02/23/2022	19:36:47	2470	9.0	8.38	1258.2	
02/23/2022	19:37:00	2602	9.0	8.38	1260.2	Drop Top Plug
02/23/2022	19:37:01	2587	9.0	8.37	1260.3	DISPLACE 517BBL WATER
02/23/2022	19:37:17	2501	9.0	8.37	1262.7	
02/23/2022	19:37:47	2522	9.0	8.37	1267.2	
02/23/2022	19:38:17	2585	9.0	8.37	1271.7	
02/23/2022	19:38:47	2666	9.1	8.38	1276.3	
02/23/2022	19:39:17	2745	9.0	8.37	1280.8	
02/23/2022	19:39:47	2683	9.0	8.37	1285.3	
02/23/2022	19:40:17	2829	9.0	8.37	1289.8	
02/23/2022	19:40:47	2811	9.0	8.37	1294.3	
02/23/2022	19:41:17	2945	9.0	8.37	1298.8	
02/23/2022	19:41:47	2915	9.0	8.37	1303.3	
02/23/2022	19:42:17	2914	9.0	8.37	1307.8	
02/23/2022	19:42:47	3052	9.0	8.37	1312.3	
02/23/2022	19:43:47	3132	9.0	8.37	1321.3	
02/23/2022	19:44:17	3153	9.0	8.37	1325.8	
02/23/2022	19:44:47	3176	9.0	8.37	1330.3	
02/23/2022	19:45:17	3387	9.0	8.37	1334.8	
02/23/2022	19:45:47	3363	9.0	8.37	1339.3	
02/23/2022	19:46:17	3342	9.0	8.37	1343.8	
02/23/2022	19:46:47	3410	9.0	8.37	1348.2	
02/23/2022	19:47:17	3549	9.0	8.37	1352.7	
02/23/2022	19:47:47	3530	9.0	8.37	1357.2	
02/23/2022	19:48:17	3564	9.0	8.37	1361.7	
02/23/2022	19:48:47	3575	9.0	8.37	1366.2	
02/23/2022	19:49:17	3695	9.0	8.37	1370.6	
02/23/2022	19:50:17	3723	8.9	8.37	1379.6	
02/23/2022	19:50:47	3724	8.9	8.37	1384.1	
02/23/2022	19:51:17	3731	8.9	8.37	1388.5	
02/23/2022	19:51:47	3763	8.9	8.37	1393.0	
02/23/2022	19:52:17	3740	8.9	8.37	1397.5	
02/23/2022	19:52:47	3711	8.9	8.37	1402.0	
02/23/2022	19:53:17	3712	8.9	8.37	1406.4	
02/23/2022	19:53:47	3736	8.9	8.37	1410.9	
02/23/2022	19:54:17	3733	8.9	8.37	1415.4	
02/23/2022	19:54:47	3678	9.0	8.37	1419.8	
02/23/2022	19:55:17	3669	8.9	8.37	1424.3	
02/23/2022	19:55:47	3756	8.9	8.37	1428.8	
02/23/2022	19:56:17	3730	8.9	8.37	1433.3	
02/23/2022	19:56:47	3673	8.9	8.37	1437.7	
02/23/2022	19:57:17	3723	8.9	8.37	1442.2	
02/23/2022	19:57:47	3724	8.9	8.37	1446.7	
02/23/2022	19:58:17	3701	8.9	8.37	1451.1	
02/23/2022	19:58:47	3666	8.9	8.37	1455.6	
02/23/2022	19:59:17	3646	8.9	8.37	1460.1	

Well	Field	Job Start	Customer	Job Number
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Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/23/2022	20:00:17	3700	8.9	8.37	1469.0	
02/23/2022	20:00:47	3679	8.9	8.37	1473.5	
02/23/2022	20:01:17	3621	8.9	8.37	1478.0	
02/23/2022	20:01:47	3629	8.9	8.37	1482.5	
02/23/2022	20:02:17	3661	8.9	8.37	1486.9	
02/23/2022	20:02:47	3682	9.0	8.37	1491.4	
02/23/2022	20:03:17	3593	9.0	8.37	1495.9	
02/23/2022	20:03:47	3667	9.0	8.37	1500.4	
02/23/2022	20:04:17	3652	8.9	8.37	1504.8	
02/23/2022	20:04:47	3587	8.9	8.37	1509.3	
02/23/2022	20:05:17	3609	8.9	8.37	1513.8	
02/23/2022	20:05:47	3585	8.9	8.37	1518.3	
02/23/2022	20:06:17	3589	8.9	8.37	1522.7	
02/23/2022	20:06:47	3605	8.9	8.37	1527.2	
02/23/2022	20:07:17	3568	8.9	8.37	1531.7	
02/23/2022	20:07:47	3602	8.9	8.37	1536.1	
02/23/2022	20:08:17	3582	8.9	8.37	1540.6	
02/23/2022	20:08:47	3586	8.9	8.37	1545.1	
02/23/2022	20:09:17	3617	8.9	8.37	1549.5	
02/23/2022	20:09:47	3651	8.9	8.37	1554.0	
02/23/2022	20:10:17	3778	8.9	8.37	1558.5	
02/23/2022	20:10:47	3679	8.9	8.37	1562.9	
02/23/2022	20:11:17	3642	8.9	8.37	1567.4	
02/23/2022	20:11:47	3636	8.9	8.37	1571.9	
02/23/2022	20:12:17	3671	8.9	8.37	1576.3	
02/23/2022	20:12:47	3651	8.9	8.37	1580.8	
02/23/2022	20:13:17	3681	8.9	8.37	1585.3	
02/23/2022	20:13:47	3626	8.9	8.37	1589.7	
02/23/2022	20:14:17	3654	8.9	8.37	1594.2	
02/23/2022	20:14:47	3644	8.9	8.37	1598.7	
02/23/2022	20:15:17	3643	8.9	8.37	1603.1	
02/23/2022	20:15:47	3657	8.9	8.37	1607.6	
02/23/2022	20:16:17	3562	8.9	8.37	1612.1	
02/23/2022	20:17:17	3653	8.9	8.37	1621.0	
02/23/2022	20:17:47	3585	8.9	8.37	1625.5	
02/23/2022	20:18:17	3581	8.9	8.37	1629.9	
02/23/2022	20:18:42	3605	8.9	8.37	1633.6	57BBL CEMENT TO SURFACE
02/23/2022	20:18:47	3614	8.9	8.37	1634.4	
02/23/2022	20:19:17	3713	8.9	8.37	1638.9	
02/23/2022	20:19:47	3634	8.9	8.37	1643.3	
02/23/2022	20:20:17	3606	8.9	8.37	1647.8	
02/23/2022	20:20:47	3661	8.9	8.37	1652.3	
02/23/2022	20:21:17	3640	8.9	8.37	1656.7	
02/23/2022	20:21:47	3625	8.9	8.37	1661.2	
02/23/2022	20:22:17	3628	8.9	8.37	1665.6	
02/23/2022	20:22:47	3618	8.9	8.37	1670.1	
02/23/2022	20:23:47	3648	8.9	8.37	1679.0	
02/23/2022	20:24:17	3573	8.9	8.37	1683.5	
02/23/2022	20:24:47	3569	8.9	8.37	1688.0	
02/23/2022	20:25:17	3627	8.9	8.37	1692.4	
02/23/2022	20:25:47	3684	8.9	8.37	1696.9	
02/23/2022	20:26:17	3608	8.9	8.37	1701.4	
02/23/2022	20:26:47	3608	8.9	8.37	1705.8	
02/23/2022	20:27:17	3580	8.9	8.37	1710.3	

Well	Field	Job Start	Customer	Job Number
BETTY SCHAFER MSH 1H	MARSHALL COUNTY	Feb/23/2022	SWN	EN82-03506

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/23/2022	20:28:17	3578	8.9	8.37	1719.2	
02/23/2022	20:28:47	3562	8.9	8.37	1723.7	
02/23/2022	20:29:17	3569	8.9	8.37	1728.2	
02/23/2022	20:29:47	3562	8.9	8.37	1732.6	
02/23/2022	20:30:17	2873	4.5	8.37	1736.1	
02/23/2022	20:30:47	2572	3.3	8.37	1738.1	
02/23/2022	20:31:17	2533	3.3	8.37	1739.7	
02/23/2022	20:31:47	2520	3.3	8.37	1741.3	
02/23/2022	20:32:17	2515	3.3	8.37	1743.0	
02/23/2022	20:32:47	2543	3.3	8.37	1744.6	
02/23/2022	20:33:17	2578	3.3	8.37	1746.2	
02/23/2022	20:33:47	2541	3.3	8.37	1747.9	
02/23/2022	20:34:17	2550	3.3	8.37	1749.5	
02/23/2022	20:34:47	2523	3.3	8.37	1751.1	
02/23/2022	20:35:17	2542	3.3	8.37	1752.8	
02/23/2022	20:35:47	2554	3.3	8.37	1754.4	
02/23/2022	20:36:17	2521	3.3	8.37	1756.0	
02/23/2022	20:36:47	2564	3.3	8.37	1757.7	
02/23/2022	20:37:17	2529	3.3	8.37	1759.3	
02/23/2022	20:37:47	2550	3.3	8.37	1760.9	
02/23/2022	20:38:17	2529	3.3	8.37	1762.6	
02/23/2022	20:38:47	2531	3.3	8.37	1764.2	
02/23/2022	20:39:17	2573	3.3	8.37	1765.8	
02/23/2022	20:39:47	2551	3.3	8.37	1767.5	
02/23/2022	20:40:17	2871	3.3	8.37	1769.1	
02/23/2022	20:40:47	3010	0.0	8.37	1769.7	
02/23/2022	20:41:03	3171	0.0	8.37	1769.7	BUMP PLUG TO 3100PSI
02/23/2022	20:41:17	3042	0.0	8.37	1769.7	
02/23/2022	20:41:47	3051	0.0	8.37	1769.7	
02/23/2022	20:42:17	3092	0.0	8.37	1769.7	
02/23/2022	20:42:47	3098	0.0	8.37	1769.7	
02/23/2022	20:43:17	3115	0.0	8.37	1769.7	
02/23/2022	20:43:47	3128	0.0	8.37	1769.7	
02/23/2022	20:44:17	3130	0.0	8.37	1769.7	
02/23/2022	20:44:47	3126	0.0	8.37	1769.7	
02/23/2022	20:45:17	3125	0.0	8.37	1769.7	
02/23/2022	20:45:47	3121	0.0	8.37	1769.7	
02/23/2022	20:46:17	1582	0.0	8.37	1769.7	
02/23/2022	20:46:47	19	0.0	8.37	1769.7	
02/23/2022	20:47:17	-11	0.0	8.37	1769.7	
02/23/2022	20:47:47	-16	0.0	8.37	1769.7	
02/23/2022	20:48:17	-16	0.0	8.37	1769.7	

Well	Field	Job Start	Customer	Job Number
BETTY SCHAFER MSH 1H	MARSHALL COUNTY	Feb/23/2022	SWN	EN82-03506

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
7.4			13.9	1080.0	0.0	120.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
8766	-16	2101	3100			bbl	lb/gal

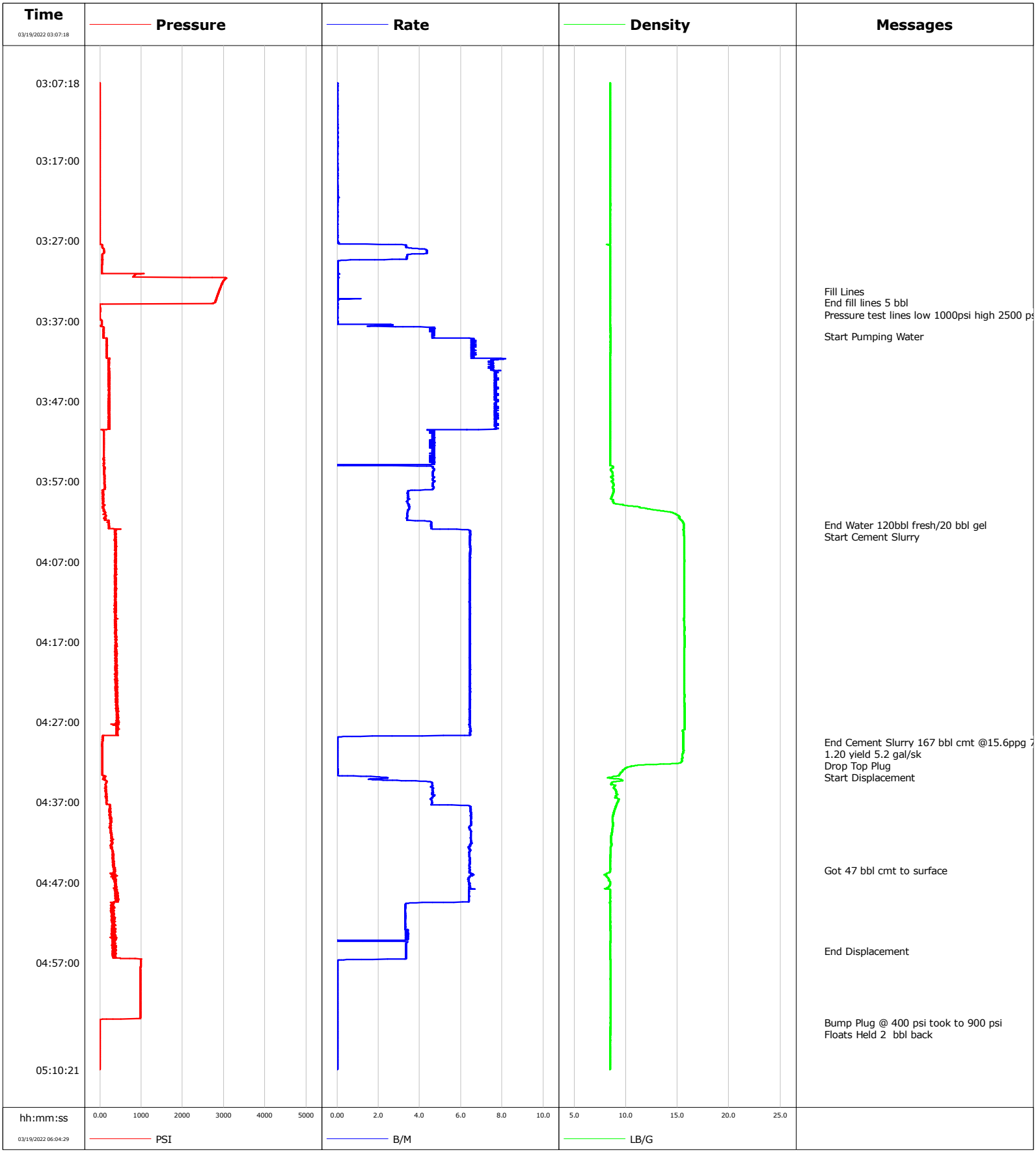
Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
0.0 %	1029.0 bbl	517.0 bbl	60 degF	Cement Circulated to Surface? [X]	Volume 57.0 bbl
				Washed Thru Perfs [ ]	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
	MATTHEW MORRIS	-	-

Schlumberger

Cementing Job Report

Well	Carl Rotter OHI 6H	**Client**	SWN
Field		**SIR No.**	EN82-04157
Engineer	Richard White	**Job Type**	Surface
Country	United States	**Job Date**	03-18-2022



Schlumberger Cementing Service Report

Customer	Job Number
SWN	EN82-04157

Well	Location (legal)	Schlumberger Location	Job Start
Carl Rotter OHI 6H	SOH	Strasburg	Mar/18/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
		deg	17.5 in	767.0 ft	767.0 ft

County	State/Provinc	BHP	BHST	BHCT	Pore Press. Gradient
Ohio	West Virginia	psi	68 degF	80 degF	lb/gal
Well Master 12345	**API/UWI**				

Rig Name	Drilled For	Service Via
SDC 40	Oil and Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
None	0.00 lb/gal	cP

Service Line	Job Type
Cementing	Surface

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Service Instructions

Surface 13 3/8"
fill lines 5 bbl water
test lines low 1000psi high 2500 psi
pump 120 bbl fresh water and 20 bbl gel water
pump 167 bbl cmt @15.6ppg 1.2 y 5.2gps 783sks
drop top plug
displace with 112 bbl fresh water
land plug @400 psi took to 900 psi
check floats 2 bbl back

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
767.0	13.4	54.5	J-55	BTC
0.0	0.0	0.0		

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	112.0 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	bbl	bbl	bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement	Casing Tools	Squeeze Job
X	☐		

Lift Pressure	400 psi	Shoe Type	Float	Squeeze Type	
Pipe Rotated	☐	Pipe Reciprocated	☐	Shoe Depth	765.0 ft	Tool Type	

No. Centralizers	11	Top Plugs	1	Bottom Plugs	Stage Tool Type		Tool Depth	ft
Cement Head Type	Single				Stage Tool Depth	ft	Tail Pipe Size	in

Job Scheduled For	Arrived on Location	Leave Location	Collar Type	Float	Tail Pipe Depth	ft
Mar/18/2022	Mar/18/2022	Mar/18/2022	Collar Depth	722.0 ft	Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/19/2022	03:07:18	-4	0.0	8.49	0.0	Started Acquisition
03/19/2022	03:12:18	-4	0.0	8.49	0.0	
03/19/2022	03:17:18	-5	0.0	8.49	0.0	
03/19/2022	03:22:18	-6	0.0	8.49	0.0	
03/19/2022	03:27:18	-6	0.0	8.49	0.0	
03/19/2022	03:32:18	2957	0.0	8.49	0.0	
03/19/2022	03:33:13	2885	0.0	8.49	0.0	Fill Lines
03/19/2022	03:34:14	2814	1.1	8.49	0.0	End fill lines 5 bbl
03/19/2022	03:35:18	-8	0.0	8.49	0.0	Pressure test lines low 1000psi high 2500 psi
03/19/2022	03:37:18	46	0.0	8.49	0.0	
03/19/2022	03:38:52	81	4.6	8.49	0.0	Start Pumping Water
03/19/2022	03:42:18	210	7.5	8.49	0.0	
03/19/2022	03:47:18	235	7.7	8.49	0.0	
03/19/2022	03:52:18	95	4.5	8.49	0.0	
03/19/2022	03:57:18	119	4.6	8.78	0.0	
03/19/2022	04:02:18	203	4.6	15.60	0.0	
03/19/2022	04:02:25	209	4.6	15.59	0.0	End Water 120bbl fresh/20 bbl gel
03/19/2022	04:02:32	219	4.6	15.61	0.0	Start Cement Slurry
03/19/2022	04:07:18	377	6.4	15.67	0.0	
03/19/2022	04:12:18	379	6.4	15.65	0.0	
03/19/2022	04:17:18	407	6.4	15.69	0.0	

Well	Field	Job Start	Customer	Job Number
Carl Rotter OHI 6H		Mar/18/2022	SWN	EN82-04157

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/19/2022	04:27:18	395	6.4	15.68	0.0	
03/19/2022	04:29:31	59	0.0	15.55	0.0	End Cement Slurry 167 bbl cmt @15.6ppg 783 sks
03/19/2022	04:29:32	60	0.0	15.55	0.0	1.20 yield 5.2 gal/sk
03/19/2022	04:30:31	56	0.0	15.57	0.0	Drop Top Plug
03/19/2022	04:32:18	52	0.0	12.66	0.0	
03/19/2022	04:33:30	54	0.0	9.42	0.0	Start Displacement
03/19/2022	04:37:18	250	4.6	9.09	0.0	
03/19/2022	04:42:18	293	6.4	8.61	0.0	
03/19/2022	04:45:31	344	6.4	8.48	0.0	Got 47 bbl cmt to surface
03/19/2022	04:47:18	362	6.4	8.48	0.0	
03/19/2022	04:52:18	346	3.3	8.49	0.0	
03/19/2022	04:55:31	322	3.3	8.49	0.0	End Displacement
03/19/2022	04:57:18	982	0.0	8.50	0.0	
03/19/2022	05:02:18	974	0.0	8.49	0.0	
03/19/2022	05:04:31	-6	0.0	8.49	0.0	Bump Plug @ 400 psi took to 900 psi
03/19/2022	05:07:18	-7	0.0	8.49	0.0	
03/19/2022	05:12:18	-7	0.0	8.49	0.0	
03/19/2022	05:17:18	-9	0.0	8.49	0.0	
03/19/2022	05:22:18	-7	0.0	8.49	0.0	
03/19/2022	05:27:18	133	6.5	8.49	0.0	
03/19/2022	05:32:18	124	6.5	8.35	0.0	
03/19/2022	05:37:18	129	6.6	8.18	0.0	
03/19/2022	05:42:18	-3	0.0	8.49	0.0	
03/19/2022	05:47:18	-9	0.0	8.49	0.0	
03/19/2022	05:52:18	-10	0.0	8.48	0.0	
03/19/2022	05:57:18	-10	0.0	6.00	0.0	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
3.2			20.3	167.0	0.0	140.0	

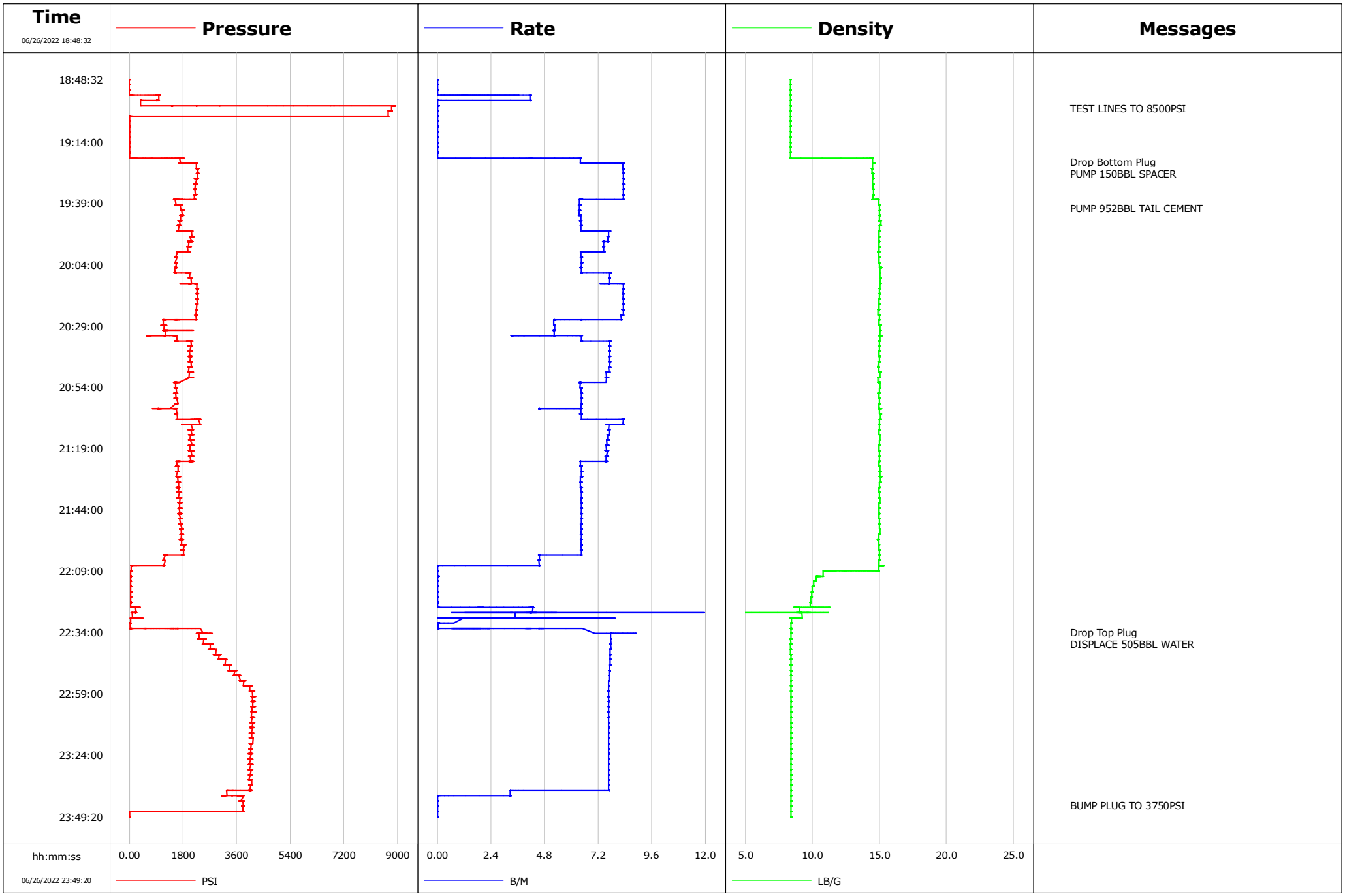
Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
2550	-10	364	900			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume
%	167.0 bbl	112.0 bbl	degF	[X]	47.0 bbl
				Washed Thru Perfs [ ]	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
SWN	Richard White	-	[X] -

Schlumberger Cementing Job Report

Well	CHARLES JAMISON MSH 406H	**Client**	SWN
Field	MARSHALL COUNTY	**SIR No.**	EOHC-01211
Engineer	MATTHEW MORRIS	**Job Type**	5.5 PRODUCTION
Country	United States	**Job Date**	06-26-2022



Schlumberger Cementing Service Report

Customer	Job Number
SWN	EOHC-01211

Well	Location (legal)	Schlumberger Location	Job Start
CHARLES JAMISON MSH 406H	WV	STRASBURG	Jun/26/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
MARSHALL COUNTY	SHALE	90 deg	8.5 in	22806.0 ft	7172.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
MARSHALL COUNTY	West Virginia	0 psi	140 degF	139 degF	0.00 lb/gal

Well Master	API/UWI
0066463419	47-051-02434-00-00

Rig Name	Drilled For	Service Via
SDC 41	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
OBM	lb/gal	0.000 cP

Service Line	Job Type
Cementing	5.5 PRODUCTION

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
12640 psi	11080 psi	Single Cement head

Service Instructions

TEST LINES TO 8500PSI, PUMP 150BBL SPACER
DROP BOTTOM PLUG
PUMP 952BBL TAIL @ 15PPG, Y-1.29, W-6.01, 4145SKS
DROP TOP PLUG, DISPLACE 505BBL WATER
BUMP PLUG, CHECK FLOATS
WATER TEST, C-20, S-200, T-70, PH-7
ESTIMATED TOP OF TAIL @ 257FT

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
2804.0	9.6	36.0	J55	BUTT
22807.0	5.5	20.0	P110	BUTT

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
	0.0	0.0	0.0	0	0
	0.0	0.0	0.0	0	0

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
0.0 ft	0.0 ft	0.00	0	0.0 ft
0.0 ft	0.0 ft	0.00	0	Diameter
0.0 ft	0.0 ft	0.00	0	0.000 in

Treat Down	Displacement	Packer Type	Packer Depth
CASING	505.0 bbl	None	0.0 ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
0.0 bbl	506.0 bbl	963.0 bbl	829.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
X	X

Lift Pressure	Pipe Rotated	Pipe Reciprocated
3150 psi	☐	☐

No. Centralizers	Top Plugs	Bottom Plugs
0	1	1

Cement Head Type
SINGLE

Job Scheduled For	Arrived on Location	Leave Location
Jun/26/2022 12:00	Jun/26/2022 12:00	Jun/27/2022 03:00

Casing Tools

Shoe Type	Guide
Shoe Depth	22807.0 ft
Stage Tool Type	NA
Stage Tool Depth	0.0 ft
Collar Type	Float
Collar Depth	22760.5 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	18:48:32	-2	0.0	8.38	0.0	SAFETY MEETING
06/26/2022	18:48:32	-2	0.0	8.38	0.0	
06/26/2022	18:48:32	-4	0.0	8.38	0.0	
06/26/2022	18:48:32	-3	0.0	8.38	0.0	
06/26/2022	18:48:32	-2	0.0	8.38	0.0	
06/26/2022	18:48:32	-3	0.0	8.38	0.0	
06/26/2022	18:48:32	-2	0.0	8.38	0.0	
06/26/2022	18:48:32	-3	0.0	8.38	0.0	
06/26/2022	18:48:32	-2	0.0	8.38	0.0	
06/26/2022	18:48:32	-3	0.0	8.38	0.0	
06/26/2022	18:48:32	-3	0.0	8.39	0.0	
06/26/2022	18:48:32	-3	0.0	8.38	0.0	
06/26/2022	18:48:32	-3	0.0	8.39	0.0	
06/26/2022	18:48:32	-2	0.0	8.38	0.0	
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	15	0.0	8.38	0.0	
06/26/2022	19:20:32	13	0.0	8.38	0.0	

Well	Field	Job Start	Customer	Job Number
CHARLES JAMISON MSH 406H	MARSHALL COUNTY	Jun/26/2022	SWN	EOHC-01211

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	13	0.0	8.38	0.0	
06/26/2022	19:20:32	13	0.0	8.38	0.0	
06/26/2022	19:20:32	15	0.0	8.38	0.0	
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	15	0.0	8.38	0.0	
06/26/2022	19:20:32	15	0.0	8.38	0.0	
06/26/2022	19:20:32	15	0.0	8.38	0.0	
06/26/2022	19:20:32	16	0.0	8.38	0.0	
06/26/2022	19:20:32	15	0.0	8.38	0.0	
06/26/2022	19:20:32	15	0.0	8.38	0.0	
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	13	0.0	8.38	0.0	
06/26/2022	19:20:32	15	0.0	8.38	0.0	
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	15	0.0	8.38	0.0	
06/26/2022	19:20:32	15	0.0	8.38	0.0	
06/26/2022	19:20:32	15	0.0	8.38	0.0	
06/26/2022	19:20:32	15	0.0	8.38	0.0	
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	15	0.0	8.38	0.0	
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	14	0.0	8.38	0.0	
06/26/2022	19:20:32	51	0.0	8.38	0.0	
06/26/2022	19:20:32	9	0.0	8.38	0.0	
06/26/2022	19:20:32	46	0.2	8.38	0.0	
06/26/2022	19:20:32	79	0.8	9.15	0.0	
06/26/2022	19:20:32	103	1.5	10.72	0.0	
06/26/2022	19:20:32	118	2.2	12.12	0.0	
06/26/2022	19:20:32	121	3.0	13.32	0.0	
06/26/2022	19:20:32	126	3.4	13.81	0.0	
06/26/2022	19:20:32	139	3.7	14.08	0.0	
06/26/2022	19:20:32	137	4.0	14.26	0.0	
06/26/2022	19:20:32	146	4.0	14.31	0.0	
06/26/2022	19:20:32	152	4.1	14.33	0.0	
06/26/2022	19:20:32	167	4.1	14.33	0.0	
06/26/2022	19:20:32	162	4.2	14.34	0.0	
06/26/2022	19:20:32	175	4.2	14.34	0.0	
06/26/2022	19:20:32	187	4.2	14.35	0.0	
06/26/2022	19:20:32	188	4.2	14.35	0.0	
06/26/2022	19:20:32	206	4.2	14.35	0.0	
06/26/2022	19:20:32	209	4.2	14.36	0.0	
06/26/2022	19:20:32	235	4.2	14.37	0.0	
06/26/2022	19:20:32	243	4.2	14.37	0.0	
06/26/2022	19:20:32	296	4.2	14.36	0.0	
06/26/2022	19:20:32	430	4.2	14.36	0.0	
06/26/2022	19:20:32	597	4.2	14.35	0.0	
06/26/2022	19:20:32	688	4.2	14.34	0.0	
06/26/2022	19:20:32	731	4.2	14.34	0.0	
06/26/2022	19:20:32	780	4.2	14.34	0.0	
06/26/2022	19:20:32	1114	4.2	14.34	0.0	
06/26/2022	19:20:32	1160	4.6	14.34	0.0	

Well	Field	Job Start	Customer	Job Number
CHARLES JAMISON MSH 406H	MARSHALL COUNTY	Jun/26/2022	SWN	EOHC-01211

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	19:20:32	1221	5.6	14.35	0.0	
06/26/2022	19:20:32	1248	5.9	14.35	0.0	
06/26/2022	19:20:32	1268	6.1	14.35	0.0	
06/26/2022	19:20:32	1304	6.2	14.35	0.0	
06/26/2022	19:20:32	1330	6.3	14.35	0.0	
06/26/2022	19:20:32	1386	6.4	14.35	0.0	
06/26/2022	19:20:32	1421	6.4	14.35	0.0	
06/26/2022	19:20:32	1415	6.4	14.34	0.0	
06/26/2022	19:20:32	1474	6.4	14.33	0.0	
06/26/2022	19:20:32	1529	6.4	14.32	0.0	
06/26/2022	19:20:32	1518	6.4	14.32	0.0	
06/26/2022	19:20:32	1559	6.4	14.32	0.0	
06/26/2022	19:20:32	1602	6.4	14.32	0.0	
06/26/2022	19:20:32	1602	6.4	14.32	0.0	
06/26/2022	19:20:32	1622	6.4	14.32	0.0	
06/26/2022	19:20:32	1625	6.4	14.32	0.0	
06/26/2022	19:20:32	1674	6.4	14.33	0.0	
06/26/2022	19:20:32	1651	6.4	14.33	0.0	
06/26/2022	19:20:32	1636	6.4	14.34	0.0	
06/26/2022	19:20:32	1709	6.4	14.34	0.0	
06/26/2022	19:20:32	1668	6.4	14.35	0.0	
06/26/2022	19:20:32	1683	6.4	14.35	0.0	
06/26/2022	19:20:32	1686	6.4	14.35	0.0	
06/26/2022	19:20:32	1683	6.4	14.35	0.0	
06/26/2022	19:20:32	1709	6.4	14.36	0.0	
06/26/2022	19:20:32	1688	6.4	14.37	0.0	
06/26/2022	19:20:32	1693	6.4	14.37	0.0	
06/26/2022	19:20:32	1746	6.4	14.37	0.0	
06/26/2022	19:20:32	1711	6.4	14.38	0.0	
06/26/2022	19:20:32	1720	6.4	14.38	0.0	
06/26/2022	19:20:32	1752	6.4	14.38	0.0	
06/26/2022	19:20:32	1760	6.4	14.38	0.0	
06/26/2022	19:20:32	1770	6.4	14.39	0.0	
06/26/2022	19:20:32	1735	6.4	14.39	0.0	
06/26/2022	19:20:32	1792	6.4	14.39	0.0	
06/26/2022	19:20:32	1787	6.4	14.39	0.0	
06/26/2022	19:20:32	1752	6.4	14.39	0.0	
06/26/2022	19:20:32	1785	6.4	14.39	0.0	
06/26/2022	19:20:32	1760	6.4	14.40	0.0	
06/26/2022	19:20:32	1778	6.4	14.40	0.0	
06/26/2022	19:20:32	1787	6.4	14.40	0.0	
06/26/2022	19:20:32	1754	6.4	14.41	0.0	
06/26/2022	19:20:32	1795	6.4	14.41	0.0	
06/26/2022	19:20:32	1782	6.4	14.41	0.0	
06/26/2022	19:20:32	1733	6.4	14.41	0.0	
06/26/2022	19:20:32	1777	6.4	14.41	0.0	
06/26/2022	19:20:32	1736	6.4	14.41	0.0	
06/26/2022	19:20:32	1748	6.4	14.41	0.0	
06/26/2022	19:20:32	1754	6.4	14.42	0.0	
06/26/2022	19:20:32	1735	6.4	14.43	0.0	
06/26/2022	19:20:32	1747	6.4	14.44	0.0	
06/26/2022	19:20:32	1698	6.4	14.45	0.0	
06/26/2022	19:20:32	1735	6.4	14.45	0.0	
06/26/2022	19:20:32	1724	6.4	14.46	0.0	

Well	Field	Job Start	Customer	Job Number
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Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	19:20:32	1705	6.4	14.48	0.0	
06/26/2022	19:20:32	1703	6.4	14.48	0.0	
06/26/2022	19:20:32	1683	6.4	14.48	0.0	
06/26/2022	19:20:32	1688	6.4	14.48	0.0	
06/26/2022	19:20:32	1661	6.4	14.48	0.0	
06/26/2022	19:20:32	1691	6.4	14.48	0.0	
06/26/2022	19:20:32	1663	6.4	14.49	0.0	
06/26/2022	19:52:32	1991	7.6	14.97	0.0	
06/26/2022	19:52:32	2052	7.6	14.97	0.0	
06/26/2022	19:52:32	1990	7.6	14.97	0.0	
06/26/2022	19:52:32	1989	7.6	14.97	0.0	
06/26/2022	19:52:32	2028	7.6	14.97	0.0	
06/26/2022	19:52:32	2009	7.6	14.97	0.0	
06/26/2022	19:52:32	2043	7.6	14.97	0.0	
06/26/2022	19:52:32	2046	7.6	14.97	0.0	
06/26/2022	19:52:32	1978	7.6	14.97	0.0	
06/26/2022	19:52:32	2013	7.6	14.97	0.0	
06/26/2022	19:52:32	2015	7.6	14.97	0.0	
06/26/2022	19:52:32	2017	7.6	14.97	0.0	
06/26/2022	19:52:32	2043	7.6	14.97	0.0	
06/26/2022	19:52:32	1954	7.6	14.97	0.0	
06/26/2022	19:52:32	2034	7.6	14.97	0.0	
06/26/2022	19:52:32	1958	7.6	14.97	0.0	
06/26/2022	19:52:32	2034	7.6	14.97	0.0	
06/26/2022	19:52:32	2062	7.6	14.97	0.0	
06/26/2022	19:52:32	2006	7.6	14.97	0.0	
06/26/2022	19:52:32	2028	7.6	14.97	0.0	
06/26/2022	19:52:32	1993	7.6	14.97	0.0	
06/26/2022	19:52:32	1996	7.6	14.97	0.0	
06/26/2022	19:52:32	2051	7.6	14.97	0.0	
06/26/2022	19:52:32	2001	7.6	14.97	0.0	
06/26/2022	19:52:32	2005	7.6	14.97	0.0	
06/26/2022	19:52:32	2013	7.6	14.97	0.0	
06/26/2022	19:52:32	2011	7.6	14.97	0.0	
06/26/2022	19:52:32	2029	7.6	14.97	0.0	
06/26/2022	19:52:32	2013	7.6	14.97	0.0	
06/26/2022	19:52:32	2061	7.6	14.97	0.0	
06/26/2022	19:52:32	2015	7.6	14.97	0.0	
06/26/2022	19:52:32	1998	7.6	14.97	0.0	
06/26/2022	19:52:32	2002	7.6	14.97	0.0	
06/26/2022	19:52:32	1999	7.6	14.97	0.0	
06/26/2022	19:52:32	2013	7.6	14.97	0.0	
06/26/2022	19:52:32	2036	7.6	14.97	0.0	
06/26/2022	19:52:32	1983	7.6	14.97	0.0	
06/26/2022	19:52:32	1996	7.6	14.97	0.0	
06/26/2022	19:52:32	2049	7.6	14.97	0.0	
06/26/2022	19:52:32	2032	7.6	14.97	0.0	
06/26/2022	19:52:32	2054	7.6	14.97	0.0	
06/26/2022	19:52:32	2024	7.6	14.97	0.0	
06/26/2022	19:52:32	2015	7.6	14.97	0.0	
06/26/2022	19:52:32	2004	7.6	14.97	0.0	
06/26/2022	19:52:32	1981	7.6	14.97	0.0	
06/26/2022	19:52:32	1990	7.6	14.97	0.0	
06/26/2022	19:52:32	1988	7.6	14.97	0.0	

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06/26/2022	19:52:32	2042	7.6	14.97	0.0	
06/26/2022	19:52:32	1964	7.6	14.97	0.0	
06/26/2022	19:52:32	2031	7.6	14.97	0.0	
06/26/2022	19:52:32	2052	7.6	14.97	0.0	
06/26/2022	19:52:32	2018	7.6	14.97	0.0	
06/26/2022	19:52:32	2033	7.6	14.97	0.0	
06/26/2022	19:52:32	1983	7.6	14.97	0.0	
06/26/2022	19:52:32	1976	7.6	14.97	0.0	
06/26/2022	19:52:32	2040	7.6	14.97	0.0	
06/26/2022	19:52:32	1998	7.6	14.97	0.0	
06/26/2022	19:52:32	2022	7.6	14.97	0.0	
06/26/2022	19:52:32	2003	7.6	14.97	0.0	
06/26/2022	19:52:32	2033	7.6	14.97	0.0	
06/26/2022	19:52:32	2021	7.6	14.97	0.0	
06/26/2022	19:52:32	1967	7.6	14.97	0.0	
06/26/2022	19:52:32	2030	7.6	14.97	0.0	
06/26/2022	19:52:32	2033	7.6	14.97	0.0	
06/26/2022	19:52:32	2001	7.6	14.97	0.0	
06/26/2022	19:52:32	2006	7.6	14.98	0.0	
06/26/2022	19:52:32	1976	7.6	14.97	0.0	
06/26/2022	19:52:32	2014	7.6	14.97	0.0	
06/26/2022	19:52:32	2036	7.6	14.97	0.0	
06/26/2022	19:52:32	1986	7.6	14.97	0.0	
06/26/2022	19:52:32	1980	7.6	14.97	0.0	
06/26/2022	19:52:32	2004	7.6	14.98	0.0	
06/26/2022	19:52:32	2019	7.6	14.98	0.0	
06/26/2022	19:52:32	2005	7.6	14.98	0.0	
06/26/2022	19:52:32	1994	7.6	14.98	0.0	
06/26/2022	19:52:32	2036	7.6	14.98	0.0	
06/26/2022	19:52:32	1999	7.6	14.98	0.0	
06/26/2022	19:52:32	1968	7.6	14.97	0.0	
06/26/2022	19:52:32	2002	7.6	14.98	0.0	
06/26/2022	19:52:32	1989	7.6	14.98	0.0	
06/26/2022	19:52:32	2018	7.6	14.98	0.0	
06/26/2022	19:52:32	2041	7.6	14.98	0.0	
06/26/2022	19:52:32	1956	7.6	14.97	0.0	
06/26/2022	19:52:32	2004	7.6	14.97	0.0	
06/26/2022	19:52:32	2032	7.6	14.97	0.0	
06/26/2022	19:52:32	2018	7.6	14.97	0.0	
06/26/2022	19:52:32	2031	7.6	14.98	0.0	
06/26/2022	19:52:32	1960	7.6	14.97	0.0	
06/26/2022	19:52:32	1995	7.6	14.98	0.0	
06/26/2022	19:52:32	1962	7.6	14.98	0.0	
06/26/2022	19:52:32	1984	7.6	14.98	0.0	
06/26/2022	19:52:32	2044	7.6	14.98	0.0	
06/26/2022	19:52:32	1991	7.6	14.98	0.0	
06/26/2022	19:52:32	2021	7.6	14.98	0.0	
06/26/2022	19:52:32	1993	7.6	14.98	0.0	
06/26/2022	19:52:32	1967	7.6	14.98	0.0	
06/26/2022	19:52:32	2036	7.6	14.98	0.0	
06/26/2022	19:52:32	2010	7.6	14.98	0.0	
06/26/2022	19:52:32	1990	7.6	14.98	0.0	
06/26/2022	19:52:32	1988	7.6	14.98	0.0	
06/26/2022	19:52:32	1969	7.6	14.98	0.0	

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06/26/2022	19:52:32	1991	7.6	14.98	0.0	
06/26/2022	19:52:32	2018	7.6	14.98	0.0	
06/26/2022	19:52:32	2023	7.6	14.98	0.0	
06/26/2022	19:52:32	1954	7.6	14.98	0.0	
06/26/2022	19:52:32	1991	7.6	14.98	0.0	
06/26/2022	19:52:32	2013	7.6	14.98	0.0	
06/26/2022	19:52:32	1993	7.6	14.98	0.0	
06/26/2022	19:52:32	2033	7.6	14.98	0.0	
06/26/2022	19:52:32	1953	7.6	14.98	0.0	
06/26/2022	19:52:32	1989	7.6	14.98	0.0	
06/26/2022	19:52:32	2045	7.6	14.98	0.0	
06/26/2022	19:52:32	1983	7.6	14.98	0.0	
06/26/2022	19:52:32	1990	7.6	14.98	0.0	
06/26/2022	19:52:32	1987	7.6	14.98	0.0	
06/26/2022	19:52:32	1988	7.6	14.98	0.0	
06/26/2022	19:52:32	2030	7.6	14.98	0.0	
06/26/2022	19:52:32	1992	7.6	14.98	0.0	
06/26/2022	19:52:32	2037	7.6	14.98	0.0	
06/26/2022	19:52:32	2013	7.6	14.98	0.0	
06/26/2022	19:52:32	1981	7.6	14.98	0.0	
06/26/2022	19:52:32	1980	7.6	14.98	0.0	
06/26/2022	19:52:32	1976	7.6	14.98	0.0	
06/26/2022	19:52:32	2012	7.6	14.97	0.0	
06/26/2022	19:52:32	2024	7.6	14.97	0.0	
06/26/2022	20:24:32	2189	8.3	14.90	0.0	
06/26/2022	20:24:32	2183	8.3	14.90	0.0	
06/26/2022	20:24:32	2186	8.3	14.90	0.0	
06/26/2022	20:24:32	2177	8.3	14.90	0.0	
06/26/2022	20:24:32	2177	8.3	14.91	0.0	
06/26/2022	20:24:32	2176	8.3	14.91	0.0	
06/26/2022	20:24:32	2186	8.3	14.91	0.0	
06/26/2022	20:24:32	2180	8.3	14.91	0.0	
06/26/2022	20:24:32	2174	8.3	14.91	0.0	
06/26/2022	20:24:32	2186	8.3	14.92	0.0	
06/26/2022	20:24:32	2188	8.3	14.92	0.0	
06/26/2022	20:24:32	2189	8.3	14.92	0.0	
06/26/2022	20:24:32	2178	8.3	14.93	0.0	
06/26/2022	20:24:32	2189	8.3	14.93	0.0	
06/26/2022	20:24:32	2174	8.3	14.93	0.0	
06/26/2022	20:24:32	2180	8.3	14.94	0.0	
06/26/2022	20:24:32	2180	8.3	14.94	0.0	
06/26/2022	20:24:32	2192	8.3	14.94	0.0	
06/26/2022	20:24:32	2182	8.3	14.95	0.0	
06/26/2022	20:24:32	2179	8.3	14.95	0.0	
06/26/2022	20:24:32	2185	8.3	14.95	0.0	
06/26/2022	20:24:32	2202	8.3	14.96	0.0	
06/26/2022	20:24:32	2202	8.3	14.96	0.0	
06/26/2022	20:24:32	2186	8.3	14.96	0.0	
06/26/2022	20:24:32	2197	8.3	14.96	0.0	
06/26/2022	20:24:32	2184	8.3	14.96	0.0	
06/26/2022	20:24:32	2184	8.3	14.97	0.0	
06/26/2022	20:24:32	2179	8.3	14.97	0.0	
06/26/2022	20:24:32	2195	8.3	14.97	0.0	
06/26/2022	20:24:32	2188	8.3	14.97	0.0	

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06/26/2022	20:24:32	2192	8.3	14.97	0.0	
06/26/2022	20:24:32	2200	8.3	14.97	0.0	
06/26/2022	20:24:32	2197	8.3	14.97	0.0	
06/26/2022	20:24:32	2192	8.3	14.97	0.0	
06/26/2022	20:24:32	2194	8.3	14.97	0.0	
06/26/2022	20:24:32	2187	8.3	14.97	0.0	
06/26/2022	20:24:32	2185	8.3	14.98	0.0	
06/26/2022	20:24:32	2182	8.3	14.98	0.0	
06/26/2022	20:24:32	2194	8.3	14.98	0.0	
06/26/2022	20:24:32	2194	8.2	14.98	0.0	
06/26/2022	20:24:32	2196	8.2	14.98	0.0	
06/26/2022	20:24:32	2200	8.3	14.99	0.0	
06/26/2022	20:24:32	2197	8.3	14.99	0.0	
06/26/2022	20:24:32	2199	8.3	14.99	0.0	
06/26/2022	20:24:32	2192	8.3	14.99	0.0	
06/26/2022	20:24:32	2198	8.3	14.99	0.0	
06/26/2022	20:24:32	2186	8.3	14.99	0.0	
06/26/2022	20:24:32	2193	8.2	14.99	0.0	
06/26/2022	20:24:32	2181	8.2	14.99	0.0	
06/26/2022	20:24:32	2199	8.2	14.99	0.0	
06/26/2022	20:24:32	2192	8.2	14.99	0.0	
06/26/2022	20:24:32	2194	8.2	15.00	0.0	
06/26/2022	20:24:32	2202	8.2	15.00	0.0	
06/26/2022	20:24:32	2192	8.2	15.00	0.0	
06/26/2022	20:24:32	2200	8.2	15.00	0.0	
06/26/2022	20:24:32	2188	8.2	15.00	0.0	
06/26/2022	20:24:32	2199	8.2	15.00	0.0	
06/26/2022	20:24:32	2184	8.2	15.00	0.0	
06/26/2022	20:24:32	2195	8.2	15.00	0.0	
06/26/2022	20:24:32	2184	8.2	15.00	0.0	
06/26/2022	20:24:32	2198	8.2	15.00	0.0	
06/26/2022	20:24:32	2195	8.2	15.00	0.0	
06/26/2022	20:24:32	2198	8.2	15.00	0.0	
06/26/2022	20:24:32	2184	8.2	15.00	0.0	
06/26/2022	20:24:32	2199	8.2	15.00	0.0	
06/26/2022	20:24:32	2195	8.2	15.00	0.0	
06/26/2022	20:24:32	2180	8.2	15.00	0.0	
06/26/2022	20:24:32	2190	8.2	15.00	0.0	
06/26/2022	20:24:32	2186	8.2	15.00	0.0	
06/26/2022	20:24:32	2198	8.2	15.01	0.0	
06/26/2022	20:24:32	2188	8.2	15.01	0.0	
06/26/2022	20:24:32	2200	8.2	15.01	0.0	
06/26/2022	20:24:32	2200	8.2	15.01	0.0	
06/26/2022	20:24:32	2203	8.2	15.01	0.0	
06/26/2022	20:24:32	2194	8.2	15.01	0.0	
06/26/2022	20:24:32	2191	8.2	15.01	0.0	
06/26/2022	20:24:32	2202	8.2	15.01	0.0	
06/26/2022	20:24:32	2187	8.2	15.01	0.0	
06/26/2022	20:24:32	2198	8.2	15.01	0.0	
06/26/2022	20:24:32	2189	8.2	15.01	0.0	
06/26/2022	20:24:32	2202	8.2	15.02	0.0	
06/26/2022	20:24:32	2192	8.2	15.02	0.0	
06/26/2022	20:24:32	2197	8.3	15.02	0.0	
06/26/2022	20:24:32	2207	8.3	15.02	0.0	

Well	Field	Job Start	Customer	Job Number
CHARLES JAMISON MSH 406H	MARSHALL COUNTY	Jun/26/2022	SWN	EOHC-01211

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	20:24:32	2204	8.2	15.02	0.0	
06/26/2022	20:24:32	2194	8.2	15.02	0.0	
06/26/2022	20:24:32	2203	8.2	15.02	0.0	
06/26/2022	20:24:32	2186	8.2	15.02	0.0	
06/26/2022	20:24:32	2196	8.2	15.03	0.0	
06/26/2022	20:24:32	2190	8.2	15.03	0.0	
06/26/2022	20:24:32	2207	8.2	15.03	0.0	
06/26/2022	20:24:32	2196	8.2	15.03	0.0	
06/26/2022	20:24:32	2199	8.2	15.03	0.0	
06/26/2022	20:24:32	2198	8.2	15.03	0.0	
06/26/2022	20:24:32	2196	8.2	15.03	0.0	
06/26/2022	20:24:32	2200	8.2	15.03	0.0	
06/26/2022	20:24:32	2196	8.2	15.03	0.0	
06/26/2022	20:24:32	2210	8.2	15.03	0.0	
06/26/2022	20:24:32	2198	8.2	15.03	0.0	
06/26/2022	20:24:32	2197	8.2	15.03	0.0	
06/26/2022	20:24:32	2193	8.2	15.03	0.0	
06/26/2022	20:24:32	2210	8.2	15.03	0.0	
06/26/2022	20:24:32	2194	8.2	15.03	0.0	
06/26/2022	20:24:32	2198	8.2	15.03	0.0	
06/26/2022	20:24:32	2204	8.2	15.03	0.0	
06/26/2022	20:24:32	2208	8.2	15.03	0.0	
06/26/2022	20:24:32	2222	8.2	15.03	0.0	
06/26/2022	20:24:32	2200	8.2	15.03	0.0	
06/26/2022	20:24:32	2207	8.2	15.02	0.0	
06/26/2022	20:24:32	2191	8.2	15.02	0.0	
06/26/2022	20:24:32	2193	8.2	15.02	0.0	
06/26/2022	20:24:32	2201	8.2	15.02	0.0	
06/26/2022	20:24:32	2203	8.2	15.01	0.0	
06/26/2022	20:24:32	2182	8.2	15.01	0.0	
06/26/2022	20:24:32	2185	8.2	15.01	0.0	
06/26/2022	20:24:32	2194	8.2	15.01	0.0	
06/26/2022	20:24:32	2191	8.2	15.01	0.0	
06/26/2022	20:24:32	2186	8.2	15.01	0.0	
06/26/2022	20:24:32	2184	8.2	15.01	0.0	
06/26/2022	20:24:32	2207	8.2	15.00	0.0	
06/26/2022	20:24:32	2183	8.2	15.00	0.0	
06/26/2022	20:24:32	2186	8.2	15.00	0.0	
06/26/2022	20:24:32	2181	8.2	15.00	0.0	
06/26/2022	20:56:32	1534	6.4	15.01	0.0	
06/26/2022	20:56:32	1525	6.4	15.01	0.0	
06/26/2022	20:56:32	1478	6.4	15.01	0.0	
06/26/2022	20:56:32	1529	6.4	15.01	0.0	
06/26/2022	20:56:32	1479	6.4	15.01	0.0	
06/26/2022	20:56:32	1478	6.4	15.01	0.0	
06/26/2022	20:56:32	1489	6.4	15.01	0.0	
06/26/2022	20:56:32	1499	6.4	15.01	0.0	
06/26/2022	20:56:32	1533	6.5	15.01	0.0	
06/26/2022	20:56:32	1487	6.5	15.00	0.0	
06/26/2022	20:56:32	1533	6.5	15.00	0.0	
06/26/2022	20:56:32	1543	6.5	15.00	0.0	
06/26/2022	20:56:32	1483	6.5	15.00	0.0	
06/26/2022	20:56:32	1491	6.4	15.00	0.0	
06/26/2022	20:56:32	1496	6.4	15.00	0.0	

Well	Field	Job Start	Customer	Job Number
CHARLES JAMISON MSH 406H	MARSHALL COUNTY	Jun/26/2022	SWN	EOHC-01211

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	20:56:32	1497	6.4	15.00	0.0	
06/26/2022	20:56:32	1467	6.4	15.00	0.0	
06/26/2022	20:56:32	1540	6.4	15.00	0.0	
06/26/2022	20:56:32	1515	6.4	15.00	0.0	
06/26/2022	20:56:32	1500	6.4	14.99	0.0	
06/26/2022	20:56:32	1564	6.4	14.99	0.0	
06/26/2022	20:56:32	1497	6.4	14.99	0.0	
06/26/2022	20:56:32	1495	6.4	14.99	0.0	
06/26/2022	20:56:32	1493	6.4	14.98	0.0	
06/26/2022	20:56:32	1473	6.4	14.98	0.0	
06/26/2022	20:56:32	1509	6.4	14.98	0.0	
06/26/2022	20:56:32	1477	6.5	14.99	0.0	
06/26/2022	20:56:32	1478	6.4	14.99	0.0	
06/26/2022	20:56:32	1537	6.4	14.98	0.0	
06/26/2022	20:56:32	1509	6.4	14.98	0.0	
06/26/2022	20:56:32	1514	6.4	14.97	0.0	
06/26/2022	20:56:32	1550	6.4	14.97	0.0	
06/26/2022	20:56:32	1492	6.4	14.97	0.0	
06/26/2022	20:56:32	1514	6.5	14.96	0.0	
06/26/2022	20:56:32	1460	6.5	14.96	0.0	
06/26/2022	20:56:32	1490	6.5	14.95	0.0	
06/26/2022	20:56:32	1499	6.5	14.95	0.0	
06/26/2022	20:56:32	1458	6.4	14.94	0.0	
06/26/2022	20:56:32	1506	6.5	14.94	0.0	
06/26/2022	20:56:32	1494	6.4	14.93	0.0	
06/26/2022	20:56:32	1517	6.4	14.93	0.0	
06/26/2022	20:56:32	1538	6.4	14.93	0.0	
06/26/2022	20:56:32	1510	6.4	14.93	0.0	
06/26/2022	20:56:32	1525	6.4	14.93	0.0	
06/26/2022	20:56:32	1514	6.4	14.92	0.0	
06/26/2022	20:56:32	1458	6.4	14.92	0.0	
06/26/2022	20:56:32	1501	6.4	14.92	0.0	
06/26/2022	20:56:32	1465	6.4	14.91	0.0	
06/26/2022	20:56:32	1454	6.4	14.91	0.0	
06/26/2022	20:56:32	1478	6.4	14.91	0.0	
06/26/2022	20:56:32	1479	6.4	14.91	0.0	
06/26/2022	20:56:32	1520	6.4	14.91	0.0	
06/26/2022	20:56:32	1484	6.4	14.90	0.0	
06/26/2022	20:56:32	1517	6.4	14.90	0.0	
06/26/2022	20:56:32	1536	6.4	14.89	0.0	
06/26/2022	20:56:32	1485	6.4	14.89	0.0	
06/26/2022	20:56:32	1481	6.5	14.89	0.0	
06/26/2022	20:56:32	1490	6.5	14.88	0.0	
06/26/2022	20:56:32	1464	6.5	14.88	0.0	
06/26/2022	20:56:32	1476	6.5	14.88	0.0	
06/26/2022	20:56:32	1450	6.5	14.88	0.0	
06/26/2022	20:56:32	1491	6.5	14.88	0.0	
06/26/2022	20:56:32	1525	6.4	14.88	0.0	
06/26/2022	20:56:32	1480	6.5	14.88	0.0	
06/26/2022	20:56:32	1538	6.4	14.88	0.0	
06/26/2022	20:56:32	1485	6.4	14.89	0.0	
06/26/2022	20:56:32	1488	6.4	14.88	0.0	
06/26/2022	20:56:32	1470	6.4	14.88	0.0	
06/26/2022	20:56:32	1459	6.4	14.88	0.0	

Well	Field	Job Start	Customer	Job Number
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Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	20:56:32	1464	6.4	14.88	0.0	
06/26/2022	20:56:32	1469	6.4	14.88	0.0	
06/26/2022	20:56:32	1524	6.5	14.88	0.0	
06/26/2022	20:56:32	1493	6.5	14.88	0.0	
06/26/2022	20:56:32	1493	6.5	14.89	0.0	
06/26/2022	20:56:32	1534	6.4	14.89	0.0	
06/26/2022	20:56:32	1482	6.4	14.89	0.0	
06/26/2022	20:56:32	1494	6.4	14.89	0.0	
06/26/2022	20:56:32	1465	6.4	14.89	0.0	
06/26/2022	20:56:32	1488	6.4	14.89	0.0	
06/26/2022	20:56:32	1499	6.4	14.89	0.0	
06/26/2022	20:56:32	1452	6.4	14.89	0.0	
06/26/2022	20:56:32	1508	6.4	14.90	0.0	
06/26/2022	20:56:32	1502	6.4	14.90	0.0	
06/26/2022	20:56:32	1507	6.4	14.90	0.0	
06/26/2022	20:56:32	1511	6.4	14.90	0.0	
06/26/2022	20:56:32	1477	6.4	14.90	0.0	
06/26/2022	20:56:32	1487	6.5	14.90	0.0	
06/26/2022	20:56:32	1491	6.5	14.91	0.0	
06/26/2022	20:56:32	1436	6.5	14.91	0.0	
06/26/2022	20:56:32	1500	6.5	14.91	0.0	
06/26/2022	20:56:32	1485	6.4	14.91	0.0	
06/26/2022	20:56:32	1488	6.4	14.92	0.0	
06/26/2022	20:56:32	1511	6.4	14.92	0.0	
06/26/2022	20:56:32	1497	6.4	14.92	0.0	
06/26/2022	20:56:32	1522	6.4	14.92	0.0	
06/26/2022	20:56:32	1467	6.4	14.92	0.0	
06/26/2022	20:56:32	1479	6.4	14.93	0.0	
06/26/2022	20:56:32	1503	6.5	14.93	0.0	
06/26/2022	20:56:32	1457	6.5	14.93	0.0	
06/26/2022	20:56:32	1466	6.5	14.93	0.0	
06/26/2022	20:56:32	1506	6.5	14.94	0.0	
06/26/2022	20:56:32	1496	6.5	14.94	0.0	
06/26/2022	20:56:32	1517	6.4	14.94	0.0	
06/26/2022	20:56:32	1491	6.4	14.94	0.0	
06/26/2022	20:56:32	1530	6.4	14.94	0.0	
06/26/2022	20:56:32	1548	6.4	14.94	0.0	
06/26/2022	20:56:32	1480	6.4	14.94	0.0	
06/26/2022	20:56:32	1494	6.4	14.94	0.0	
06/26/2022	20:56:32	1469	6.4	14.94	0.0	
06/26/2022	20:56:32	1474	6.4	14.94	0.0	
06/26/2022	20:56:32	1499	6.4	14.95	0.0	
06/26/2022	20:56:32	1487	6.4	14.95	0.0	
06/26/2022	20:56:32	1526	6.4	14.95	0.0	
06/26/2022	20:56:32	1505	6.4	14.95	0.0	
06/26/2022	20:56:32	1489	6.4	14.95	0.0	
06/26/2022	20:56:32	1535	6.4	14.95	0.0	
06/26/2022	20:56:32	1500	6.4	14.95	0.0	
06/26/2022	20:56:32	1487	6.4	14.96	0.0	
06/26/2022	20:56:32	1511	6.4	14.96	0.0	
06/26/2022	20:56:32	1467	6.4	14.96	0.0	
06/26/2022	20:56:32	1494	6.4	14.96	0.0	
06/26/2022	20:56:32	1489	6.4	14.96	0.0	
06/26/2022	20:56:32	1488	6.4	14.96	0.0	

Well	Field	Job Start	Customer	Job Number
CHARLES JAMISON MSH 406H	MARSHALL COUNTY	Jun/26/2022	SWN	EOHC-01211

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	20:56:32	1487	6.4	14.97	0.0	
06/26/2022	21:28:32	1561	6.4	15.05	0.0	
06/26/2022	21:28:32	1588	6.4	15.05	0.0	
06/26/2022	21:28:32	1603	6.4	15.05	0.0	
06/26/2022	21:28:32	1544	6.4	15.05	0.0	
06/26/2022	21:28:32	1590	6.4	15.05	0.0	
06/26/2022	21:28:32	1575	6.5	15.05	0.0	
06/26/2022	21:28:32	1535	6.4	15.05	0.0	
06/26/2022	21:28:32	1549	6.5	15.05	0.0	
06/26/2022	21:28:32	1538	6.4	15.06	0.0	
06/26/2022	21:28:32	1563	6.5	15.06	0.0	
06/26/2022	21:28:32	1576	6.5	15.06	0.0	
06/26/2022	21:28:32	1571	6.4	15.06	0.0	
06/26/2022	21:28:32	1610	6.4	15.06	0.0	
06/26/2022	21:28:32	1564	6.4	15.06	0.0	
06/26/2022	21:28:32	1575	6.4	15.06	0.0	
06/26/2022	21:28:32	1603	6.4	15.05	0.0	
06/26/2022	21:28:32	1558	6.4	15.05	0.0	
06/26/2022	21:28:32	1558	6.4	15.05	0.0	
06/26/2022	21:28:32	1534	6.4	15.05	0.0	
06/26/2022	21:28:32	1547	6.4	15.06	0.0	
06/26/2022	21:28:32	1585	6.4	15.06	0.0	
06/26/2022	21:28:32	1542	6.4	15.06	0.0	
06/26/2022	21:28:32	1578	6.4	15.06	0.0	
06/26/2022	21:28:32	1599	6.5	15.06	0.0	
06/26/2022	21:28:32	1565	6.4	15.05	0.0	
06/26/2022	21:28:32	1586	6.4	15.05	0.0	
06/26/2022	21:28:32	1547	6.4	15.05	0.0	
06/26/2022	21:28:32	1566	6.4	15.05	0.0	
06/26/2022	21:28:32	1548	6.4	15.05	0.0	
06/26/2022	21:28:32	1527	6.4	15.05	0.0	
06/26/2022	21:28:32	1586	6.4	15.05	0.0	
06/26/2022	21:28:32	1567	6.4	15.05	0.0	
06/26/2022	21:28:32	1552	6.4	15.05	0.0	
06/26/2022	21:28:32	1615	6.4	15.05	0.0	
06/26/2022	21:28:32	1584	6.4	15.05	0.0	
06/26/2022	21:28:32	1604	6.4	15.05	0.0	
06/26/2022	21:28:32	1591	6.4	15.05	0.0	
06/26/2022	21:28:32	1564	6.4	15.05	0.0	
06/26/2022	21:28:32	1588	6.4	15.05	0.0	
06/26/2022	21:28:32	1541	6.4	15.05	0.0	
06/26/2022	21:28:32	1557	6.4	15.05	0.0	
06/26/2022	21:28:32	1554	6.4	15.05	0.0	
06/26/2022	21:28:32	1546	6.4	15.05	0.0	
06/26/2022	21:28:32	1570	6.4	15.05	0.0	
06/26/2022	21:28:32	1560	6.5	15.05	0.0	
06/26/2022	21:28:32	1579	6.4	15.05	0.0	
06/26/2022	21:28:32	1598	6.4	15.04	0.0	
06/26/2022	21:28:32	1544	6.4	15.04	0.0	
06/26/2022	21:28:32	1592	6.4	15.04	0.0	
06/26/2022	21:28:32	1579	6.5	15.04	0.0	
06/26/2022	21:28:32	1533	6.5	15.04	0.0	
06/26/2022	21:28:32	1555	6.5	15.04	0.0	
06/26/2022	21:28:32	1540	6.4	15.04	0.0	

Well	Field	Job Start	Customer	Job Number
CHARLES JAMISON MSH 406H	MARSHALL COUNTY	Jun/26/2022	SWN	EOHC-01211

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	21:28:32	1534	6.4	15.03	0.0	
06/26/2022	21:28:32	1562	6.4	15.03	0.0	
06/26/2022	21:28:32	1600	6.4	15.03	0.0	
06/26/2022	21:28:32	1560	6.4	15.03	0.0	
06/26/2022	21:28:32	1579	6.4	15.03	0.0	
06/26/2022	21:28:32	1626	6.4	15.03	0.0	
06/26/2022	21:28:32	1580	6.4	15.03	0.0	
06/26/2022	21:28:32	1573	6.4	15.03	0.0	
06/26/2022	21:28:32	1543	6.4	15.03	0.0	
06/26/2022	21:28:32	1546	6.4	15.02	0.0	
06/26/2022	21:28:32	1566	6.4	15.02	0.0	
06/26/2022	21:28:32	1506	6.4	15.02	0.0	
06/26/2022	21:28:32	1532	6.4	15.02	0.0	
06/26/2022	21:28:32	1568	6.4	15.02	0.0	
06/26/2022	21:28:32	1547	6.4	15.02	0.0	
06/26/2022	21:28:32	1569	6.4	15.02	0.0	
06/26/2022	21:28:32	1592	6.4	15.02	0.0	
06/26/2022	21:28:32	1626	6.4	15.02	0.0	
06/26/2022	21:28:32	1604	6.4	15.01	0.0	
06/26/2022	21:28:32	1554	6.4	15.01	0.0	
06/26/2022	21:28:32	1588	6.4	15.01	0.0	
06/26/2022	21:28:32	1554	6.4	15.01	0.0	
06/26/2022	21:28:32	1522	6.4	15.01	0.0	
06/26/2022	21:28:32	1564	6.4	15.01	0.0	
06/26/2022	21:28:32	1522	6.5	15.01	0.0	
06/26/2022	21:28:32	1546	6.4	15.01	0.0	
06/26/2022	21:28:32	1548	6.4	15.01	0.0	
06/26/2022	21:28:32	1543	6.4	15.01	0.0	
06/26/2022	21:28:32	1595	6.4	15.01	0.0	
06/26/2022	21:28:32	1561	6.4	15.01	0.0	
06/26/2022	21:28:32	1585	6.5	15.01	0.0	
06/26/2022	21:28:32	1618	6.5	15.02	0.0	
06/26/2022	21:28:32	1575	6.5	15.02	0.0	
06/26/2022	21:28:32	1569	6.5	15.02	0.0	
06/26/2022	21:28:32	1545	6.5	15.02	0.0	
06/26/2022	21:28:32	1552	6.5	15.02	0.0	
06/26/2022	21:28:32	1569	6.5	15.02	0.0	
06/26/2022	21:28:32	1508	6.5	15.02	0.0	
06/26/2022	21:28:32	1561	6.5	15.02	0.0	
06/26/2022	21:28:32	1572	6.5	15.02	0.0	
06/26/2022	21:28:32	1541	6.5	15.02	0.0	
06/26/2022	21:28:32	1583	6.4	15.02	0.0	
06/26/2022	21:28:32	1576	6.4	15.02	0.0	
06/26/2022	21:28:32	1579	6.5	15.02	0.0	
06/26/2022	21:28:32	1593	6.5	15.02	0.0	
06/26/2022	21:28:32	1550	6.5	15.02	0.0	
06/26/2022	21:28:32	1592	6.5	15.01	0.0	
06/26/2022	21:28:32	1536	6.5	15.02	0.0	
06/26/2022	21:28:32	1537	6.5	15.01	0.0	
06/26/2022	21:28:32	1587	6.5	15.01	0.0	
06/26/2022	21:28:32	1549	6.5	15.02	0.0	
06/26/2022	21:28:32	1567	6.5	15.01	0.0	
06/26/2022	21:28:32	1576	6.4	15.02	0.0	
06/26/2022	21:28:32	1576	6.4	15.02	0.0	

Well	Field	Job Start	Customer	Job Number
CHARLES JAMISON MSH 406H	MARSHALL COUNTY	Jun/26/2022	SWN	EOHC-01211

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	21:28:32	1542	6.4	15.02	0.0	
06/26/2022	21:28:32	1555	6.4	15.02	0.0	
06/26/2022	21:28:32	1576	6.4	15.02	0.0	
06/26/2022	21:28:32	1532	6.5	15.02	0.0	
06/26/2022	21:28:32	1531	6.5	15.02	0.0	
06/26/2022	21:28:32	1552	6.5	15.02	0.0	
06/26/2022	21:28:32	1548	6.5	15.02	0.0	
06/26/2022	21:28:32	1577	6.5	15.02	0.0	
06/26/2022	21:28:32	1561	6.5	15.02	0.0	
06/26/2022	21:28:32	1620	6.5	15.02	0.0	
06/26/2022	21:28:32	1601	6.5	15.02	0.0	
06/26/2022	21:28:32	1565	6.5	15.02	0.0	
06/26/2022	21:28:32	1599	6.5	15.02	0.0	
06/26/2022	21:28:32	1544	6.5	15.02	0.0	
06/26/2022	21:28:32	1556	6.5	15.02	0.0	
06/26/2022	21:28:32	1551	6.5	15.02	0.0	
06/26/2022	22:00:32	1732	6.4	14.95	0.0	
06/26/2022	22:00:32	1789	6.4	14.95	0.0	
06/26/2022	22:00:32	1733	6.4	14.95	0.0	
06/26/2022	22:00:32	1722	6.4	14.95	0.0	
06/26/2022	22:00:32	1720	6.4	14.95	0.0	
06/26/2022	22:00:32	1705	6.4	14.95	0.0	
06/26/2022	22:00:32	1718	6.4	14.95	0.0	
06/26/2022	22:00:32	1655	6.4	14.95	0.0	
06/26/2022	22:00:32	1710	6.5	14.96	0.0	
06/26/2022	22:00:32	1722	6.5	14.96	0.0	
06/26/2022	22:00:32	1697	6.4	14.96	0.0	
06/26/2022	22:00:32	1753	6.4	14.96	0.0	
06/26/2022	22:00:32	1764	6.4	14.96	0.0	
06/26/2022	22:00:32	1774	6.4	14.96	0.0	
06/26/2022	22:00:32	1755	6.4	14.96	0.0	
06/26/2022	22:00:32	1692	6.4	14.96	0.0	
06/26/2022	22:00:32	1716	6.4	14.96	0.0	
06/26/2022	22:00:32	1725	6.4	14.97	0.0	
06/26/2022	22:00:32	1667	6.4	14.97	0.0	
06/26/2022	22:00:32	1713	6.4	14.97	0.0	
06/26/2022	22:00:32	1681	6.4	14.97	0.0	
06/26/2022	22:00:32	1693	6.4	14.97	0.0	
06/26/2022	22:00:32	1686	6.4	14.97	0.0	
06/26/2022	22:00:32	1688	6.4	14.97	0.0	
06/26/2022	22:00:32	1728	6.4	14.97	0.0	
06/26/2022	22:00:32	1683	6.4	14.97	0.0	
06/26/2022	22:00:32	1732	6.4	14.97	0.0	
06/26/2022	22:00:32	1778	6.4	14.97	0.0	
06/26/2022	22:00:32	1740	6.4	14.97	0.0	
06/26/2022	22:00:32	1730	6.4	14.97	0.0	
06/26/2022	22:00:32	1730	6.4	14.98	0.0	
06/26/2022	22:00:32	1702	6.4	14.98	0.0	
06/26/2022	22:00:32	1721	6.4	14.98	0.0	
06/26/2022	22:00:32	1663	6.4	14.98	0.0	
06/26/2022	22:00:32	1701	6.4	14.98	0.0	
06/26/2022	22:00:32	1727	6.4	14.98	0.0	
06/26/2022	22:00:32	1685	6.4	14.98	0.0	
06/26/2022	22:00:32	1740	6.4	14.98	0.0	

Well	Field	Job Start	Customer	Job Number
CHARLES JAMISON MSH 406H	MARSHALL COUNTY	Jun/26/2022	SWN	EOHC-01211

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	22:00:32	1728	6.4	14.98	0.0	
06/26/2022	22:00:32	1723	6.4	14.98	0.0	
06/26/2022	22:00:32	1694	6.4	14.98	0.0	
06/26/2022	22:00:32	1730	6.4	14.98	0.0	
06/26/2022	22:00:32	1690	6.4	14.98	0.0	
06/26/2022	22:00:32	1662	6.4	14.99	0.0	
06/26/2022	22:00:32	1728	6.4	14.99	0.0	
06/26/2022	22:00:32	1695	6.4	14.99	0.0	
06/26/2022	22:00:32	1711	6.4	14.99	0.0	
06/26/2022	22:00:32	1741	6.4	14.99	0.0	
06/26/2022	22:00:32	1736	6.4	14.99	0.0	
06/26/2022	22:00:32	1752	6.4	14.99	0.0	
06/26/2022	22:00:32	1683	6.4	14.99	0.0	
06/26/2022	22:00:32	1725	6.4	14.99	0.0	
06/26/2022	22:00:32	1726	6.4	14.99	0.0	
06/26/2022	22:00:32	1674	6.4	14.99	0.0	
06/26/2022	22:00:32	1705	6.4	14.99	0.0	
06/26/2022	22:00:32	1712	6.4	14.99	0.0	
06/26/2022	22:00:32	1733	6.4	14.99	0.0	
06/26/2022	22:00:32	1745	6.4	14.99	0.0	
06/26/2022	22:00:32	1695	6.4	14.99	0.0	
06/26/2022	22:00:32	1733	6.4	14.99	0.0	
06/26/2022	22:00:32	1744	6.4	14.99	0.0	
06/26/2022	22:00:32	1678	6.4	14.99	0.0	
06/26/2022	22:00:32	1718	6.4	14.99	0.0	
06/26/2022	22:00:32	1691	6.4	14.99	0.0	
06/26/2022	22:00:32	1700	6.4	14.99	0.0	
06/26/2022	22:00:32	1706	6.4	14.99	0.0	
06/26/2022	22:00:32	1711	6.4	14.99	0.0	
06/26/2022	22:00:32	1761	6.4	15.00	0.0	
06/26/2022	22:00:32	1717	6.4	15.00	0.0	
06/26/2022	22:00:32	1736	6.4	15.00	0.0	
06/26/2022	22:00:32	1759	6.4	15.00	0.0	
06/26/2022	22:00:32	1709	6.4	15.00	0.0	
06/26/2022	22:00:32	1706	6.4	15.00	0.0	
06/26/2022	22:00:32	1722	6.4	15.00	0.0	
06/26/2022	22:00:32	1692	6.4	15.00	0.0	
06/26/2022	22:00:32	1722	6.4	15.00	0.0	
06/26/2022	22:00:32	1682	6.4	15.00	0.0	
06/26/2022	22:00:32	1727	6.4	15.00	0.0	
06/26/2022	22:00:32	1740	6.4	15.00	0.0	
06/26/2022	22:00:32	1709	6.4	15.00	0.0	
06/26/2022	22:00:32	1726	6.4	15.00	0.0	
06/26/2022	22:00:32	1706	6.4	15.00	0.0	
06/26/2022	22:00:32	1725	6.4	15.00	0.0	
06/26/2022	22:00:32	1717	6.4	15.00	0.0	
06/26/2022	22:00:32	1689	6.4	15.00	0.0	
06/26/2022	22:00:32	1720	6.4	15.00	0.0	
06/26/2022	22:00:32	1697	6.4	15.00	0.0	
06/26/2022	22:00:32	1682	6.4	15.00	0.0	
06/26/2022	22:00:32	1758	6.4	15.00	0.0	
06/26/2022	22:00:32	1720	6.4	15.00	0.0	
06/26/2022	22:00:32	1730	6.4	15.00	0.0	
06/26/2022	22:00:32	1761	6.4	15.00	0.0	

Well	Field	Job Start	Customer	Job Number
CHARLES JAMISON MSH 406H	MARSHALL COUNTY	Jun/26/2022	SWN	EOHC-01211

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	22:00:32	1756	6.4	15.00	0.0	
06/26/2022	22:00:32	1685	6.4	15.00	0.0	
06/26/2022	22:00:32	1727	6.4	15.00	0.0	
06/26/2022	22:00:32	1727	6.4	15.00	0.0	
06/26/2022	22:00:32	1671	6.4	15.00	0.0	
06/26/2022	22:00:32	1703	6.4	15.00	0.0	
06/26/2022	22:00:32	1705	6.4	15.00	0.0	
06/26/2022	22:00:32	1711	6.4	15.00	0.0	
06/26/2022	22:00:32	1735	6.4	15.01	0.0	
06/26/2022	22:00:32	1715	6.4	15.00	0.0	
06/26/2022	22:00:32	1782	6.4	15.01	0.0	
06/26/2022	22:00:32	1804	6.4	15.00	0.0	
06/26/2022	22:00:32	1720	6.4	15.01	0.0	
06/26/2022	22:00:32	1750	6.4	15.01	0.0	
06/26/2022	22:00:32	1729	6.4	15.01	0.0	
06/26/2022	22:00:32	1713	6.4	15.01	0.0	
06/26/2022	22:00:32	1716	6.4	15.01	0.0	
06/26/2022	22:00:32	1696	6.4	15.00	0.0	
06/26/2022	22:00:32	1739	6.4	15.01	0.0	
06/26/2022	22:00:32	1691	6.4	15.01	0.0	
06/26/2022	22:00:32	1711	6.4	15.01	0.0	
06/26/2022	22:00:32	1761	6.4	15.00	0.0	
06/26/2022	22:00:32	1724	6.4	15.01	0.0	
06/26/2022	22:00:32	1725	6.4	15.00	0.0	
06/26/2022	22:00:32	1745	6.4	15.01	0.0	
06/26/2022	22:00:32	1713	6.4	15.00	0.0	
06/26/2022	22:00:32	1729	6.4	15.00	0.0	
06/26/2022	22:00:32	1684	6.4	15.00	0.0	
06/26/2022	22:00:32	1706	6.4	15.01	0.0	
06/26/2022	22:00:32	1742	6.4	15.00	0.0	
06/26/2022	22:00:32	1696	6.4	15.00	0.0	
06/26/2022	22:00:32	1754	6.4	15.00	0.0	
06/26/2022	22:00:32	1723	6.4	15.00	0.0	
06/26/2022	22:32:32	22	0.0	8.42	0.0	
06/26/2022	22:32:32	22	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	22	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	19	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	19	0.0	8.42	0.0	

Well	Field	Job Start	Customer	Job Number
CHARLES JAMISON MSH 406H	MARSHALL COUNTY	Jun/26/2022	SWN	EOHC-01211

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	22:32:32	20	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	20	0.0	8.41	0.0	
06/26/2022	22:32:32	22	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	20	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	22	0.0	8.42	0.0	
06/26/2022	22:32:32	22	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	20	0.0	8.41	0.0	
06/26/2022	22:32:32	20	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	22	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	22	0.1	8.41	0.0	
06/26/2022	22:32:32	20	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	22	0.0	8.41	0.0	
06/26/2022	22:32:32	22	0.0	8.41	0.0	
06/26/2022	22:32:32	22	0.0	8.42	0.0	
06/26/2022	22:32:32	22	0.0	8.42	0.0	
06/26/2022	22:32:32	22	0.0	8.42	0.0	
06/26/2022	22:32:32	21	0.0	8.41	0.0	
06/26/2022	22:32:32	21	0.1	8.42	0.0	
06/26/2022	22:32:32	20	0.1	8.42	0.0	
06/26/2022	22:32:32	29	0.1	8.42	0.0	
06/26/2022	22:32:32	53	0.4	8.42	0.0	
06/26/2022	22:32:32	53	0.8	8.43	0.0	
06/26/2022	22:32:32	53	1.3	8.44	0.0	
06/26/2022	22:32:32	56	1.7	8.45	0.0	
06/26/2022	22:32:32	54	1.9	8.45	0.0	
06/26/2022	22:32:32	56	2.2	8.46	0.0	
06/26/2022	22:32:32	55	2.2	8.46	0.0	
06/26/2022	22:32:32	54	2.2	8.46	0.0	
06/26/2022	22:32:32	55	2.3	8.46	0.0	
06/26/2022	22:32:32	55	2.3	8.45	0.0	
06/26/2022	22:32:32	55	2.3	8.45	0.0	
06/26/2022	22:32:32	56	2.3	8.45	0.0	
06/26/2022	22:32:32	54	2.3	8.44	0.0	
06/26/2022	22:32:32	25	2.1	8.44	0.0	
06/26/2022	22:32:32	17	1.6	8.44	0.0	
06/26/2022	22:32:32	37	1.1	8.44	0.0	
06/26/2022	22:32:32	43	0.7	8.43	0.0	
06/26/2022	22:32:32	98	0.7	8.43	0.0	
06/26/2022	22:32:32	84	1.0	8.43	0.0	

Well	Field	Job Start	Customer	Job Number
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Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	22:32:32	181	1.7	8.43	0.0	
06/26/2022	22:32:32	465	1.9	8.42	0.0	
06/26/2022	22:32:32	511	1.8	8.42	0.0	
06/26/2022	22:32:32	521	1.6	8.42	0.0	
06/26/2022	22:32:32	555	1.3	8.41	0.0	
06/26/2022	22:32:32	559	1.1	8.41	0.0	
06/26/2022	22:32:32	554	1.0	8.41	0.0	
06/26/2022	22:32:32	531	0.9	8.41	0.0	
06/26/2022	22:32:32	505	0.7	8.41	0.0	
06/26/2022	22:32:32	707	0.6	8.41	0.0	
06/26/2022	22:32:32	678	0.9	8.41	0.0	
06/26/2022	22:32:32	836	1.2	8.40	0.0	
06/26/2022	22:32:32	948	1.6	8.40	0.0	
06/26/2022	22:32:32	1091	2.0	8.40	0.0	
06/26/2022	22:32:32	1186	2.5	8.40	0.0	
06/26/2022	22:32:32	1219	3.0	8.39	0.0	
06/26/2022	22:32:32	1268	3.5	8.39	0.0	
06/26/2022	22:32:32	1285	3.7	8.39	0.0	
06/26/2022	22:32:32	1326	3.9	8.38	0.0	
06/26/2022	22:32:32	1343	4.0	8.38	0.0	
06/26/2022	22:32:32	1392	4.1	8.38	0.0	
06/26/2022	22:32:32	1400	4.1	8.38	0.0	
06/26/2022	22:32:32	1492	4.2	8.38	0.0	
06/26/2022	22:32:32	1413	4.2	8.38	0.0	
06/26/2022	22:32:32	1345	4.0	8.38	0.0	
06/26/2022	22:32:32	1456	3.9	8.38	0.0	
06/26/2022	22:32:32	1467	4.1	8.38	0.0	
06/26/2022	22:32:32	1447	4.2	8.38	0.0	
06/26/2022	22:32:32	1492	4.3	8.38	0.0	
06/26/2022	22:32:32	1505	4.4	8.38	0.0	
06/26/2022	22:32:32	1514	4.4	8.38	0.0	
06/26/2022	22:32:32	1548	4.7	8.38	0.0	
06/26/2022	22:32:32	1516	4.8	8.38	0.0	
06/26/2022	22:32:32	1545	4.7	8.38	0.0	
06/26/2022	22:32:32	1573	4.7	8.38	0.0	
06/26/2022	22:32:32	1557	4.6	8.38	0.0	
06/26/2022	22:32:32	1586	4.6	8.38	0.0	
06/26/2022	22:32:32	1581	4.6	8.39	0.0	
06/26/2022	22:32:32	1581	4.6	8.39	0.0	
06/26/2022	22:32:32	1611	4.5	8.39	0.0	
06/26/2022	22:32:32	1604	4.5	8.39	0.0	
06/26/2022	22:32:32	1651	4.5	8.39	0.0	
06/26/2022	22:32:32	1687	4.5	8.39	0.0	
06/26/2022	22:32:32	1708	4.7	8.39	0.0	
06/26/2022	22:32:32	1968	4.9	8.39	0.0	
06/26/2022	22:32:32	2069	5.2	8.39	0.0	
06/26/2022	22:32:32	2168	5.8	8.39	0.0	
06/26/2022	22:32:32	2394	6.5	8.39	0.0	
06/26/2022	23:04:32	4078	7.6	8.39	0.0	
06/26/2022	23:04:32	4109	7.7	8.39	0.0	
06/26/2022	23:04:32	4095	7.7	8.39	0.0	
06/26/2022	23:04:32	4146	7.7	8.39	0.0	
06/26/2022	23:04:32	4121	7.6	8.39	0.0	
06/26/2022	23:04:32	4095	7.6	8.39	0.0	

Well	Field	Job Start	Customer	Job Number
CHARLES JAMISON MSH 406H	MARSHALL COUNTY	Jun/26/2022	SWN	EOHC-01211

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	23:04:32	4076	7.6	8.39	0.0	
06/26/2022	23:04:32	4086	7.6	8.39	0.0	
06/26/2022	23:04:32	4099	7.6	8.39	0.0	
06/26/2022	23:04:32	4055	7.7	8.39	0.0	
06/26/2022	23:04:32	4064	7.7	8.39	0.0	
06/26/2022	23:04:32	4055	7.6	8.39	0.0	
06/26/2022	23:04:32	4072	7.6	8.39	0.0	
06/26/2022	23:04:32	4089	7.6	8.39	0.0	
06/26/2022	23:04:32	4147	7.7	8.39	0.0	
06/26/2022	23:04:32	4170	7.6	8.39	0.0	
06/26/2022	23:04:32	4123	7.6	8.39	0.0	
06/26/2022	23:04:32	4115	7.6	8.39	0.0	
06/26/2022	23:04:32	4119	7.6	8.39	0.0	
06/26/2022	23:04:32	4091	7.6	8.39	0.0	
06/26/2022	23:04:32	4087	7.6	8.39	0.0	
06/26/2022	23:04:32	4066	7.6	8.39	0.0	
06/26/2022	23:04:32	4060	7.7	8.39	0.0	
06/26/2022	23:04:32	4093	7.7	8.39	0.0	
06/26/2022	23:04:32	4047	7.6	8.39	0.0	
06/26/2022	23:04:32	4121	7.7	8.39	0.0	
06/26/2022	23:04:32	4137	7.7	8.39	0.0	
06/26/2022	23:04:32	4148	7.6	8.39	0.0	
06/26/2022	23:04:32	4129	7.6	8.39	0.0	
06/26/2022	23:04:32	4081	7.6	8.39	0.0	
06/26/2022	23:04:32	4080	7.7	8.39	0.0	
06/26/2022	23:04:32	4077	7.7	8.39	0.0	
06/26/2022	23:04:32	4063	7.7	8.39	0.0	
06/26/2022	23:04:32	4064	7.6	8.39	0.0	
06/26/2022	23:04:32	4057	7.7	8.39	0.0	
06/26/2022	23:04:32	4058	7.7	8.39	0.0	
06/26/2022	23:04:32	4088	7.6	8.39	0.0	
06/26/2022	23:04:32	4073	7.6	8.39	0.0	
06/26/2022	23:04:32	4097	7.7	8.39	0.0	
06/26/2022	23:04:32	4042	7.6	8.39	0.0	
06/26/2022	23:04:32	4051	7.7	8.39	0.0	
06/26/2022	23:04:32	4076	7.7	8.39	0.0	
06/26/2022	23:04:32	4067	7.7	8.39	0.0	
06/26/2022	23:04:32	4097	7.7	8.39	0.0	
06/26/2022	23:04:32	4122	7.6	8.39	0.0	
06/26/2022	23:04:32	4128	7.6	8.39	0.0	
06/26/2022	23:04:32	4137	7.6	8.39	0.0	
06/26/2022	23:04:32	4090	7.6	8.39	0.0	
06/26/2022	23:04:32	4094	7.7	8.39	0.0	
06/26/2022	23:04:32	4096	7.7	8.39	0.0	
06/26/2022	23:04:32	4060	7.6	8.39	0.0	
06/26/2022	23:04:32	4102	7.7	8.39	0.0	
06/26/2022	23:04:32	4083	7.7	8.39	0.0	
06/26/2022	23:04:32	4103	7.7	8.39	0.0	
06/26/2022	23:04:32	4137	7.6	8.39	0.0	
06/26/2022	23:04:32	4125	7.6	8.39	0.0	
06/26/2022	23:04:32	4111	7.6	8.39	0.0	
06/26/2022	23:04:32	4091	7.6	8.39	0.0	
06/26/2022	23:04:32	4084	7.7	8.39	0.0	
06/26/2022	23:04:32	4078	7.6	8.39	0.0	

Well	Field	Job Start	Customer	Job Number
CHARLES JAMISON MSH 406H	MARSHALL COUNTY	Jun/26/2022	SWN	EOHC-01211

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	23:04:32	4052	7.7	8.39	0.0	
06/26/2022	23:04:32	4061	7.6	8.39	0.0	
06/26/2022	23:04:32	4041	7.6	8.39	0.0	
06/26/2022	23:04:32	4070	7.6	8.39	0.0	
06/26/2022	23:04:32	4099	7.6	8.39	0.0	
06/26/2022	23:04:32	4143	7.6	8.39	0.0	
06/26/2022	23:04:32	4159	7.6	8.39	0.0	
06/26/2022	23:04:32	4081	7.6	8.39	0.0	
06/26/2022	23:04:32	4073	7.6	8.39	0.0	
06/26/2022	23:04:32	4052	7.7	8.39	0.0	
06/26/2022	23:04:32	4069	7.7	8.39	0.0	
06/26/2022	23:04:32	4089	7.6	8.39	0.0	
06/26/2022	23:04:32	4071	7.7	8.39	0.0	
06/26/2022	23:04:32	4090	7.6	8.39	0.0	
06/26/2022	23:04:32	4102	7.6	8.39	0.0	
06/26/2022	23:04:32	4095	7.6	8.39	0.0	
06/26/2022	23:04:32	4111	7.7	8.39	0.0	
06/26/2022	23:04:32	4116	7.6	8.39	0.0	
06/26/2022	23:04:32	4138	7.6	8.39	0.0	
06/26/2022	23:04:32	4128	7.6	8.39	0.0	
06/26/2022	23:04:32	4083	7.6	8.39	0.0	
06/26/2022	23:04:32	4108	7.6	8.39	0.0	
06/26/2022	23:04:32	4073	7.6	8.39	0.0	
06/26/2022	23:04:32	4107	7.7	8.39	0.0	
06/26/2022	23:04:32	4095	7.6	8.39	0.0	
06/26/2022	23:04:32	4064	7.7	8.39	0.0	
06/26/2022	23:04:32	4094	7.6	8.39	0.0	
06/26/2022	23:04:32	4120	7.6	8.39	0.0	
06/26/2022	23:04:32	4130	7.6	8.39	0.0	
06/26/2022	23:04:32	4116	7.6	8.39	0.0	
06/26/2022	23:04:32	4083	7.6	8.39	0.0	
06/26/2022	23:04:32	4082	7.6	8.39	0.0	
06/26/2022	23:04:32	4083	7.6	8.39	0.0	
06/26/2022	23:04:32	4062	7.7	8.39	0.0	
06/26/2022	23:04:32	4093	7.6	8.39	0.0	
06/26/2022	23:04:32	4097	7.6	8.39	0.0	
06/26/2022	23:04:32	4088	7.6	8.39	0.0	
06/26/2022	23:04:32	4058	7.6	8.39	0.0	
06/26/2022	23:04:32	4038	7.6	8.39	0.0	
06/26/2022	23:04:32	4065	7.6	8.39	0.0	
06/26/2022	23:04:32	4073	7.7	8.39	0.0	
06/26/2022	23:04:32	4103	7.7	8.39	0.0	
06/26/2022	23:04:32	4131	7.6	8.39	0.0	
06/26/2022	23:04:32	4119	7.6	8.39	0.0	
06/26/2022	23:04:32	4123	7.6	8.39	0.0	
06/26/2022	23:04:32	4104	7.6	8.39	0.0	
06/26/2022	23:04:32	4066	7.6	8.39	0.0	
06/26/2022	23:04:32	4082	7.6	8.39	0.0	
06/26/2022	23:04:32	4063	7.6	8.39	0.0	
06/26/2022	23:04:32	4072	7.6	8.39	0.0	
06/26/2022	23:04:32	4100	7.6	8.39	0.0	
06/26/2022	23:04:32	4123	7.6	8.39	0.0	
06/26/2022	23:04:32	4137	7.6	8.39	0.0	
06/26/2022	23:04:32	4114	7.6	8.39	0.0	

Well	Field	Job Start	Customer	Job Number
CHARLES JAMISON MSH 406H	MARSHALL COUNTY	Jun/26/2022	SWN	EOHC-01211

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	23:04:32	4091	7.6	8.39	0.0	
06/26/2022	23:04:32	4064	7.6	8.39	0.0	
06/26/2022	23:04:32	4074	7.6	8.39	0.0	
06/26/2022	23:04:32	4067	7.6	8.39	0.0	
06/26/2022	23:04:32	4036	7.7	8.39	0.0	
06/26/2022	23:04:32	4048	7.6	8.39	0.0	
06/26/2022	23:04:32	4054	7.6	8.39	0.0	
06/26/2022	23:04:32	4078	7.6	8.39	0.0	
06/26/2022	23:04:32	4084	7.6	8.39	0.0	
06/26/2022	23:04:32	4075	7.6	8.39	0.0	
06/26/2022	23:36:32	4039	7.7	8.39	0.0	
06/26/2022	23:36:32	4008	7.7	8.39	0.0	
06/26/2022	23:36:32	4009	7.7	8.39	0.0	
06/26/2022	23:36:32	4007	7.7	8.39	0.0	
06/26/2022	23:36:32	3954	7.7	8.39	0.0	
06/26/2022	23:36:32	4032	7.7	8.39	0.0	
06/26/2022	23:36:32	4019	7.7	8.39	0.0	
06/26/2022	23:36:32	4028	7.6	8.39	0.0	
06/26/2022	23:36:32	4023	7.7	8.39	0.0	
06/26/2022	23:36:32	3995	7.7	8.39	0.0	
06/26/2022	23:36:32	4031	7.7	8.39	0.0	
06/26/2022	23:36:32	4009	7.6	8.39	0.0	
06/26/2022	23:36:32	3967	7.7	8.39	0.0	
06/26/2022	23:36:32	3993	7.7	8.39	0.0	
06/26/2022	23:36:32	3978	7.7	8.39	0.0	
06/26/2022	23:36:32	3968	7.6	8.39	0.0	
06/26/2022	23:36:32	3980	7.6	8.39	0.0	
06/26/2022	23:36:32	3972	7.7	8.39	0.0	
06/26/2022	23:36:32	4037	7.7	8.39	0.0	
06/26/2022	23:36:32	3987	7.7	8.39	0.0	
06/26/2022	23:36:32	4003	7.7	8.39	0.0	
06/26/2022	23:36:32	4033	7.7	8.39	0.0	
06/26/2022	23:36:32	3973	7.7	8.39	0.0	
06/26/2022	23:36:32	4005	7.7	8.39	0.0	
06/26/2022	23:36:32	4006	7.7	8.39	0.0	
06/26/2022	23:36:32	3997	7.7	8.39	0.0	
06/26/2022	23:36:32	4024	7.7	8.39	0.0	
06/26/2022	23:36:32	3994	7.6	8.39	0.0	
06/26/2022	23:36:32	4009	7.7	8.39	0.0	
06/26/2022	23:36:32	4062	7.7	8.39	0.0	
06/26/2022	23:36:32	4003	7.7	8.39	0.0	
06/26/2022	23:36:32	4034	7.7	8.39	0.0	
06/26/2022	23:36:32	4033	7.7	8.39	0.0	
06/26/2022	23:36:32	4054	7.6	8.39	0.0	
06/26/2022	23:36:32	4019	7.7	8.39	0.0	
06/26/2022	23:36:32	3999	7.7	8.39	0.0	
06/26/2022	23:36:32	4042	7.7	8.39	0.0	
06/26/2022	23:36:32	4016	7.7	8.39	0.0	
06/26/2022	23:36:32	3985	7.7	8.39	0.0	
06/26/2022	23:36:32	3994	7.7	8.39	0.0	
06/26/2022	23:36:32	3977	7.7	8.39	0.0	
06/26/2022	23:36:32	4006	7.7	8.39	0.0	
06/26/2022	23:36:32	4005	7.7	8.39	0.0	
06/26/2022	23:36:32	3970	7.7	8.39	0.0	

Well	Field	Job Start	Customer	Job Number
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Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	23:36:32	4024	7.6	8.39	0.0	
06/26/2022	23:36:32	3996	7.7	8.39	0.0	
06/26/2022	23:36:32	4023	7.7	8.39	0.0	
06/26/2022	23:36:32	3972	7.6	8.39	0.0	
06/26/2022	23:36:32	3996	7.6	8.39	0.0	
06/26/2022	23:36:32	3975	7.7	8.39	0.0	
06/26/2022	23:36:32	3959	7.7	8.39	0.0	
06/26/2022	23:36:32	3997	7.7	8.39	0.0	
06/26/2022	23:36:32	3986	7.7	8.39	0.0	
06/26/2022	23:36:32	4030	7.7	8.39	0.0	
06/26/2022	23:36:32	4044	7.7	8.39	0.0	
06/26/2022	23:36:32	4019	7.6	8.39	0.0	
06/26/2022	23:36:32	4052	7.7	8.39	0.0	
06/26/2022	23:36:32	4028	7.7	8.39	0.0	
06/26/2022	23:36:32	3993	7.7	8.39	0.0	
06/26/2022	23:36:32	4009	7.7	8.39	0.0	
06/26/2022	23:36:32	3976	7.7	8.39	0.0	
06/26/2022	23:36:32	3988	7.7	8.39	0.0	
06/26/2022	23:36:32	4012	7.7	8.39	0.0	
06/26/2022	23:36:32	3964	7.7	8.39	0.0	
06/26/2022	23:36:32	4029	7.7	8.39	0.0	
06/26/2022	23:36:32	4006	7.7	8.39	0.0	
06/26/2022	23:36:32	4027	7.7	8.39	0.0	
06/26/2022	23:36:32	4036	7.6	8.39	0.0	
06/26/2022	23:36:32	3993	7.6	8.39	0.0	
06/26/2022	23:36:32	4004	7.7	8.39	0.0	
06/26/2022	23:36:32	3990	7.7	8.39	0.0	
06/26/2022	23:36:32	3971	7.7	8.39	0.0	
06/26/2022	23:36:32	3976	7.7	8.39	0.0	
06/26/2022	23:36:32	3959	7.7	8.39	0.0	
06/26/2022	23:36:32	3996	7.6	8.39	0.0	
06/26/2022	23:36:32	4030	7.6	8.39	0.0	
06/26/2022	23:36:32	4012	7.6	8.39	0.0	
06/26/2022	23:36:32	4006	7.6	8.39	0.0	
06/26/2022	23:36:32	3974	7.6	8.39	0.0	
06/26/2022	23:36:32	4008	7.6	8.39	0.0	
06/26/2022	23:36:32	4015	7.6	8.39	0.0	
06/26/2022	23:36:32	3976	7.6	8.39	0.0	
06/26/2022	23:36:32	4020	7.6	8.39	0.0	
06/26/2022	23:36:32	4012	7.7	8.39	0.0	
06/26/2022	23:36:32	4011	7.6	8.39	0.0	
06/26/2022	23:36:32	4016	7.7	8.39	0.0	
06/26/2022	23:36:32	3988	7.7	8.39	0.0	
06/26/2022	23:36:32	4029	7.7	8.39	0.0	
06/26/2022	23:36:32	4036	7.7	8.39	0.0	
06/26/2022	23:36:32	3989	7.7	8.39	0.0	
06/26/2022	23:36:32	4024	7.7	8.39	0.0	
06/26/2022	23:36:32	4016	7.6	8.39	0.0	
06/26/2022	23:36:32	3985	7.6	8.39	0.0	
06/26/2022	23:36:32	3987	7.6	8.39	0.0	
06/26/2022	23:36:32	3993	7.7	8.39	0.0	
06/26/2022	23:36:32	4012	7.7	8.39	0.0	
06/26/2022	23:36:32	3978	7.7	8.39	0.0	
06/26/2022	23:36:32	3986	7.6	8.39	0.0	

Well	Field	Job Start	Customer	Job Number
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Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/26/2022	23:36:32	3976	7.6	8.39	0.0	
06/26/2022	23:36:32	4005	7.6	8.39	0.0	
06/26/2022	23:36:32	4015	7.6	8.39	0.0	
06/26/2022	23:36:32	3983	7.7	8.39	0.0	
06/26/2022	23:36:32	4022	7.7	8.39	0.0	
06/26/2022	23:36:32	4007	7.7	8.39	0.0	
06/26/2022	23:36:32	4004	7.7	8.39	0.0	
06/26/2022	23:36:32	4022	7.7	8.39	0.0	
06/26/2022	23:36:32	3968	7.7	8.39	0.0	
06/26/2022	23:36:32	3990	7.7	8.39	0.0	
06/26/2022	23:36:32	3979	7.7	8.39	0.0	
06/26/2022	23:36:32	4014	7.7	8.39	0.0	
06/26/2022	23:36:32	4034	7.7	8.39	0.0	
06/26/2022	23:36:32	4005	7.6	8.39	0.0	
06/26/2022	23:36:32	4042	7.7	8.39	0.0	
06/26/2022	23:36:32	4043	7.7	8.39	0.0	
06/26/2022	23:36:32	3997	7.7	8.39	0.0	
06/26/2022	23:36:32	4014	7.7	8.39	0.0	
06/26/2022	23:36:32	3982	7.7	8.39	0.0	
06/26/2022	23:36:32	3994	7.7	8.39	0.0	
06/26/2022	23:36:32	4006	7.7	8.39	0.0	
06/26/2022	23:36:32	3970	7.7	8.39	0.0	
06/26/2022	23:36:32	4006	7.7	8.39	0.0	
06/26/2022	23:36:32	4020	7.7	8.39	0.0	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
			13.7	1010.0	0.0	150.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
8500	38		3750			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
0.0 %	952.0 bbl	505.0 bbl	70 degF	Cement Circulated to Surface? ☐	Volume bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor		
	MATTHEW MORRIS	Circulation Lost ☐	Job Completed ☒
		-	-

11/10/2016 PLUGGING PERMIT CHECKLIST

Plugging Permit

- [x] WW-4B
- [ ] WW-4B signed by inspector
- [x] WW-4A
- [x] SURFACE OWNER WAIVER or PROOF THAT APPLICATION WAS SENT BY REGISTERED OR CERITFIED MAIL
- [x] COAL OWNER/COAL OPERATOR/COAL LESSEE WAIVERS or PROOF THAT APPLICATION WAS SENT BY REGISTERED OR CERTIFIED MAIL
- [x] WW-9 PAGE 1 (NOTARIZED)
- [x] WW-9 PAGE 2 with attached drawing of road, location, pit and proposed area for land application
- [ ] WW-9 GPP PAGE 1 and 2 if well effluent will be land applied
- [x] RECENT MYLAR PLAT OR WW-7
- [x] WELL RECORDS/COMPLETION REPORT
- [x] TOPOGRAPHIC MAP OF WELL, SHOWING PIT IF PIT IS USED
- [x] MUST HAVE VALID BOND IN OPERATOR'S NAME
- [ ] CHECK FOR $100 IF PIT IS USED

WW-4A
Revised 6-07

1) Date: 7/7/2022
2) Operator's Well Number
21017

3) API Well No.: 47 - 023 - 00031

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE 0F APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:
(a) Name: UPPER POTOMAC, LLC
Address: PO BOX 14
ELK GARDEN, WV 26717
(b) Name:
Address:
(c) Name:
Address:

6) Inspector: GAYNE J KNITOWSKI
Address: 601 57TH STREET SE
CHARLESTON WV 25304
Telephone: 304-546-8171

5) (a) Coal Operator
Name:
Address:

(b) Coal Owner(s) with Declaration
Name: UPPER POTOMAC, LLC
Address: PO BOX 14
ELK GARDEN, WV 26717
Name:
Address:

(c) Coal Lessee with Declaration
Name:
Address:

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

(1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
(2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator: CHESAPEAKE APPALACHIA LLC
By: KERI FIENO
Its: REGULATORY SPECIALIST
Address: PO BOX 18496
OKLAHOMA CITY, OK 73154-0496
Telephone: 405-935-1154

Subscribed and sworn before me this _____ day of _____

_____ Notary Public

My Commission Expires _____

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyoffier@wv.gov.

WW-4B
Rev. 2/01

1) Date July 7, 2022
2) Operator's
Well No. LUCY C HIPP 1
3) API Well No. 47- 23 - 00031

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil _____/ Gas X____/ Liquid injection _____/ Waste disposal _____/
(If "Gas, Production ____ or Underground storage ____) Deep ____/ Shallow____

5) Location: Elevation 3251.46' Watershed ABRAM CREEK
District UNION County GRANT Quadrangle GREENLAND GAP

6) Well Operator CHESAPEAKE APPALACHIA LLC
Address PO BOX 18496
OKLAHOMA CITY, OK 73154-0496

7) Designated Agent ERIC HASKINS - MANAGER REG OPS
Address 14 CHESAPEAKE LANE
SAYRE, PA 18840

8) Oil and Gas Inspector to be notified
Name GAYNE J KNITOWSKI
Address 601 57TH STREET SE
CHARLESTON, WV 25304

9) Plugging Contractor
Name PLANTS AND GOODWIN
Address 360 HIGH STREET
BRADFORD, PA 16701

10) Work Order: The work order for the manner of plugging this well is as follows:

SEE ATTACHED

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector _____ Date _____

Lucy C Hipp 1

Grant County, WV
Lat. 39.24169; Long. -79.18652
API: 4702300031

Plug and Abandonment Procedure
PN: 821017
AFE: TBD
WO: TBD

EXECUTIVE SUMMARY

The Lucy C Hipp 1 well in Grant County, West Virginia will be plugged and abandoned. Chesapeake has agreed to P&A this well in accordance to the request of the WVDEP. No future potential remains in this wellbore.

Operational Summary:
The Lucy C Hipp 1 well was drilled & completed in 1994. The P&A will consist of pulling 2-3/8" tubing and a CIBP will be set above the top perf. A cement plug will be set in the 5-1/2" casing above the CIBP. A CBL will be run to find TOC behind 5-1/2" casing and cut pipe 100' above and pull same. All free pipe should attempt to be pulled 1-1.5x string weight. A caliper log will be run on open hole section to determine open hole size then a CBL will be run on 9 5/8" casing to verify TOC behind 9 5/8" casing. A cement plug will be set in the open hole portion and across 9-5/8" shoe. There will be a final cement plug set at surface after ensuring no annular gas exists.

CASING AND TUBULAR DATA

RKB	Variable
KOP	N/A
Depth of Top Perf (MD)	9,916'
Cement Yield	1.18 cu.ft/sk
Density	15.6 ppg

Casing Detail										
String	OD (in)	ID (in)	Weight (lbs/ft)	Grade	Casing Cap (bbl/ft)	Annular Cap (bbl/ft)	Top (ft-MD)	Bttm (ft-MD)	TOC	Hole Size
Conductor	16					N/A				N/A
Surface	13.325	12.5	54.5	H-40	0.1527	N/A	0	601	0	17.5
Intermediate	9.625	8.835	40	J-55	0.0758	N/A	0	3,240	0	12.25
Production	5.5	4.892	17	N-80	0.0232	0.045	0	10,159	9,200	8.75

Plug and Abandonment Procedure

Tubing Design					
Item/No	OD (in)	ID (in)	Description	Length (ft)	Depth (ft-MD)
2-3/8" Tubing	2.375	1.995	Records show N-80 Tubing	10,040.0	10,040

Cement Summary

Estimated Plug Set Depths and Cement Needed								
Item	Plug Height	Top of Plug	Bottom of Plug	Cement Type	% Excess Cmt	Cement Sacks	Gel Volume (BBL)	Displacement Volume (BBL)
Plug 1	180'	9,570'	9,750'	Class H	0%	20	0	37.1
Plug 2	500'	8,700'	9,200'	Class H	20%	213	399	33.9
Plug 3	200'	3,140'	3,340'	Class A	20%	87	182	12
Plug 4	200'	501'	701'	Class A	0%	72	0	1.9

Plugging Details					
Plug #	Depth Code	Depth	Csg or Open Hole?	Peforate?	Cmt Behind Csg
Plug 1	CIBP	9,750'	Csg	N/A	Yes
Plug 2	5-1/2" Casing Plug	9,750'	Csg	N/A	Yes
Plug 3	5.5" Stub Plug	9,200'	Open Hole	N/A	No
Plug 4	9-5/8" Casing Plug	3,340'	Csg	N/A	Yes
Plug 5	9-5/8" Surface Plug	701'	Csg	N/A	Yes

***All volumes assume 2-3/8" tubing is used**
****All volumes assume 1.18ft^3/sack of cement yield**

ABANDONMENT PROCEDURE

1. All personnel on site are required to have gas monitors at all times during this operation.

2. **Safety is the highest priority**. Hold PJSA meetings each morning and prior to all significant operations. Review critical parameters, objectives and emergency action plans.

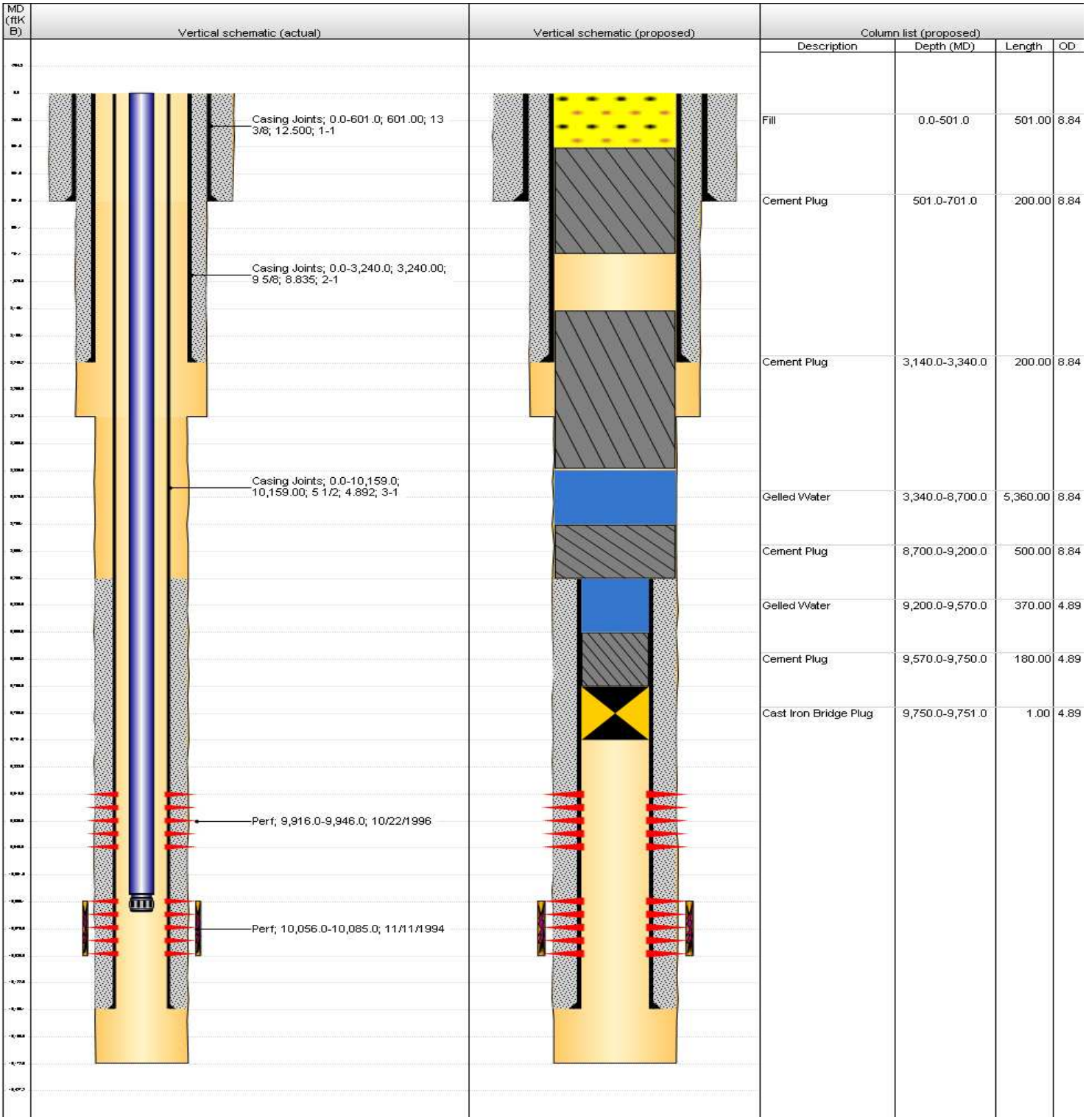
3. Prior to rig arriving on site:

    a. Make sure all casing valves are readily accessible and suck down water from the cellar.
    b. Perform 72-hour pressure build up test on all annuli. (done)
    c. Make sure A, B, and C section flanges are properly identified.
    d. Verify regulatory permit and approval to plug and abandon.
    e. Notify WVDEP, municipality and Landowner 1 week prior to commencing operations.

4. MIRU on containment
5. Kill well w/ 230bbl FW
6. Plug #1 (CIBP) RU wireline with 5k lubricator stack. Set CIBP @ 9,750'
7. ND well head & NU 5K double ram BOP
8. TIH with 2-3/8" EUE work string and tag CIBP.
9. Plug #2 (Bottom Hole Plug) Pump balanced cement plug on top of CIBP from 9,750' – 9,570' with Class H neat slurry (4.2bbl, 20sks). Displace with 37.1 bbl fresh water. POOH/WOC. Monitor pressure build on 5-1/2" casing.
10. RU wireline. Tag Plug #2 at ~9,570.' Run CBL on 5-1/2" casing to find TOC behind pipe (est. 9,200'). RU jet cutter and cut 5-1/2" casing at ~9,200.'
11. NU annular BOP. RU 5-1/2" casing spear and handling tools. Spear production casing. Pull up to 10% over string weight (172,000lb.). If casing does not come free, consult CHK engineer and WVDEP on higher cut.
12. Plug #3 (5-1/2" Casing Stub Plug) TIH with tubing to 5 ½" stub at ~9,200.' Pump 12.9 bbls of gel spacer followed by Class H neat slurry from 9,200' – 8,700' w/ 20% excess (44.7bbl, 213sks). Displace with 21 bbl of gel followed by 12.9 bbl FW. POOH/WOC. Monitor pressure build on 9-5/8" casing.
13. RU wireline, Tag Plug #3 at ~8,700.' Run CBL on 9 5/8" casing to verify TOC is at surface. Be prepared to jet cut 9 5/8" if un-cemented pipe exists or to perforate 9 5/8" casing. NOTE: 9 5/8" casing cannot be perforated above the 13 3/8" casing shoe at 601'. Discuss any annular gas with CHK engineer before cutting 9 5/8" or perforating. If no annular gas issues, proceed to step 11.
14. Plug #4 (9-5/8" Casing Shoe Plug) TIH with tubing to 3,340' and pump 173 bbls of gel water followed by Class A neat slurry from 3,340' – 3,140' w/ 20% excess (18.3bbl, 87sks). Displace cement with 9.3 bbls of gel followed by 2.7 bbl FW. POOH/WOC. Monitor any pressure build on 13-3/8" casing.
15. Plug #5 (13-3/8" Casing Shoe Plug) TIH with tubing to Plug #4 at ~3,140.' Pull up to 701' and pump Class A neat slurry from 701' – 501' (15.1bbl, 72sks). Displace with 1.9 bbl fresh water. WOC.
16. Tag Plug #5 at ~501.' RDMO.
17. Top hole well with crushed limestone to surface. Cut, cap, and bury below grade.

ATTACHMENTS

- Current Well Bore Diagram Schematic
- Proposed Plugged Well Bore Diagram Schematic



Column list (proposed)

Description	Depth (MD)	Length	OD
Fill	0.0-501.0	501.00	8.84
Cement Plug	501.0-701.0	200.00	8.84
Cement Plug	3,140.0-3,340.0	200.00	8.84
Gelled Water	3,340.0-8,700.0	5,360.00	8.84
Cement Plug	8,700.0-9,200.0	500.00	8.84
Gelled Water	9,200.0-9,570.0	370.00	4.89
Cement Plug	9,570.0-9,750.0	180.00	4.89
Cast Iron Bridge Plug	9,750.0-9,751.0	1.00	4.89

PERSONNEL / PHONE LIST

Title	Name	Office	Mobile
Production Superintendent	Chris Sprute	-	(318)-771-2769
Production Manager	John Van Gels	(405)-766-8012	(636)-448-1104
Production Supervisor	Keeley Bergman	(405)-766-8438	(918)-991-5520
Production Engineer	Rachel Greening	(405) 935-2202	(817) 357-2288
Support Production Engineer	Brent Antolik	(405)-400-7461	(570)-592-1589

SURFACE OWNER WAIVER

Operator's Well Number LUCY C HIPP 1 21017

INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW4-A

The well operator named on page WW-4A is applying for a permit from the State to plug and abandon a well. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.

WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

Time Limits and methods for filing comments. The law requires these materials to be served on or before the date the operator files his Application. You have **FIVE (5) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Comments must be in writing. Your comments must include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

The Chief has the power to deny or condition a well work permit based on comments on the following grounds:

1) The proposed well work will constitute a hazard to the safety of persons.
2) The soil erosion and sediment control plan is not adequate or effective;
3) Damage would occur to publicly owned lands or resources;
4) The proposed well work fails to protect fresh water sources or supplies;
5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation…".

If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.

VOLUNTARY STATEMENT OF NO OBJECTION

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application For A Permit To Plug And Abandon on Forms WW-4A and WW-4B, and a survey plat.

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

FOR EXECUTION BY A NATURAL PERSON ETC.

_____ Date _____
Signature

FOR EXECUTION BY A CORPORATION,

Name _____
By _____
Its _____ Date _____

Signature Date

WW-9
(5/16)

API Number 47 - 023 - 00020
Operator's Well No. 21017

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name CHESAPEAKE APPALACHIA LLC OP Code 2528

Watershed (HUC 10) ABRAM CREEK Quadrangle GREENLAND GAP

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ☑ No ☐

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste: _____

Will a synthetic liner be used in the pit? Yes ☐ No ☐ If so, what ml.?_____

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application (if selected provide a completed form WW-9-GPP)
_____ Underground Injection (UIC Permit Number_____)
_____ Reuse (at API Number_____)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
_____ Other (Explain_____

Will closed loop system be used? If so, describe: DRILL CUTTINS WILL BE CIRCULATED BACK INTO AN OPEN TANK

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. FRESH WATER

-If oil based, what type? Synthetic, petroleum, etc. N/A

Additives to be used in drilling medium? NONE

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. LANDFILL

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) SAWDUST AND CITRIC ACID

-Landfill or offsite name/permit number? KIMBLE SANITARY LANDFILL OR MUD MASTERS

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature_____

Company Official (Typed Name) KERI FIENO

Company Official Title REGULATORY SPECIALIST

Subscribed and sworn before me this_____ day of_____, 20_____

_____ Notary Public

My commission expires_____

Form WW-9

Operator's Well No. 21017

Proposed Revegetation Treatment: Acres Disturbed 10 Prevegetation pH _____

Lime 3.90 Tons/acre or to correct to pH 7

Fertilizer type 8-16-16

Fertilizer amount 968 lbs/acre

Mulch 3 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
OATS/ANNUAL RYE	40LBS/ACRE	BIRDSFOOT TREFOIL	8LBS/ACRE
HAY/STRAW MULCH 3 TONS/ACRE		TALL FESCUE	40LBS/ACRE

Attach:
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

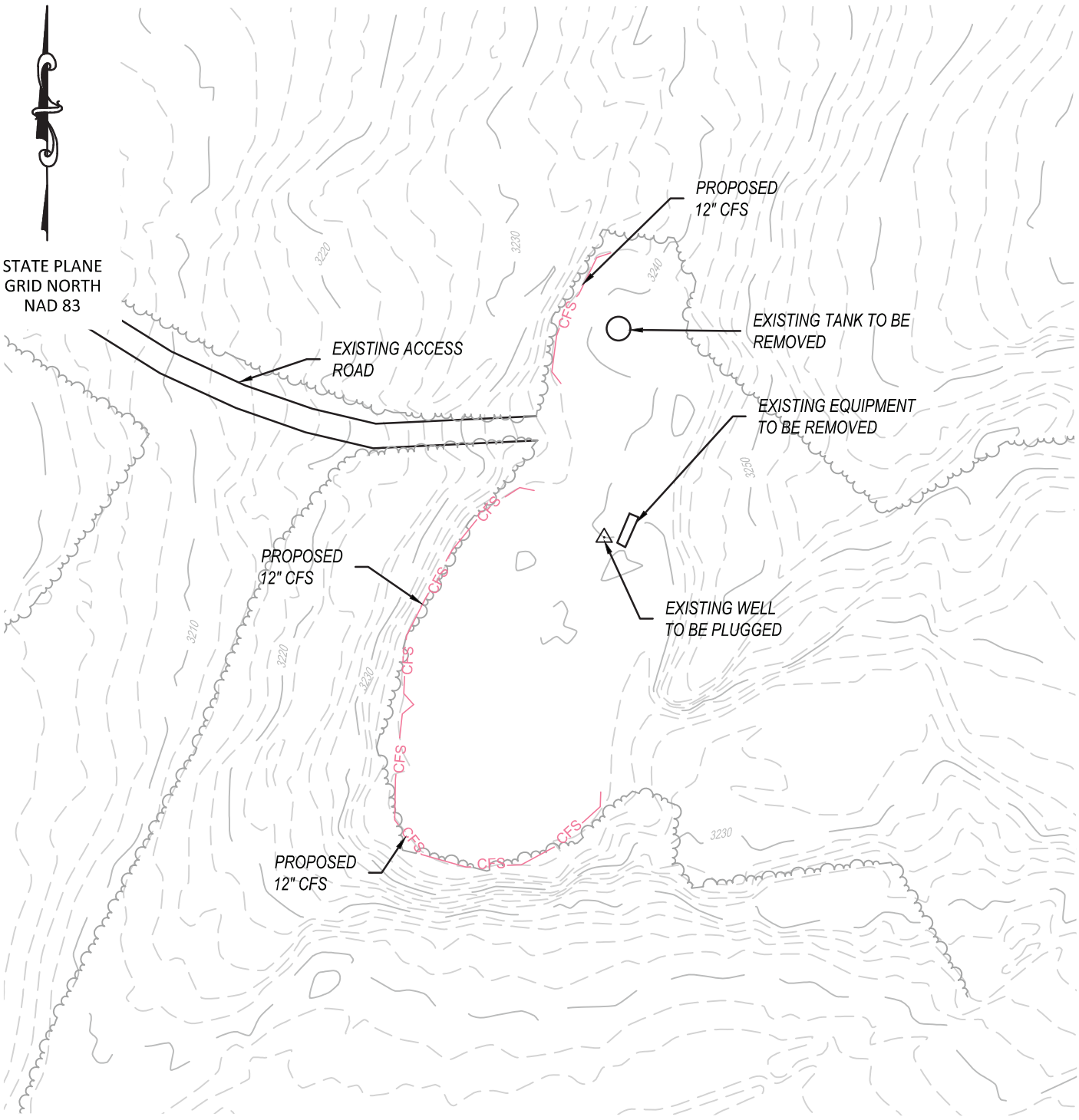
Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: _____

Comments: _____

Title: _____ Date: _____

Field Reviewed? (_____) Yes (_____) No



NOTE: ALL PRODUCTION FACILITIES WILL BE REMOVED UPON COMPLETION OF THE PLUGGING OPERATIONS.

LUCY C HIPP 1
SITE RECLAMATION
API# 47-023-00031

FOR

CHESAPEAKE ENERGY

LOCATED IN

GRANT COUNTY, WEST VIRGINIA

SITE PLAN

PLAN STATUS	DATE	NO.
FINAL	02/08/2022	1

LEGEND

- EXISTING CONTOUR — 1500
- EXISTING TREE LINE
- EXISTING ACCESS ROAD EDGE
- WELLHEAD
- COMPOSITE FILTER SOCK — CFS

JHA Companies
ENGINEERS
SURVEYORS
ENVIRONMENTAL
GIS MAPPING
www.jhacompanies.com
844-542-4757
466 SOUTH MAIN STREET
MONTROSE, PA 18801
PA • OH • NY • WV • VA • MD

WW-7
8-30-06

West Virginia Department of Environmental Protection
Office of Oil and Gas
WELL LOCATION FORM: GPS

API: 47-023-00031 **WELL NO.:** 21017

FARM NAME: LUCY C HIPP 1

RESPONSIBLE PARTY NAME: CHESAPEAKE APPALACHIA LLC

COUNTY: GRANT **DISTRICT:** UNION

QUADRANGLE: GREENLAND GAP

SURFACE OWNER: UPPER POTOMAC, LLC

ROYALTY OWNER: UPPER POTAMAC, LLC

UTM GPS NORTHING: 39.24169

UTM GPS EASTING: -79.18652 **GPS ELEVATION:** 3451.46'

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:

Survey grade GPS X: Post Processed Differential X

Real-Time Differential _____

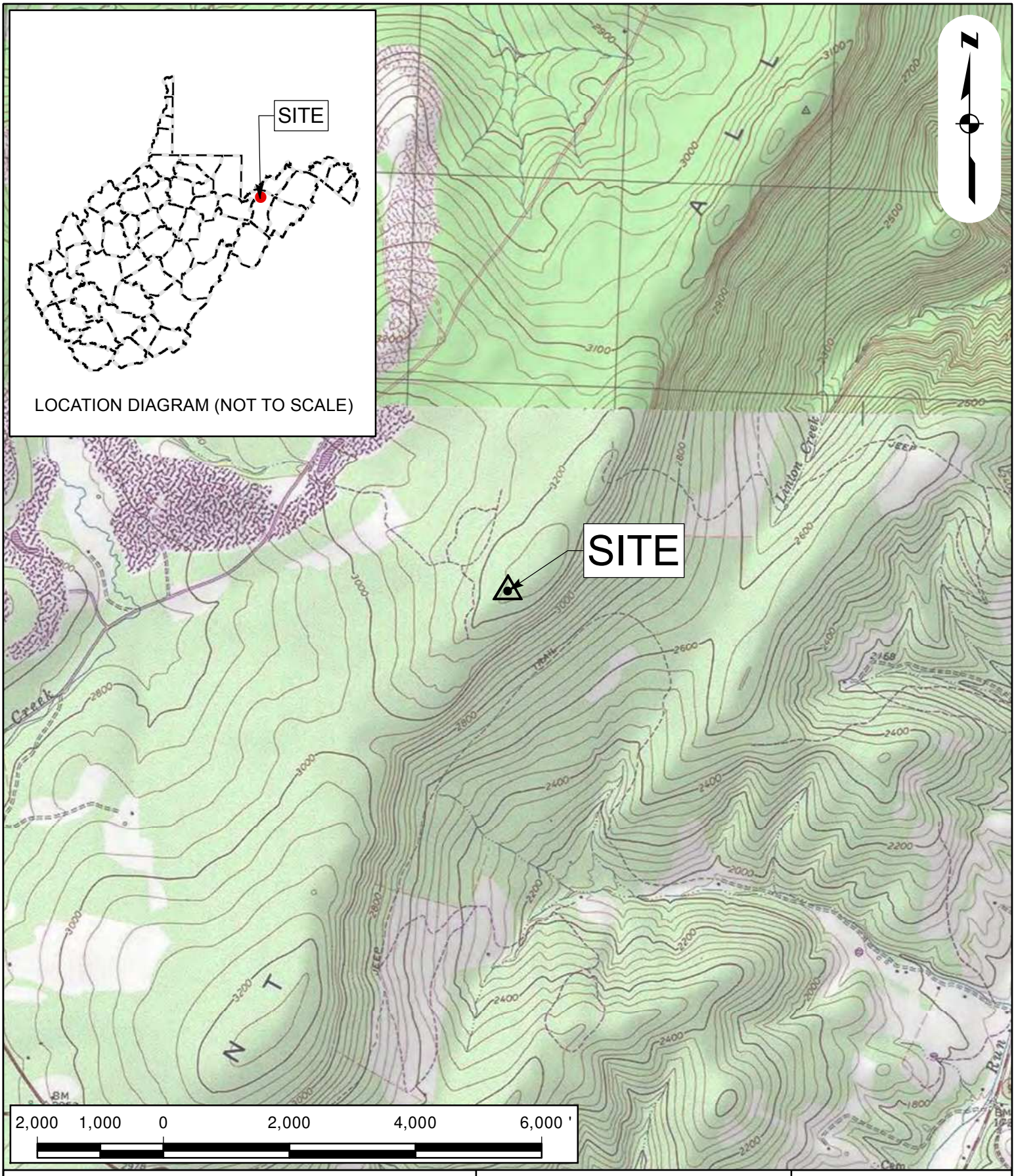
Mapping Grade GPS ____: Post Processed Differential _____

Real-Time Differential _____

4. **Letter size copy of the topography map showing the well location.**

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

_____	REGULATORY SPECIALIST	_____
Signature	Title	Date



USGS LOCATION MAP

PREPARED FOR

LUCY C HIPP SITE

GRANT COUNTY, WEST VIRGINIA
GREENLAND GAP USGS QUAD

PROJECT -	LUCY C HIPP
DATE -	2/8/2022
SCALE -	1 " = 2,000 '
DRAWN -	JKANE
FILE -	LUCY C HIPP_USGS_LOCATION_MAP.mxd

JHA Companies
ENGINEERS
SURVEYORS
ENVIRONMENTAL
GIS MAPPING
www.jhacompanies.com
(844) 542-4757

11/10/2016 PLUGGING PERMIT CHECKLIST

Plugging Permit

- [x] WW-4B
- [ ] WW-4B signed by inspector
- [x] WW-4A
- [x] SURFACE OWNER WAIVER or PROOF THAT APPLICATION WAS SENT BY REGISTERED OR CERITFIED MAIL
- [x] COAL OWNER/COAL OPERATOR/COAL LESSEE WAIVERS or PROOF THAT APPLICATION WAS SENT BY REGISTERED OR CERTIFIED MAIL
- [x] WW-9 PAGE 1 (NOTARIZED)
- [x] WW-9 PAGE 2 with attached drawing of road, location, pit and proposed area for land application
- [ ] WW-9 GPP PAGE 1 and 2 if well effluent will be land applied
- [x] RECENT MYLAR PLAT OR WW-7
- [x] WELL RECORDS/COMPLETION REPORT
- [x] TOPOGRAPHIC MAP OF WELL, SHOWING PIT IF PIT IS USED
- [x] MUST HAVE VALID BOND IN OPERATOR'S NAME
- [ ] CHECK FOR $100 IF PIT IS USED

WW-4A
Revised 6-07

1) Date: 1/31/2022
2) Operator's Well Number
East Dolly Sods 2 1932

3) API Well No.: 47 - 023 - 00007

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE 0F APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:
(a) Name: United States of America, c/o US Forest Service
Address: PO Box 1548
Elkins, WV 26241
(b) Name:
Address:
(c) Name:
Address:

6) Inspector: Gayne J Knitowski
Address: 601 57th Street SE
Charleston WV 25304
Telephone: 304-546-8171

5) (a) Coal Operator
Name:
Address:

(b) Coal Owner(s) with Declaration
Name: United States of America c/o US Forest Service
Address: PO Box 1548
Elkins, WV 26241
Name:
Address:

(c) Coal Lessee with Declaration
Name:
Address:

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

(1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
(2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator: Chesapeake Appalachia LLC
By: Keri Fieno
Its: Regulatory Specialist
Address: PO Box 18496
Oklahoma City, OK 73154-0496
Telephone: 405-935-1154

Subscribed and sworn before me this _____ day of _____

_____ Notary Public

My Commission Expires _____

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyoffier@wv.gov.

WW-4B
Rev. 2/01

1) Date January 31, 2022
2) Operator's
Well No. East Dolly Sods 2 1932
3) API Well No. 47- 023 - 00007

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil _____/ Gas x____/ Liquid injection _____/ Waste disposal _____/
(If "Gas, Production x___ or Underground storage ____) Deep x___/ Shallow____

5) Location: Elevation 2705.65' Watershed High Ridge Run
District Milroy County Grant Quadrangle Hopeville

6) Well Operator Chesapeake Appalachia LLC
Address PO Box 18496
Oklahoma City, OK 73154

7) Designated Agent Eric Haskins - Manager Reg Ops
Address 14 Chesapeake Lane
Sayre, PA 18840

8) Oil and Gas Inspector to be notified
Name Gayne J. Knitowski
Address 601 57th Street SE
Charleston, WV 25304

9) Plugging Contractor
Name Plants and Goodwin Inc
Address 360 High Street
Bradford, PA 16701

10) Work Order: The work order for the manner of plugging this well is as follows:

See attached

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector _____ Date _____

SURFACE OWNER WAIVER

Operator's Well Number East Dolly Sods 2 1932

INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW4-A

The well operator named on page WW-4A is applying for a permit from the State to plug and abandon a well. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.

WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

Time Limits and methods for filing comments. The law requires these materials to be served on or before the date the operator files his Application. You have **FIVE (5) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Comments must be in writing. Your comments must include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

The Chief has the power to deny or condition a well work permit based on comments on the following grounds:

1) The proposed well work will constitute a hazard to the safety of persons.
2) The soil erosion and sediment control plan is not adequate or effective;
3) Damage would occur to publicly owned lands or resources;
4) The proposed well work fails to protect fresh water sources or supplies;
5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation…".

If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.

VOLUNTARY STATEMENT OF NO OBJECTION

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application For A Permit To Plug And Abandon on Forms WW-4A and WW-4B, and a survey plat.

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

FOR EXECUTION BY A NATURAL PERSON ETC.

_____ Date _____
Signature

FOR EXECUTION BY A CORPORATION,

Name _____
By _____
Its _____ Date _____

Signature Date

WW-4B

API No. _____
Farm Name _____
Well No. _____

INSTRUCTIONS TO COAL OPERATORS
OWNERS AND LESSEE

The well operator named on the obverse side of WW-4 (B) is about to abandon the well described in the enclosed materials and will commence the work of plugging and abandoning said well on the date the inspector is notified. Which date shall not be less then five days after the day on which this notice and application so mailed is received, or in due course should be received by the Department of Environmental Protection Office of Oil & Gas.

This notice and application is given to you in order that your respective representatives may be present at the plugging and filling of said well. You are further notified that whether you are represented or not the operator will proceed to plug and fill said well in the manner required by Section 24, Article 6, Chapter 22 of the Code and given in detail on obverse side of this application.

NOTE: If you wish this well to be plugged according to 22-6-24(d) then as per Regulation 35CSR4-13.9 you must complete and return to this office on form OB-16 "Request by Coal Operator, Owner, or Lessee for plugging" prior to the issuance of this plugging permit.

WAIVER

The undersigned coal operator _____/ owner _____/ lessee _____/ of the coal under this well location has examined this proposed plugging work order. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: _____ _____

By: _____

Its _____

WW-9
(5/16)

API Number 47 - 023 - 00007
Operator's Well No. East Dolly Sods #2 1932

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Chesapeake Appalachia OP Code 2528

Watershed (HUC 10) High Ridge Run Quadrangle Hopeville

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ☑ No ☐

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste: _____

Will a synthetic liner be used in the pit? Yes ☐ No ☐ If so, what ml.?_____

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application (if selected provide a completed form WW-9-GPP)
_____ Underground Injection (UIC Permit Number_____)
_____ Reuse (at API Number_____)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
_____ Other (Explain_____

Will closed loop system be used? If so, describe: Drill cuttings will be circulated back into an open tank

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Fresh water

-If oil based, what type? Synthetic, petroleum, etc. N/A

Additives to be used in drilling medium? None

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) sawdust and citric acid

-Landfill or offsite name/permit number? Kimble Sanitary Landfill or Mud Masters

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature_____

Company Official (Typed Name) Keri Fieno

Company Official Title Regulatory Specialist

Subscribed and sworn before me this_____ day of_____, 20_____

_____ Notary Public

My commission expires_____

Form WW-9

Operator's Well No. East Dolly Sods 2-1934

Proposed Revegetation Treatment: Acres Disturbed 9.5 Prevegetation pH _____

Lime 3.90 Tons/acre or to correct to pH 7

Fertilizer type 8-16-16

Fertilizer amount 968 lbs/acre

Mulch 3 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Oats/Annual Rye	40lbs/acre	Birdsfoot Trefoil	8lbs/acre
Hay/Straw Mulch 3 Tons/Acre		Tall Fescue	40lbs/acre

Attach:
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: _____

Comments: _____

Title: _____ Date: _____

Field Reviewed? (_____) Yes (_____) No

RECOMMENDED PERMANENT SEEDING MIXTURE FOR ALL DISTURBED AREAS

MIXTURE NUMBER	SEASON	SPECIES	SEEDING RATE (lb/ac)
2	COOL	BIRDSFOOT TREFOIL TALL FESCUE	8 / 40

MULCHING

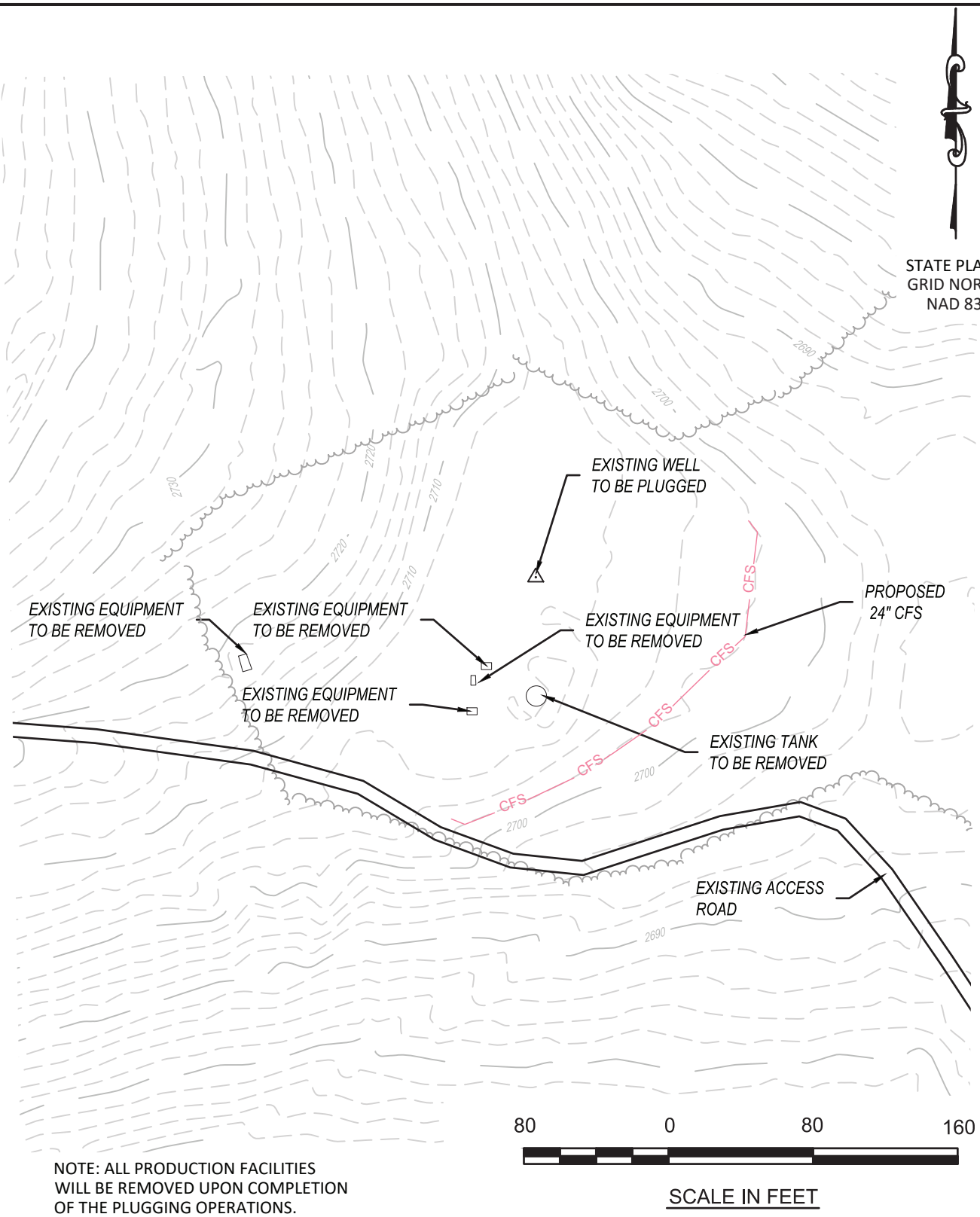
MATERIAL SHALL BE HAY OR STRAW WHICH IS FREE OF WEED AND SEEDS, NOT MOLDY, ROTTEN, AND SHALL BE APPLY TO ALL SLOPES FATTER THAN 3:1 AT A RATE OF 140 LBS/1,000 SF. (APPROXIMATELY TWO BALES PER 1,000 SF OR 3 TON PER AC)

HYDROSEEDING SPECIFICATION

MATERIAL	DESCRIPTION	APPLICATION RATE (PER 1,000 SY)
(1) SEE MIXTURE (% BY WEIGHT)	REDTOP – 10% PENNLAWN FESCUE – 45% KENTUCKY BLUEGRASS – 45%	27 LBS
(2) 8–16–16	COMMERCIAL FERTILIZER	200 LBS
(3) LIME	GROUND COMMERCIAL LIMESTONE	1,650 LBS
(4) MULCH	WOOD CELLULOSE FIBER	750 LBS

APPROXIMATE TACK COAT
PROCEDURE: SURFACE TO BE HYDROSEEDED SHALL BE CLEANED OF ALL DEBRIS AND OTHER MATTER HARMFUL TO UNIFORM GERMINATION. A WATER–SURRY MIXTURE COMMPOSED OF THE ABOVE "MATERIALS", ITEMS (1) THROUGHT (3) INCLUSIVE, SHALL BE SPRAYED UNIFORMLY OVER THE AREAS TO BE HYDROSEEDED. IMMEDIATELY, THEREAFTER, ITEM (4) "MULCH" SHALL BE BLOWN ON THE SAME AREA AND TACK–COATED. RATES AND TYPE OF MATERIALS SHALL BE SPECIFIED.

MAINTENANCE AND GUARANTEE
THE CONTRACTOR SHALL GUARANTEE A GOOD STAND OF GRASS IN THE SWALES AND ON BANKS. THE MEANS OF GUARANTEE SHALL BE BY WATERING, MOWING, REGRADING, REMULCHING, AND RESEEDING TO THE SATISFACTION OF THE OWNER UNTIL FINAL ACCEPTANCE. ANY AREAS WHICH FAIL TO SHOW A UNIFORM STAND WITHIN ONE YEAR SHALL BE RESEEDED AND REMULCHED AT THE CONTRACTORS EXPENSE WITH THE SAME MIXTURE ORIGINALLY USED THEREON. ERODED AREAS SHALL BE REPAIRED AND RESTORED TO FINISHED GRADE PRIOR TO RESEEDING AND REMULCHING. ALL SUCH REPAIRING OF EROSION, RESEEDING, AND REMULCHING SHALL BE REPEATED UNTIL ALL EFFECTED AREAS ARE COVERED WITH GRASS.



NOTE: ALL PRODUCTION FACILITIES WILL BE REMOVED UPON COMPLETION OF THE PLUGGING OPERATIONS.

EAST DOLLY SODS 2 1932 SITE RECLAMATION API# 47-023-00007

FOR

CHESAPEAKE ENERGY

LOCATED IN

GRANT COUNTY, WEST VIRGINIA

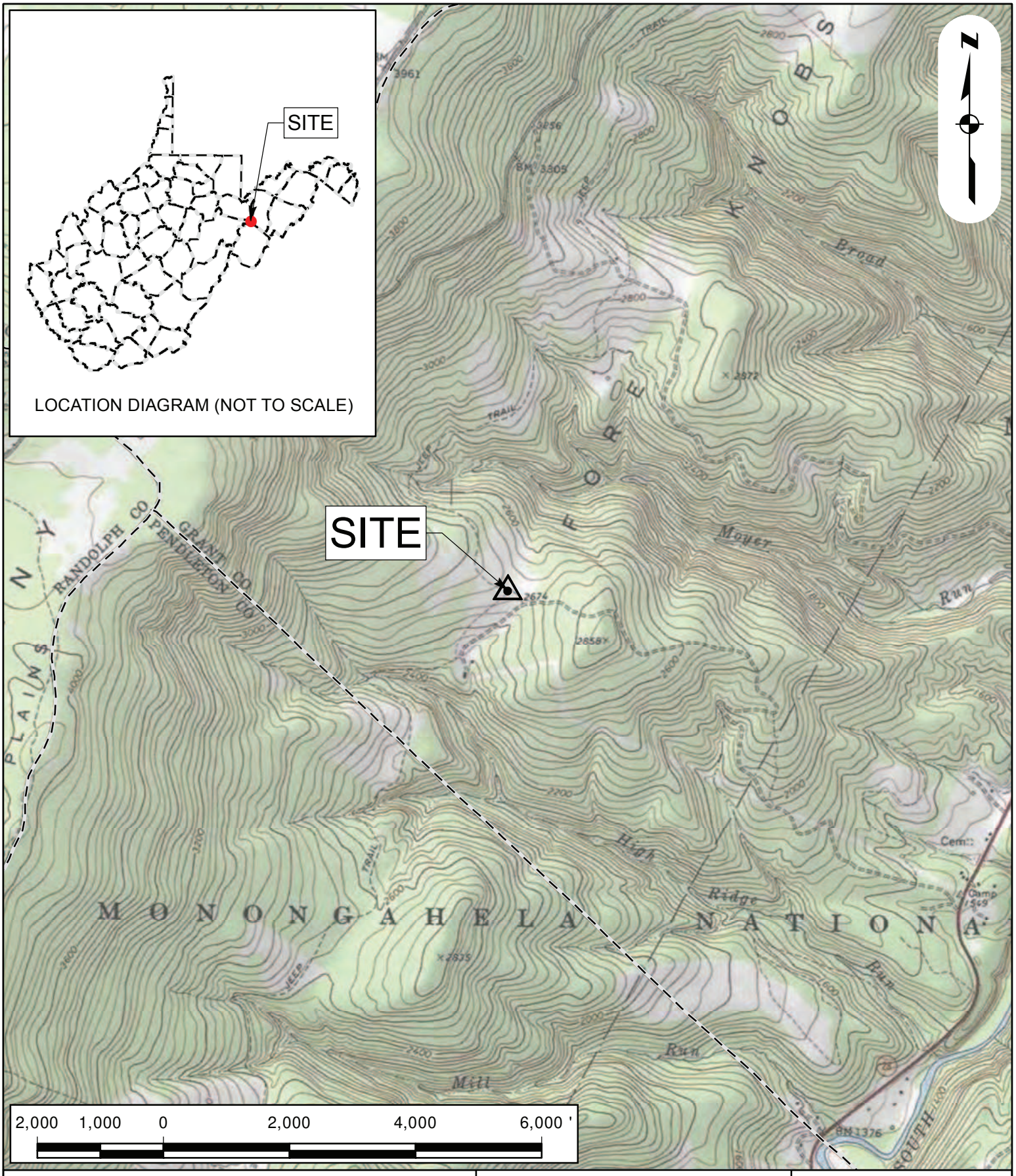
SITE PLAN

PLAN STATUS	DATE	NO.
FINAL	02/04/2022	1

LEGEND

- EXISTING CONTOUR — 1500
- EXISTING TREE LINE
- EXISTING ACCESS ROAD EDGE
- WELLHEAD
- COMPOSITE FILTER SOCK — CFS

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GIS MAPPING
www.jhacompanies.com
844-542-4757
466 SOUTH MAIN STREET
MONTROSE, PA 18801
PA • OH • NY • WV • VA • MD



USGS LOCATION MAP

PREPARED FOR

East Dolly Sods 2 Site

GRANT COUNTY, WEST VIRGINIA
HOPEVILLE USGS QUAD

PROJECT -	EAST DOLLY SODS2
DATE -	2/7/2022
SCALE -	1 " = 2,000 '
DRAWN -	JKANE
FILE -	USGS_LOCATION_MAP.mxd

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WW-9- GPP
Rev. 5/16

Page _____ of _____
API Number 47 - 23 - 00007
Operator's Well No. East Dolly Sods #2 1932

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
GROUNDWATER PROTECTION PLAN

Operator Name: Chesapeake Appalachia LLC

Watershed (HUC 10): High Ridge Run Quad: Hopeville

Farm Name: East Dolly Sods #2 -1932

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

See attached

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

4. Summarize all activities at your facility that are already regulated for groundwater protection.

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

8. Provide provisions and frequency for inspections of all GPP elements and equipment.

Signature: _____

Date: _____

WW-7
8-30-06

West Virginia Department of Environmental Protection
Office of Oil and Gas
WELL LOCATION FORM: GPS

API: 47-023-00007 **WELL NO.:** 2-1932

FARM NAME: East Dolly Sods

RESPONSIBLE PARTY NAME: Chesapeake Appalachia LLC

COUNTY: Grant **DISTRICT:** Milroy

QUADRANGLE: Hopeville

SURFACE OWNER: United States of America

ROYALTY OWNER: United States of America

UTM GPS NORTHING: 38.9543423

UTM GPS EASTING: -79.330576 **GPS ELEVATION:** 2705

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:

Survey grade GPS X: Post Processed Differential X

Real-Time Differential _____

Mapping Grade GPS ____: Post Processed Differential _____

Real-Time Differential _____

4. **Letter size copy of the topography map showing the well location.**

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

_____	Regulatory Specialist	1/31/2022
Signature	Title	Date

East Dolly Sods 2 1932
Property Number: 821239
AFE#: 1010393
WO#: 4000478998
AFE Estimate: $604630

Reason for P&A:

The EAST DOLLY SODS 2 1932 well in Grant County, West Virginia will be plugged and abandoned. This well is on federal land. Chesapeake has agreed to P&A this well in accordance to the request of the WV DEP. No future potential remains in this wellbore.

Summary:

The East Dolly SODS 2 1932 has a first production date of 6/10/1985. The P&A will consist of pulling 2-3/8" tubing and a CIBP will be set above the top perf. A cement plug will be set in the 5-1/2" casing and CBL will be run to find TOC behind 5-1/2" casing and cut pipe 100' above and pull same. A cement plug will be set in 9-5/8" casing above cut pipe. CBL will be run again in 9-5/8" casing to verify TOC at surface and remediate if needed. There will be a final cement plug set at surface after ensuring no annular gas exists. During the job, please attempt to pull all free pipe if unable to POOH at a minimum of 1-1.5x string weight.

Plan Going Forward:

NOTE: Two barriers are required through the course of this work. Please reference Chesapeake Barrier Standard and consult Superintendent, Foreman, and Engineer if you have any questions or concerns.

1.MIRU WOR & Equipment.

2.Kill well with water. ND well head and NU 7 1/16” 5K double ram BOP.

3.POOH with 8397’ of 2 3/8” tubing.

4.RU wireline and run gauge ring to 8380’/ RIH with CIBP and set at 8380’.

5.TIH with work string to top of CIBP.

6.Load hole with fresh water (capacity of 5 ½” casing is 185 bbls). Pump 89 bbls of gel water followed by 12 bbls (57 sacks) of Class H neat cement from 8370’ to 7970’. Displace cement with 30 bbls fresh water. POOH/WOC. Monitor 5 ½” for pressure build overnight.

7.RU wireline, tag cement plug at ~7970’. Run CBL on 5 ½” casing to find TOC behind pipe. Use a jet cutter to cut the 5 ½” ~100’ above TOC.

8.POOH with 5 ½” casing (Calculated free pipe is approximately 3900’).

9.TIH with tubing to 5 ½” stub. Pump 242 bbls of gel water followed by 30 bbls (143 sacks) of Class H neat cement (Estimated plug depth is 3900’ to 3500’). Displace cement with 13 bbls fresh water. POOH/WOC. Monitor pressure build on 9 5/8” casing.

10.RU wireline, Tag cement plug at ~3500’. Run CBL on 9 5/8” casing to verify TOC is at surface. Be prepared to jet cut 9 5/8” if un-cemented pipe exists or to perforate 9 5/8” casing. If no annular gas issues, proceed to step 11.

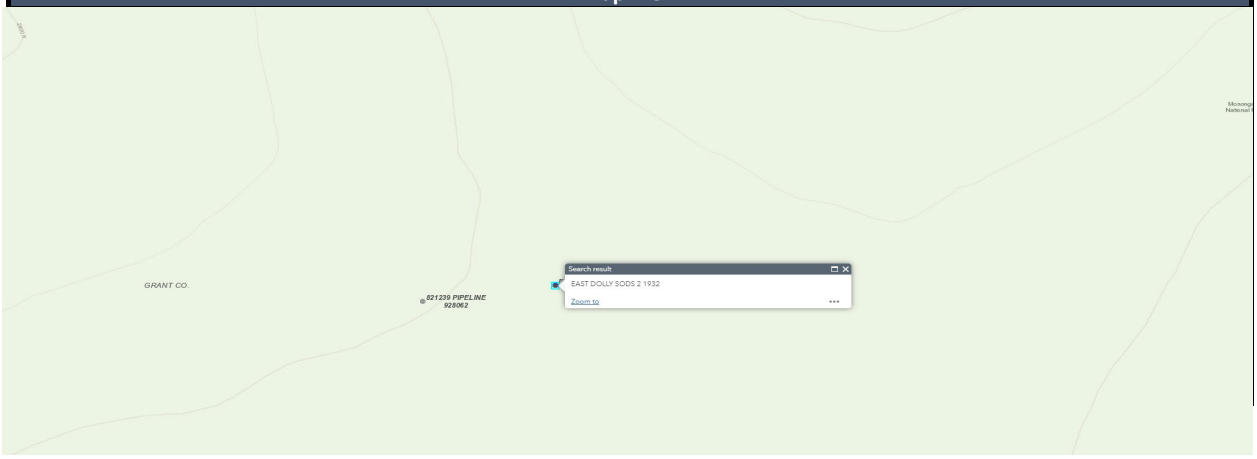
11.TIH with tubing to 400’ and pump 30 bbls (143 sacks) of Class H neat cement from 400’ to 0’.

12. RDMO.

Well Information	
Well Name	East Dolly Sods 2 1932
Location	West Virgina
Formation	Oriskany
PN#	821239
AFE#	1010393
WO#	4000478998
WBS	PA-1082123900-01
API#	4702300007
Latitude	38.9543423
Longitude	-79.3300576

Contact Information			
Title	Name	E-mail	Phone
Production Engineer	JJ Kim	jj.kim@chk.com	405-596-0720
Production Engineer (Secondary)			
Production Manager	John Van Gels	john.vangels@chk.com	(636) 448-1104
Production Supervisor	Keeley Bergman	keeley.bergman@chk.com	(918) 991-5520
Production Superintendent	Chris Sprute	chris.sprute@chk.com	318-771-2769
Workover Foreman	Lucas Welch	lucas.welch@chk.com	(570) 423-4236
Regulatory Manager	Eric Haskins	eric.haskins@chk.com	(607) 242-3839
DEP Contact	Jeffrey. W. McLaughlin	Jeffrey.W.McLaughlin@wv.gov	(304) 926-0440
BLM Contact	Trey Mitchell	tmitchell@blm.gov	(414) 297-4438

Map View



Classification: DCL-Internal

CHESAPEAKE ENERGY

RKB	Variable
KOP	N/A
Depth of Top Perf (MD)	8,410'
Cement Yield	1.17 cu.ft/sk
Density	15.6 ppg

Casing Detail

String	OD (in)	ID (in)	Weight (lbs./ft)	Grade	Casing Cap (bbl/ft)	Annular Cap (bbl/ft)	Top (ft-MD)	Bttm (ft-MD)	TOC	Hole Size
Conductor	16		Unknown	Unknown			0	211	Surface	
Surface	13.375		Unknown	Unknown			0	211	Surface	
Intermediate	9.625		Unknown	Unknown			0	4,098	Surface	
Production	5.5		Unknown	Unknown			0	8,820	3903	

Tubing Design

Item/No	OD (in)	ID (in)	Description	Length (ft)	Depth (ft-MD)
2-3/8" Tubing	2.375	1.995	~258 Joints	32.5	8,397

Estimated Plug Set Depths and Cement Needed

Item	Plug Height	Top of Plug	Bottom of Plug	Cement Type	% Excess Cmt	Cement Sacks	Displacement Volume (BBL)
Plug 1	400'	7,970'	8,370'	Class H	0%	44	30
Plug 2	400'	3,500'	3,900'	Class H	0%	148	13
Plug 3	400'	0'	400'	Class H	0%	143	0
Plug 4							
Plug 5							
Plug 6							
Plug 7							
Plug 8							
Plug 9							
Plug 10							

Plugging Details

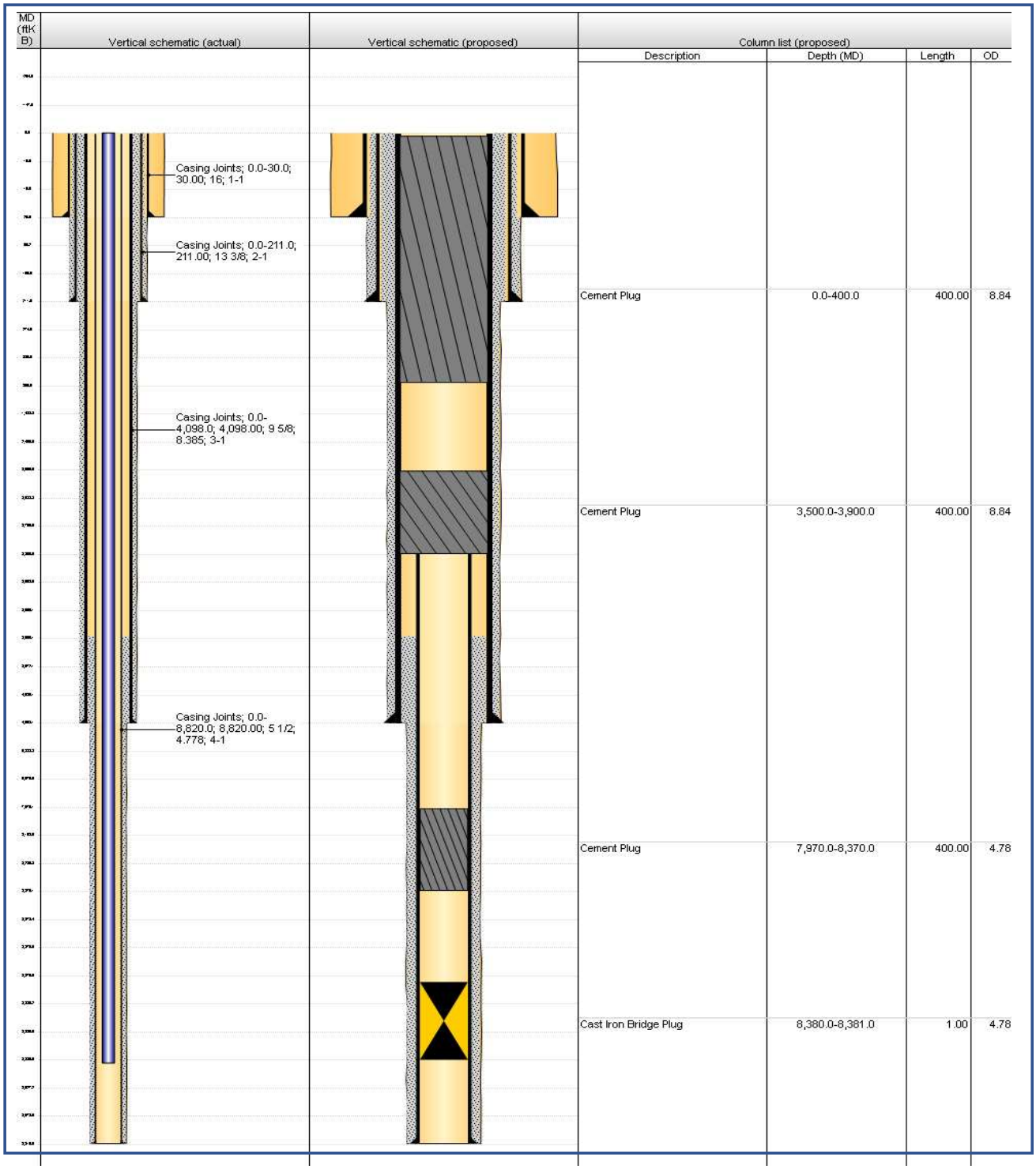
Plug #	Depth Code	Depth	Csg or Open Hole?	Peforate?	Cmt Behind Csg
Plug 1	CIBP	8,380'	Csg	N/A	Yes
Plug 2	5-1/2" Casing Plug	7,970'	Csg	N/A	3909'
Plug 3	9-5/8" Casing Plug	3,500'	Csg	N/A	Yes
Plug 4	9-5/8" Surface Plug	0'	Csg	N/A	Yes
Plug 5					
Plug 6					
Plug 7					
Plug 8					
Plug 9					
Plug 10					

Please Note: All gel spacers between plugs will exceed 9 ppg

Classification: DCL-Internal

CHESAPEAKE ENERGY

RKB	Variable
KOP	N/A
Depth of Top Perf	8,410'
Cement Yield	1.17 cu.ft/sk
Density	15.6 ppg



Column list (proposed)

Description	Depth (MD)	Length	OD
Cement Plug	0.0-400.0	400.00	8.84
Cement Plug	3,500.0-3,900.0	400.00	8.84
Cement Plug	7,970.0-8,370.0	400.00	4.78
Cast Iron Bridge Plug	8,380.0-8,381.0	1.00	4.78

IV-35
(Rev 8-81)

RECEIVED
AUG 3 1 1984
OIL & GAS DIVISION
DEPT. OF MINES

State of West Virginia
Department of Mines
Oil and Gas Division

Date 08/22/84
Operator's
Well No. 2 - 1932
Farm East Dolly Sods #2
API No. 47 - 023 - 0007

WELL OPERATOR'S REPORT (CONFIDENTIAL WELL)
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil ___ / Gas x / Liquid Injection ___ / Waste Disposal ___ /
(If "Gas," Production x / Underground Storage ___ / Deep x / Shallow ___ /)

LOCATION: Elevation: 2705.65' Watershed High Ridge Run
District: Milroy County Grant Quadrangle Hopeville

COMPANY UNION DRILLING, INC.
ADDRESS P. O. Drawer 40, Buckhannon, WV 26201
DESIGNATED AGENT Joseph C. Vanzant, Jr.
ADDRESS P. O. Drawer 40, Buckhannon, WV 26201
SURFACE OWNER United State of America
ADDRESS c/o U.S. Forest Service, P. O. Box 1548 Elkins, WV 26241
MINERAL RIGHTS OWNER See Page 2
ADDRESS
OIL AND GAS INSPECTOR FOR THIS WORK Philip Tracy ADDRESS Forest Festival Terrace, Apt. #24, Elkins, WV 26241
PERMIT ISSUED January 23, 1984
DRILLING COMMENCED 04/14/84
DRILLING COMPLETED 05/31/84
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.		30'	
13-10"		211'	189 cf
9 5/8	4098.67'	4098.67'	1883.5cf
8 5/8			
7			
5 1/2		8881.18'	1243.2 cf
4 1/2			
3			
2		8397.34'	
Liners used			

GEOLOGICAL TARGET FORMATION Oriskany Depth 8820 feet
Depth of completed well 8820 feet Rotary x / Cable Tools ___
Water strata depth: Fresh 276 feet; Salt ___ feet
Coal seam depths: None Is coal being mined in the area? ___

GRANT 0007

OPEN FLOW DATA
Producing formation Oriskany Pay zone depth ___ feet
Gas: Initial open flow 301 Mcf/d Oil: Initial open flow ___ Bbl/d
Final open flow 933 Mcf/d Final open flow ___ Bbl/d
Time of open flow between initial and final tests ? hours
Static rock pressure 3000 psig (surface measurement) after 24 hours shut in
(If applicable due to multiple completion--)
Second producing formation ___ Pay zone depth ___ feet
Gas: Initial open flow ___ Mcf/d Oil: Initial open flow ___ Bbl/d
Final open flow ___ Mcf/d Oil: Final open flow ___ Bbl/d
Time of open flow between initial and final tests ___ hours
Static rock pressure ___ psig (surface measurement) after ___ hours shut in

(Continue on reverse side)

FORM IV-35
(REVERSE)

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

On 08/13/84 Fractured at 8410/15, 8426/27, 8434/35, 8531/32, 8536/39, 8577/78 with 2412 sks. sand, and 2620 BBL treated fluid.

WELL LOG

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Sand and Shale	0	8084	At 276 1/4" water
Purcell Limestone	8084	8197	
Lower Marcellus	8197	8227	
Tioga	8227	8232	
Needmore Shale	8243	8408	
Oriskany Sandstone	8408	8608	
Helderberg Limestone	8608	TD	

MINERAL RIGHTS OWNERS
(2) tracts of Unit
U. S. of A.
c/o U. S. Forest Service
P. O. Box 1548
Elkins, WV 26241
(1) tract of Unit
Oather H. & Hazel Heavner
Route #1, Box 243
Maysville, WV 26833

(Attach separate sheets as necessary)

UNION DRILLING, INC.
Well Operator

By: Joseph C. Pettey

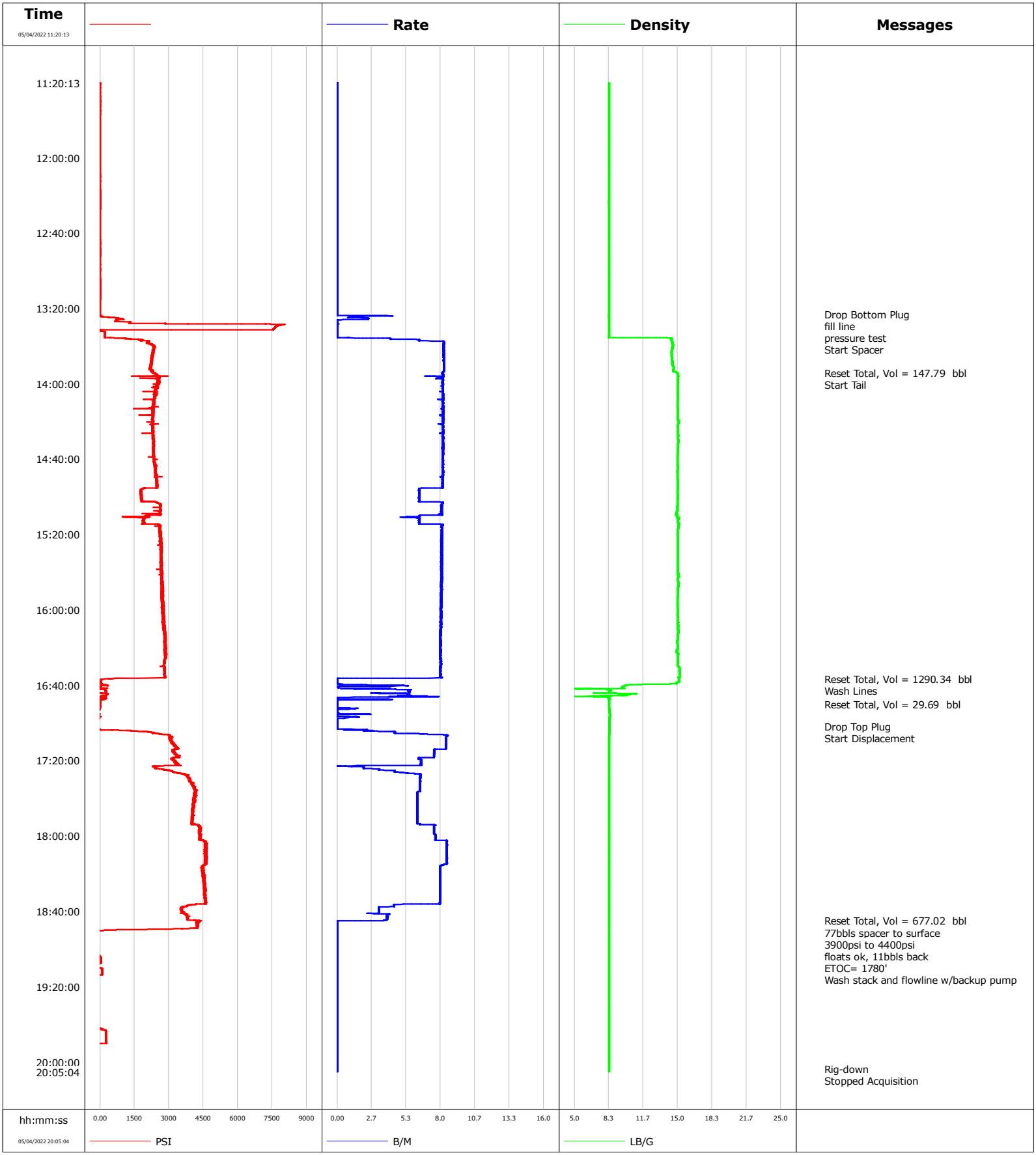
Date: 08/22/84 Joseph C. Pettey, Vice President of Production

Note: Regulation 2.02(i) provides as follows:
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."

Schlumberger

Cementing Job Report

Well	Charles Jamison 610H	**Client**	SWN
Field		**SIR No.**	EOHC-00088
Engineer	Barry Dickerson	**Job Type**	Production
Country	United States	**Job Date**	05-04-2022



Schlumberger Cementing Service Report

Customer	Job Number
SWN	EOHC-00088

Well	Location (legal)	Schlumberger Location	Job Start
Charles Jamison 610H 610H		SOH	May/04/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
	Clean-Sandstone	90 deg	8.5 in	29592.0 ft	7399.0 ft

County	State/Province	BHP	BHST	BHCT	Pore Press. Gradient
Marshall	WV	psi	142 degF	141 degF	lb/gal

Well Master	API/UWI
0066495491	47-051-02426-00-00

Rig Name	Drilled For	Service Via
SDC 41	Gas	Land

Offshore Zone	Well Class	Well Type
	New	New Well Completion

Drilling Fluid Type	Max. Density	Plastic Viscosity
Bentonite	14.10 lb/gal	cP

Service Line	Job Type
Cementing	Production

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	CRT

Service Instructions

Pressure Test 1000psi/7000psi
150bbls MPE@14.5ppg, w/B553@ 1.0gal/bbl
Drop Bottom Plug
1251bbls Tail@15.0ppg,5445sks,Y=1.1929,ClassA
Wash Lines/Drop Top Plug
Displace 677bbls, 100 lbs sugar 1st 20bbls

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
5089.0	6.0	24.0	P110	BUTT
29592.0	5.5	20.0	P110	BUTT

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	677.0 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	678.0 bbl	1213.0 bbl	1099.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
X	X

Lift Pressure	Pipe Rotated	Pipe Reciprocated
3900 psi	X	

No. Centralizers	Top Plugs	Bottom Plugs
	1	1

Cement Head Type
CRT

Job Scheduled For	Arrived on Location	Leave Location
May/04/2022 13:00	May/04/2022 13:00	May/05/2022 21:00

Casing Tools

Shoe Type	Guide
Shoe Depth	29592.0 ft
Stage Tool Type	
Stage Tool Depth	ft
Collar Type	Float
Collar Depth	29546.0 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	CMT_TREAT_PRES PSI	CMT_RATE B/M	CMT_DENS LB/G	Volume BBL	Message
05/04/2022	11:20:13	-0	0.0	8.35	0.0	Started Acquisition
05/04/2022	11:23:53	-1	0.0	8.35	0.1	
05/04/2022	11:27:33	-1	0.0	8.35	0.2	
05/04/2022	11:31:13	-1	0.0	8.35	0.3	
05/04/2022	11:34:53	-1	0.0	8.35	0.3	
05/04/2022	11:38:33	-1	0.0	8.35	0.4	
05/04/2022	11:42:13	-1	0.0	8.34	0.5	
05/04/2022	11:45:53	-1	0.0	8.35	0.6	
05/04/2022	11:49:33	-2	0.0	8.35	0.6	
05/04/2022	11:53:13	-1	0.0	8.34	0.7	
05/04/2022	11:56:53	-2	0.0	8.35	0.8	
05/04/2022	12:00:33	-1	0.0	8.34	0.8	
05/04/2022	12:04:13	-1	0.0	8.35	0.9	
05/04/2022	12:07:53	-0	0.0	8.34	1.0	
05/04/2022	12:11:33	-0	0.0	8.34	1.0	
05/04/2022	12:15:13	-1	0.0	8.34	1.1	
05/04/2022	12:18:53	0	0.0	8.35	1.1	
05/04/2022	12:22:33	0	0.0	8.34	1.2	
05/04/2022	12:26:13	0	0.0	8.34	1.2	
05/04/2022	12:29:53	-2	0.0	8.35	1.2	
05/04/2022	12:33:33	-2	0.0	8.35	1.2	

Well	Field	Job Start	Customer	Job Number
Charles Jamison 610H 610H		May/04/2022	SWN	EOHC-00088

Date	Time 24-hr clock	CMT_TREAT_PRES PSI	CMT_RATE B/M	CMT_DENS LB/G	Volume BBL	Message
05/04/2022	12:40:53	-2	0.0	8.35	1.3	
05/04/2022	12:44:33	-0	0.0	8.34	1.3	
05/04/2022	12:48:13	0	0.0	8.35	1.3	
05/04/2022	12:51:53	0	0.0	8.35	1.3	
05/04/2022	12:55:33	-1	0.0	8.34	1.3	
05/04/2022	12:59:13	-1	0.0	8.34	1.3	
05/04/2022	13:02:53	-1	0.0	8.34	1.3	
05/04/2022	13:06:33	0	0.0	8.34	1.3	
05/04/2022	13:10:13	-0	0.0	8.35	1.3	
05/04/2022	13:13:53	-0	0.0	8.34	1.3	
05/04/2022	13:17:33	-1	0.0	8.34	1.3	
05/04/2022	13:21:13	-1	0.0	8.34	1.3	
05/04/2022	13:22:52	-1	0.0	8.34	1.3	Drop Bottom Plug
05/04/2022	13:23:37	-2	0.0	8.34	1.3	fill line
05/04/2022	13:24:53	606	1.8	8.34	3.3	
05/04/2022	13:28:33	7984	0.0	8.34	5.8	
05/04/2022	13:32:05	4	0.0	8.34	5.8	pressure test
05/04/2022	13:32:07	4	0.0	8.34	5.8	Start Spacer
05/04/2022	13:32:13	128	0.0	8.34	5.8	
05/04/2022	13:35:53	1077	4.0	14.37	6.5	
05/04/2022	13:39:33	2317	8.2	14.53	33.0	
05/04/2022	13:43:13	2308	8.2	14.41	63.1	
05/04/2022	13:46:53	2242	8.2	14.45	93.4	
05/04/2022	13:50:33	2194	8.2	14.52	123.6	
05/04/2022	13:54:11	2408	8.1	14.94	153.6	Reset Total, Vol = 147.79 bbl
05/04/2022	13:54:13	2317	8.1	14.96	153.8	Start Tail
05/04/2022	13:57:53	2573	8.2	15.01	183.5	
05/04/2022	14:01:33	2499	8.2	15.00	213.4	
05/04/2022	14:05:13	2383	8.2	15.00	243.3	
05/04/2022	14:08:53	2331	8.2	15.01	273.3	
05/04/2022	14:12:33	2329	8.2	15.00	303.3	
05/04/2022	14:16:13	2280	8.2	15.02	333.3	
05/04/2022	14:19:53	2309	8.2	15.10	363.3	
05/04/2022	14:23:33	2300	8.2	15.03	393.3	
05/04/2022	14:27:13	2318	8.2	15.06	423.3	
05/04/2022	14:30:53	2356	8.2	15.08	453.3	
05/04/2022	14:34:33	2327	8.2	15.01	483.3	
05/04/2022	14:38:13	2329	8.2	14.99	513.4	
05/04/2022	14:41:53	2372	8.2	14.96	543.3	
05/04/2022	14:45:33	2386	8.2	14.99	573.3	
05/04/2022	14:49:13	2444	8.2	14.98	603.3	
05/04/2022	14:52:53	2463	8.2	15.02	633.2	
05/04/2022	14:56:33	1762	6.3	14.99	661.0	
05/04/2022	15:00:13	1779	6.3	15.00	684.2	
05/04/2022	15:03:53	2614	8.1	14.97	709.6	
05/04/2022	15:07:33	2638	8.1	14.96	739.2	
05/04/2022	15:11:13	1962	6.3	15.13	765.9	
05/04/2022	15:14:53	2604	8.1	15.10	789.9	
05/04/2022	15:18:33	2620	8.1	15.04	819.7	
05/04/2022	15:22:13	2635	8.1	15.01	849.4	
05/04/2022	15:25:53	2653	8.1	15.02	879.1	
05/04/2022	15:29:33	2649	8.1	15.02	908.7	
05/04/2022	15:33:13	2689	8.1	15.02	938.4	
05/04/2022	15:36:53	2648	8.1	15.01	968.0	

Well	Field	Job Start	Customer	Job Number
Charles Jamison 610H 610H		May/04/2022	SWN	EOHC-00088

Date	Time 24-hr clock	CMT_TREAT_PRES PSI	CMT_RATE B/M	CMT_DENS LB/G	Volume BBL	Message
05/04/2022	15:44:13	2691	8.1	15.05	1027.3	
05/04/2022	15:47:53	2699	8.1	15.05	1056.8	
05/04/2022	15:51:33	2668	8.0	15.01	1086.4	
05/04/2022	15:55:13	2710	8.0	14.99	1115.9	
05/04/2022	15:58:53	2737	8.1	14.99	1145.4	
05/04/2022	16:02:33	2748	8.0	14.99	1174.8	
05/04/2022	16:06:13	2793	8.0	15.02	1204.3	
05/04/2022	16:09:53	2830	8.0	15.01	1233.7	
05/04/2022	16:13:33	2834	8.0	15.05	1263.0	
05/04/2022	16:17:13	2836	8.0	14.94	1292.3	
05/04/2022	16:20:53	2813	8.0	14.94	1321.5	
05/04/2022	16:24:33	2867	8.0	15.05	1350.8	
05/04/2022	16:28:13	2821	8.0	15.04	1380.2	
05/04/2022	16:31:53	2804	8.0	15.19	1409.5	
05/04/2022	16:35:33	2839	8.0	15.18	1438.8	
05/04/2022	16:36:24	550	0.0	15.11	1443.9	Reset Total, Vol = 1290.34 bbl
05/04/2022	16:36:26	496	0.0	15.11	1443.9	Wash Lines
05/04/2022	16:39:13	76	0.1	14.52	1443.9	
05/04/2022	16:42:53	231	5.6	8.49	1453.2	
05/04/2022	16:46:33	228	0.0	8.39	1471.7	
05/04/2022	16:50:04	4	0.0	8.35	1473.6	Reset Total, Vol = 29.69 bbl
05/04/2022	16:50:13	4	0.0	8.35	1473.6	
05/04/2022	16:53:53	-55	0.0	8.42	1474.4	
05/04/2022	16:57:33	-34	0.0	8.42	1476.4	
05/04/2022	17:01:13	-54	0.0	8.42	1476.4	
05/04/2022	17:01:55	-55	0.0	8.42	1476.4	Drop Top Plug
05/04/2022	17:01:56	-54	0.0	8.42	1476.4	Start Displacement
05/04/2022	17:04:53	2235	4.5	8.41	1480.9	
05/04/2022	17:08:33	3072	8.4	8.36	1508.3	
05/04/2022	17:12:13	3318	8.4	8.35	1539.2	
05/04/2022	17:15:53	3202	7.5	8.35	1568.2	
05/04/2022	17:19:33	3182	6.5	8.35	1594.3	
05/04/2022	17:23:13	2337	2.0	8.35	1614.8	
05/04/2022	17:26:53	3553	6.0	8.35	1628.4	
05/04/2022	17:30:33	3872	6.4	8.35	1652.0	
05/04/2022	17:34:13	4104	6.4	8.35	1675.6	
05/04/2022	17:37:53	4120	6.2	8.35	1698.8	
05/04/2022	17:41:33	4119	6.2	8.35	1721.5	
05/04/2022	17:45:13	4048	6.2	8.35	1744.2	
05/04/2022	17:48:53	4083	6.2	8.35	1766.9	
05/04/2022	17:52:33	3993	6.2	8.35	1789.6	
05/04/2022	17:56:13	4381	7.5	8.35	1815.4	
05/04/2022	17:59:53	4355	7.6	8.35	1842.9	
05/04/2022	18:03:33	4612	8.5	8.35	1872.0	
05/04/2022	18:07:13	4613	8.5	8.35	1903.1	
05/04/2022	18:10:53	4609	8.5	8.35	1934.2	
05/04/2022	18:14:33	4624	8.5	8.35	1965.3	
05/04/2022	18:18:13	4524	8.0	8.35	1994.9	
05/04/2022	18:21:53	4480	8.0	8.35	2024.1	
05/04/2022	18:25:33	4553	8.0	8.35	2053.3	
05/04/2022	18:29:13	4589	8.0	8.35	2082.5	
05/04/2022	18:32:53	4595	8.0	8.35	2111.7	
05/04/2022	18:36:33	3911	4.4	8.35	2139.4	
05/04/2022	18:40:13	3573	3.2	8.35	2152.3	

Well	Field	Job Start	Customer	Job Number
Charles Jamison 610H 610H		May/04/2022	SWN	EOHC-00088

Date	Time 24-hr clock	CMT_TREAT_PRES PSI	CMT_RATE B/M	CMT_DENS LB/G	Volume BBL	Message
05/04/2022	18:44:57	4238	0.1	8.35	2169.4	Reset Total, Vol = 677.02 bbl
05/04/2022	18:45:00	4427	0.0	8.35	2169.4	77bbls spacer to surface
05/04/2022	18:45:01	4233	0.0	8.35	2169.4	3900psi to 4400psi
05/04/2022	18:47:33	4214	0.0	8.35	2169.4	
05/04/2022	18:51:13	-94	0.0	8.35	2169.4	
05/04/2022	18:51:54	-96	0.0	8.35	2169.4	floats ok, 11bbls back
05/04/2022	18:52:40	-96	0.0	8.35	2169.4	ETOC= 1780'
05/04/2022	18:53:40	-96	0.0	8.35	2169.4	Wash stack and flowline w/backup pump
05/04/2022	18:54:53	-97	0.0	8.35	2169.4	
05/04/2022	18:58:33	-97	0.0	8.35	2169.4	
05/04/2022	19:02:13	-103	0.0	8.35	2169.4	
05/04/2022	19:05:53	35	0.0	8.35	2169.4	
05/04/2022	19:09:33	-58	0.0	8.35	2169.4	
05/04/2022	19:13:13	102	0.0	8.35	2169.4	
05/04/2022	19:16:53	-113	0.0	8.35	2169.4	
05/04/2022	19:20:33	-114	0.0	8.35	2169.4	
05/04/2022	19:24:13	-111	0.0	8.35	2169.4	
05/04/2022	19:27:53	-110	0.0	8.35	2169.4	
05/04/2022	19:31:33	-102	0.0	8.35	2169.4	
05/04/2022	19:35:13	-114	0.0	8.35	2169.4	
05/04/2022	19:38:53	-107	0.0	8.35	2169.4	
05/04/2022	19:42:33	99	0.0	8.35	2169.4	
05/04/2022	19:46:13	257	0.0	8.35	2169.4	
05/04/2022	19:49:53	263	0.0	8.35	2169.4	
05/04/2022	19:53:33	-59	0.0	8.35	2169.4	
05/04/2022	19:57:13	-105	0.0	8.35	2169.4	
05/04/2022	20:00:53	-114	0.0	8.35	2169.4	
05/04/2022	20:03:42	-116	0.0	8.35	2169.4	Rig-down
05/04/2022	20:04:33	-115	0.0	8.35	2169.4	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
6.0			8.5	1251.0	0.0	150.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
8052	-116	2630	4400			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume
%	1251.0 bbl	677.0 bbl	70 degF	☐	bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
	Barry Dickerson	-	☒ -

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. David Reinbeau MSH 1H
Well Pad Name: David Reinbeau MSH

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	051-MArsha	07-Union	486-Moundsville
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: David Reinbeau MSH 1H Well Pad Name: David Reinbeau MSH

3) Farm Name/Surface Owner: Shelly A & David W. Reinbeau Public Road Access: Sorghum Ridge Road

4) Elevation, current ground: 1251' Elevation, proposed post-construction: 1251'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

6) Existing Pad: Yes or No Yes

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.04.18 17:43:09 -04'00'

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Up-Dip well to the North, Target Top TVD- 6313', Target Base TVD- 6364', Anticipated Thickness- 51', Associated Pressure- 4137

8) Proposed Total Vertical Depth: 6346'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 28261'

11) Proposed Horizontal Leg Length: 21444.34'

12) Approximate Fresh Water Strata Depths: 426'

13) Method to Determine Fresh Water Depths: Deepest nearby water well

14) Approximate Saltwater Depths: 883' Salinity Profile

15) Approximate Coal Seam Depths: 765'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes x No x

(a) If Yes, provide Mine Info:
Name: Ohio County Mine
Depth: 765'
Seam: Pittsburgh
Owner: American Consolidated Natural Resources

API NO. 47- 051 -
OPERATOR WELL NO. David Reinbeau MSH 1H
Well Pad Name: David Reinbeau MSH

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94#	126'	126'	CTS
Fresh Water	13 3/8"	New	H-40	48#	506'	506'	541 sx/CTS
Coal	See	Interm	Casing				
Intermediate	9 5/8"	New	J-55	36#	2080'	2080'	982 sx/CTS
Production	6"	New	P-110	24.5#	0'	6000'	
Production	5 1/2"	New	P-110 HP	20#	6000'	28261'	Tail 9400sx/ 100' Inside Intermodiate
Liners							

Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.04.18 17:43:26 -04'00'

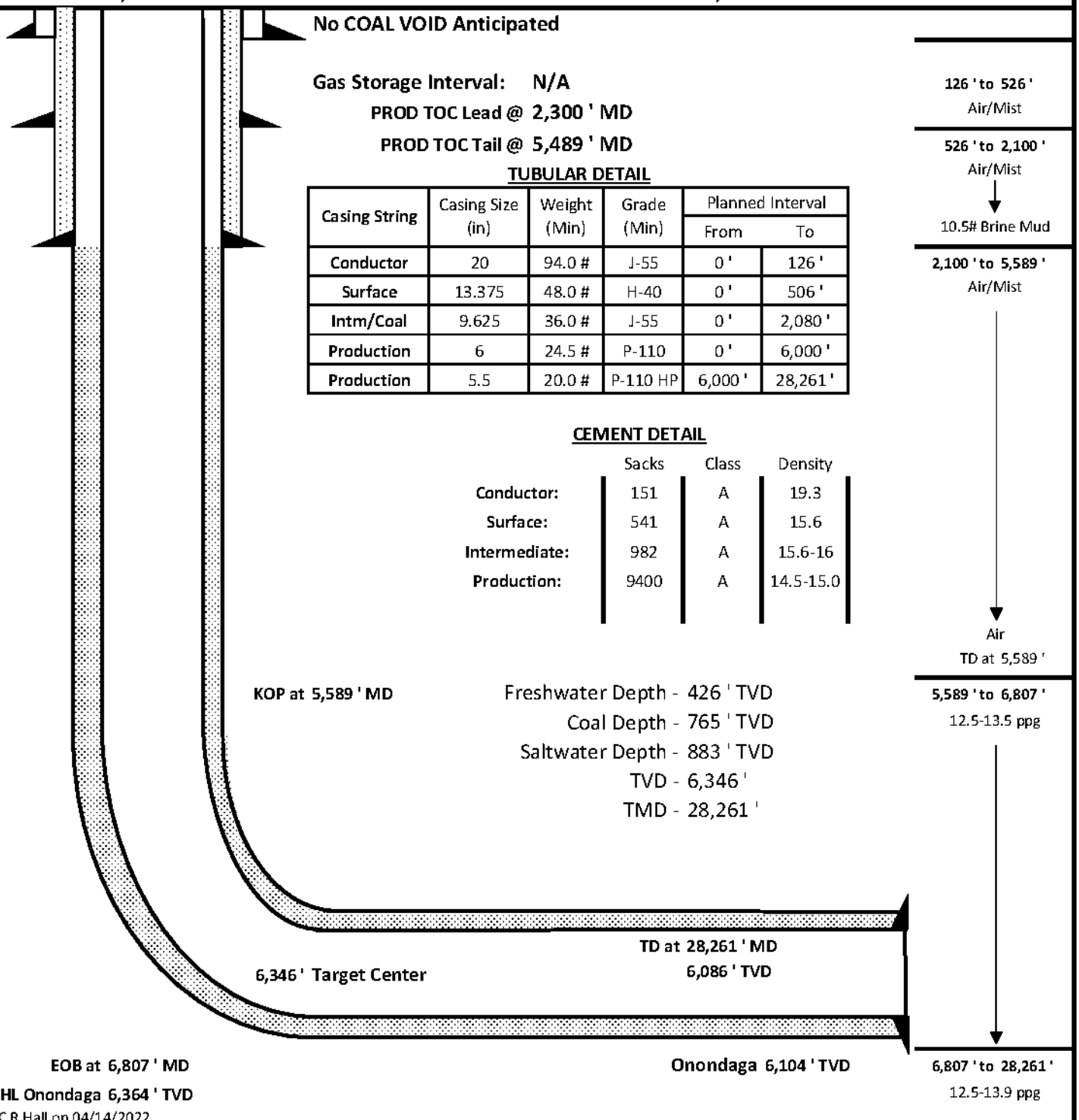
TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.20/30% Excess
Fresh Water	13 3/8"	17.5"	0.380	2730	633	Class A	1.20/30% Excess
Coal	See	Interm	Casing				
Intermediate	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/40% Excess
Production	5 1/2"	8 3/4"-8 1/2"	0.361	14360	10500	Class A	1.19/5% Excess
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

Southwestern Energy Company | Proposed Drilling Program

Well:	DAVID REINBEAU MSH 1	**Re-entry Rig:**	TBD
Field:	NORTH VICTORY FIELD WET	**Prospect:**	Marcellus Shale
County:	MARSHALL	**State:**	WV
SHL:	39.9928 Latitude -80.6615 Longitude		
BHL:	40.0482 Latitude -80.6887 Longitude		
KB Elev:	1,277 ft MSL KB: 26 ft AGL	**GL Elev:**	1,251 ft MSL



Gas Storage Interval: N/A

PROD TOC Lead @ 2,300 ' MD

PROD TOC Tail @ 5,489 ' MD

TUBULAR DETAIL

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval From	Planned Interval To
Conductor	20	94.0 #	J-55	0 '	126 '
Surface	13.375	48.0 #	H-40	0 '	506 '
Intm/Coal	9.625	36.0 #	J-55	0 '	2,080 '
Production	6	24.5 #	P-110	0 '	6,000 '
Production	5.5	20.0 #	P-110 HP	6,000 '	28,261 '

CEMENT DETAIL

	Sacks	Class	Density
Conductor:	151	A	19.3
Surface:	541	A	15.6
Intermediate:	982	A	15.6-16
Production:	9400	A	14.5-15.0

Freshwater Depth - 426 ' TVD
Coal Depth - 765 ' TVD
Saltwater Depth - 883 ' TVD
TVD - 6,346 '
TMD - 28,261 '

Created by: C R Hall on 04/14/2022

Latitude: 40°00'00" — SURFACE HOLE 10,213' — Latitude: 40°05'00"

BOTTOM HOLE 6,170'

SURFACE HOLE 2,614'

Longitude: 80°37'30"

BOTTOM HOLE 12,789'

Longitude: 80°40'00"

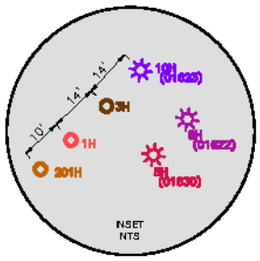
JACKSON SURVEYING INC.
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

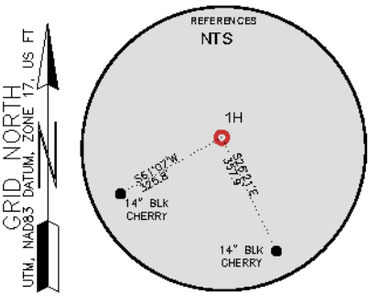
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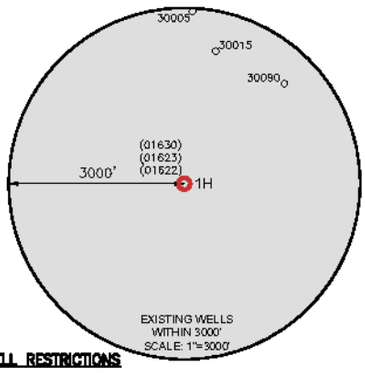
SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,427,015.781 EASTING: 528,901.161
LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,426,977.610 EASTING: 528,684.774
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,433,156.239 EASTING: 526,552.380

SHL

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 19°09'26" W	1,046.62'	SHL TO LANDMARK	FD. FENCE CORNER
L2	N 59°33'42" W	1,277.75'	SHL TO LANDMARK	FD. FENCE CORNER
LINE	BEARING	DISTANCE	CURVE LENGTH	DESCRIPTION
L3	S 79°59'46" W	720.89'	1,534.75'	SHL TO LP







BHL

WELL RESTRICTIONS

1. NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
2. NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
3. NO WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
4. NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
6. NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

NOTES ON SURVEY

1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

2000 0 2000
GRAPHIC SCALE IN FEET

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 708

COMPANY: SWN Production Company, LLC — SWN Production Company™

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

OPERATOR'S WELL #: DAVID REINBEAU MSH 1H

API WELL #: 47 (STATE) 051 (COUNTY) (PERMIT)

WELL TYPE: OIL ☐ WASTE DISPOSAL ☐ PRODUCTION ☒ DEEP ☐ GAS ☒ LIQUID INJECTION ☐ STORAGE ☐ SHALLOW ☒

WATERSHED: HOLLIDAYS RUN OF WHEELING CREEK (HUC-10) ELEVATION: 1,250.9'

DISTRICT: UNION COUNTY: MARSHALL QUADRANGLE: MOUNDSVILLE, WV

SURFACE OWNER: SHELLY A. & DAVID W. REINBEAU ACREAGE: ±50.88

OIL & GAS ROYALTY OWNER: SHELLY A. & DAVID W. REINBEAU ACREAGE: ±50.88

DRILL ☒ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☒ PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☐

CONVERT ☐ PLUG & ABANDON ☐ CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY)

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,346 TVD 28,261 TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC
ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

DESIGNATED AGENT: BRITTANY WOODY
ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

LEGEND:
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- LPL LANDING POINT LOCATION
- EXISTING WATER WELL
- EXISTING SPRING
- SURVEYED BOUNDARY
- DRILLING UNIT
- LEASE BOUNDARY
- PROPOSED PATH

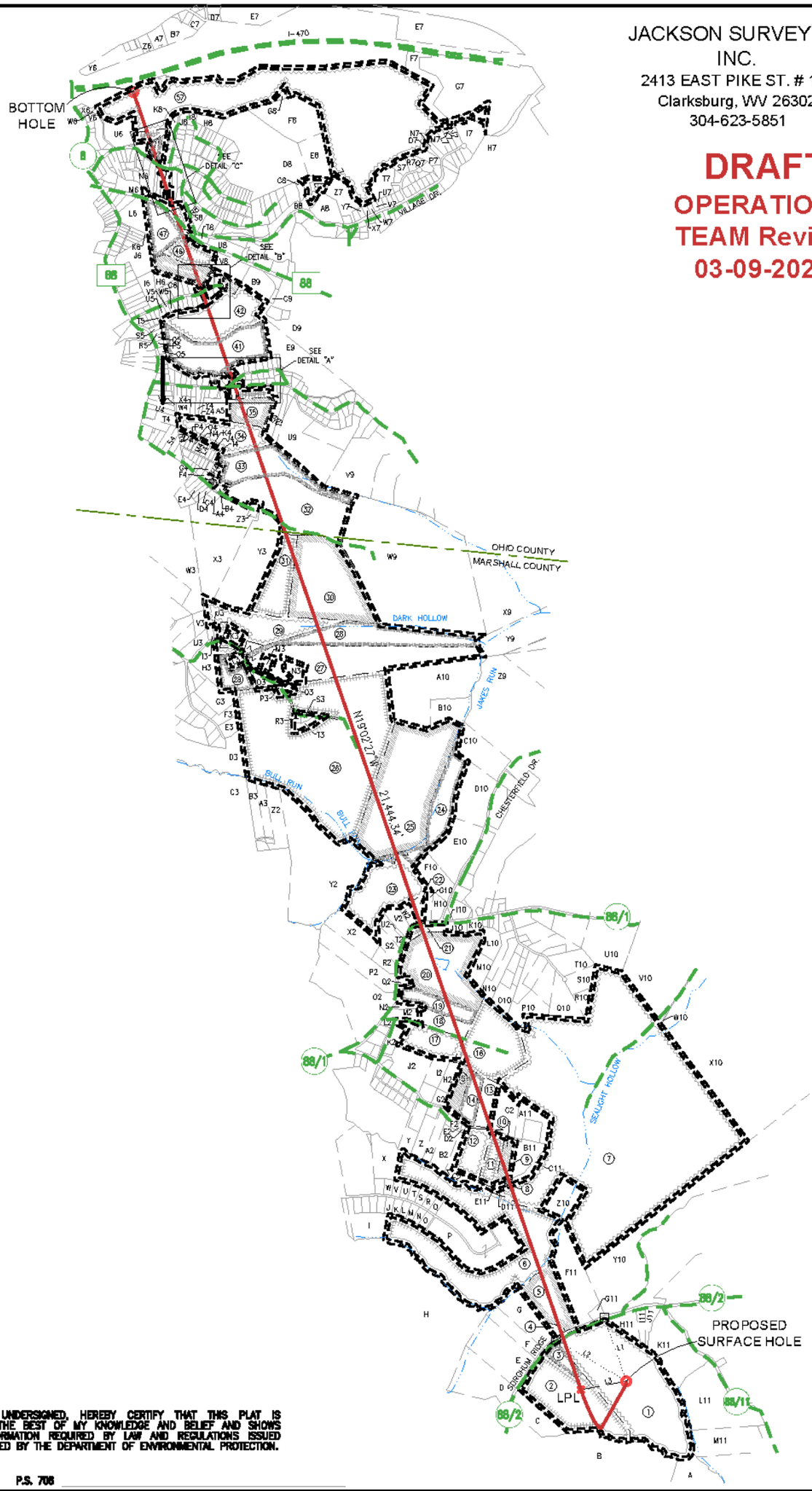
REVISIONS:	DATE: 03-09-2022
	DRAWN BY: N. MANO
	SCALE: 1" = 2000'
	DRAWING NO:
	WELL LOCATION PLAT

2:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:07AM

PROPERTY NUMBER 2501168044
PAD ID 3001156592

JACKSON SURVEYING
INC.
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

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I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

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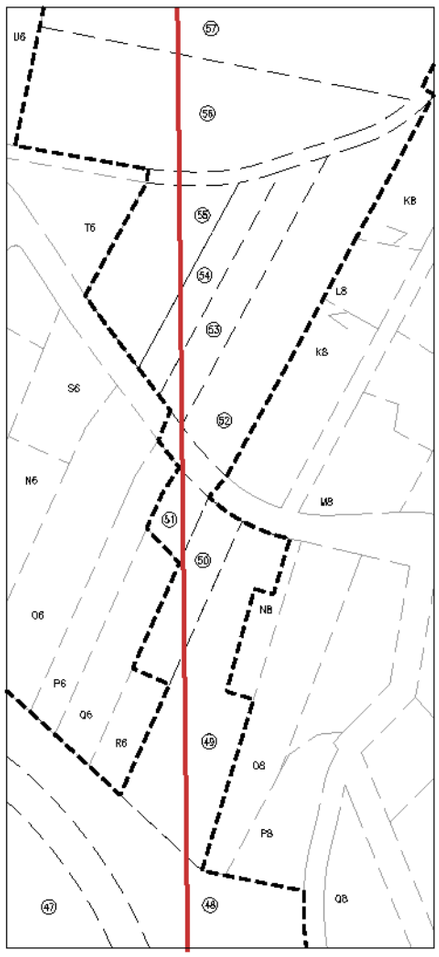
REVISIONS:	COMPANY: SWN Production Company, LLC — SWN Production Company™		
	OPERATOR'S WELL #: DAVID REINBEAU MSH 1H		**DATE:** 03-09-2022
			DRAWN BY: N. MANO
	DISTRICT: UNION	**COUNTY:** MARSHALL	**STATE:** WV
			SCALE: N/A
			DRAWING NO:
			WELL LOCATION PLAT 2

Z:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:07AM

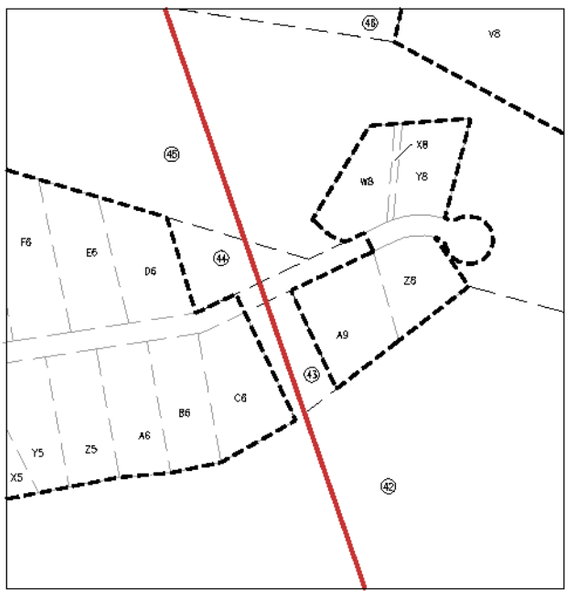
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03-09-2022

DETAIL "C"



DETAIL "B"



DETAIL "A"



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P.S. 708 _____

REVISIONS:	COMPANY: SWN Production Company, LLC / SWN Production Company™		
	OPERATOR'S WELL #:	DAVID REINBEAU MSH 1H	DATE: 03-09-2022
			DRAWN BY: N. MANO
	DISTRICT: UNION	COUNTY: MARSHALL	STATE: WV
			SCALE: N/A
			DRAWING NO:
			WELL LOCATION PLAT 3

Z:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:08AM

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OPERATIONS TEAM Review
03-09-2022

WELL BORE TRACTS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	REINBEAU SHELLY A & DAVID W (S/R)	13-8-29
TRACT	SURFACE OWNER (S)	TAX PARCEL
2	REINBEAU SHELLY A & DAVID W (S)	13-8-27
3	BOWMAN MICHAEL ET UX (S)	13-8-28
4	ALEXANDER LORRAINE (S)	13-7-20
5	ALEXANDER LORRAINE (S)	13-7-18.1
6	WARD CYNTHIA J & DALE P (S)	13-4-23.6
7	COULLING LOUISE S ET AL (S)	13-3-3
8	WALTON EARL RICHARD JR & BRANDICE C (S)	13-4-22.23
9	WALTON EARL RICHARD JR & BRANDICE C (S)	13-4-22.22
10	WALTON EARL RICHARD JR & BRANDICE C (S)	13-4-22.20
11	BRINKMEIER BRUCE & TAMARA (S)	13-4-22.14
12	HOFFMASTER KEVIN & CRYSTAL (S)	13-4-22.27
13	HILL CAROLYNN & FORDYCE BRIAN W (S)	13-4-22.8
14	MANNING JOHN B & KIMBERLY R (S)	13-4-22.13
15	GAMES FRED & MARY V (S)	13-4-22.17
16	MCGUIRE PHILIP C (S)	13-4-21.4
17	MCGUIRE PHILIP C (S)	13-4-21.9
18	GARVIN CORRINE A EST (S)	13-2-101
19	GARVIN CORRINE A EST (S)	13-2-100
20	GARVIN CORRINE A EST (S)	13-2-98
21	GARVIN DOROTHY MAE EST (S)	13-2-81
22	ROMINE WANDA KAY (S)	13-2-77
23	GARVIN CORRINE A EST (S)	13-2-68
24	GARVIN CORRINE A EST (S)	13-2-38
25	POLLACK RICHARD J ET UX (S)	13-2-38.1
26	ROGERSON GEORGE C EST (S)	13-2-39
27	SEIDLER E DALE JR (S)	13-2-14.9
28	SEIDLER PATRICIA L IRREVOCABLE TRUST (S)	13-2-14.7
29	SHIVELY JOYCE (S)	13-2-14.6
30	WOLEN JOHN & MICHELLE (S)	13-2-102.3
31	FLANIGAN JAMES JR & MELISSA S (S)	p/o 13-2-102
32	RAHBAR AHMAD CREDIT SHELTER TRUST (S)	13-2-102
33	ANDREWS JANET M TRUSTEE (S)	1-RB2-32
34	SCHMIDT THOMAS (S)	1-RB2-28
35	GARVIN D CRAIG & EYDIE M (S)	1-RB2M-54.2
36	GARVIN DALE C & EYDIE (S)	1-RB2M-54.1
37	GARVIN D CRAIG & EYDIE M (S)	1-RB2M-27.1
38	JORDAN TYLER A (S)	1-RB2M-21
39	MANNING ASHLEY A ELDER CHARLOTTE A (S)	1-RB2M-3
40	ORR NANCY J - TOD (S)	1-RB2M-4
41	CONRAD JOSHUA D & TRISHA J (S)	1-RB2-27.3
42	CONRAD JOSHUA D & TRISHA J (S)	1-RB2-24
43	PAVLIC CHRISTOPHER S (S)	1-RB2G-57
44	HELMICK STEVEN S & BETSY J (S)	1-RB2G-55
45	WOODVIEW LLC (S)	1-RB2-14
46	WOODVIEW LLC (S)	1-RB2-14.2
47	WOODVIEW LLC (S)	1-RB2-14.1
48	VILLAGE OF BETHLEHEM (S)	1-RB2C-83
49	HAUGHT JONATHAN L & HAUGHT WILLIAM C (S)	1-RB2C-91
50	DONAHUE ANDREW J & POLA V (S)	1-RB2C-90.1
51	HAMRICK JUSTIN D & MCMURRAY KELLY L (S)	1-RB2C-89
52	CUCHTA BEAU (S)	1-RB2C-100
53	ROGERS STEPHEN J (S)	1-RB2C-99
54	MIRANDY TIMOTHY D (S)	1-RB2C-98
55	WHITE DENISE L (S)	1-RB2C-97
56	TAYLOR JOSEPH WILLIAM (S)	1-RB2C-95
57	WHEELING PROPERTIES CO ADDI (S)	1-RB2-20

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	MCCOMBS JOHN A SR, THOMAS E & BETH	13-8-11
B	MCCOMBS JOHN A SR, THOMAS E & BETH	13-8-26
C	REINBEAU RONALD W & FRIEDA A - LIFE	13-7-22.2
D	MCCOMBS JOHN A SR & MARILYN S	13-7-22.1
E	REINBEAU DAVID W & SHELLEY A	13-7-22.3
F	REINBEAU DAVID W & SHELLEY A	13-7-21.1
G	BOWMAN MICHAEL J & CONSTANCE G	13-7-21
H	BOARD OF EDUCATION	13-7-17
I	BLANEY TIMOTHY O ET UX	13-4-24.5
J	WARD CYNTHIA J	13-4-23.16
K	SMITH JOANN H	13-4-23.2
L	DUNCAN ELMER E & SUSAN L	13-4-23.1
M	STAN TYLER P & CASEY K	13-4-23.5
N	OSER FREDERICK P & MALLORY A	13-4-23.10
O	OSER FREDERICK P & MALLORY A	13-4-23.15
P	BLANEY FARMS LLC	13-4-23
Q	WARD CYNTHIA J	13-4-23.14
R	BLANEY RODNEY A	13-4-23.13
S	SZELIGO RICHARD & ASHLEY	13-4-23.8
T	SZELIGO RICHARD L JR & ASHLEY E	13-4-23.11
U	ETZEL JAMIE P & ANTHONY EVICK II	13-4-23.12
V	ETZEL JAMIE P & ANTHONY EVICK II	13-4-23.7
W	FITZPATRICK BRYAN A & HEIDI A	13-4-23.4
X	WARD CYNTHIA J & DALE P	13-4-24
Y	ORLOFSKE SEAN A & JENNIFER L	13-4-22.11
Z	GAMES FREDERICK LOUIS II ET UX	13-4-22.10
A2	GARRISON ASHLEY	13-4-22.12
B2	FISHER DEBRA ANN GAMES & GALEN E	13-4-22.9
C2	WEST VALLIE JAMES ET AL	13-4-22
D2	FISHER GALEN E & DEBRA A	13-4-22.26
E2	FISHER DEBRA ANN GAMES & GALEN E	13-4-22.5
F2	FISHER DEBRA ANN GAMES & GALEN E	13-4-22.3
G2	GAMES MARY VIRGINIA - TOD	13-4-22.2
H2	GAMES MARY VIRGINIA - TOD	13-4-22.25
I2	WEST RICHARD D JR	13-4-22.24
J2	FISHER GALEN E & DEBRA A	13-4-21
K2	HILL CHARLES S ET UX	13-4-21.7
L2	WALTERS SAMANTHA J & RICHARDS JENNIFER L	13-4-21.1
M2	GARVIN CORRINE A EST	13-2-101.2
N2	GARVIN CORRINE A EST	13-2-101.1
O2	GARVIN CORRINE A EST	13-4-20
P2	GARVIN CORRINE A EST	13-2-70
Q2	GARVIN CORRINE A EST	13-2-99
R2	GARVIN CORRINE A EST	13-2-71
S2	MUSTACHIO EMILY A & GARVIN GRANT W	13-2-72
T2	GARVIN JOHN A & KAREN L	13-2-73
U2	GARVIN JOHN ARTHUR & KAREN L	13-2-74
V2	GARVIN JOHN ARTHUR & KAREN L	13-2-75
W2	BOWSER MARY ANNE	13-2-76
X2	GARVIN CORRINE A EST	13-2-69
Y2	ST MYERS MICHAEL W	13-2-67
Z2	MEGALE GARNET JANE & VICKIE WALTERS	13-2-66.1
A3	WALTERS VICKIE	13-2-65
B3	GREEN JAMES L	13-2-64
C3	WALTERS THOMAS C & KATRINA A	13-2-41.7
D3	TUCKER NATHAN JOSEPH & LINDSEY RENEE	13-2-42.5
E3	COOLEY CHARLES E & CAROL J	13-2-42
F3	RICHTER FAMILY TRUST	13-2-42.17
G3	BLATT JAMES E ET UX	13-2-42.7
H3	MAGERS GARY E ET UX	13-2-2.2
I3	SHIVELY JOYCE	13-2-14.1
J3	SHIVELY JOYCE	13-2-14.5
K3	BRADCOVICH JOSEPH EARL EST	13-2-14.4
L3	NUGENT LINDA S ET AL	13-2-14.8
M3	SEIDLER NETTIE	13-2-14
N3	SEIDLER E DALE JR ET UX	13-2-14.3
O3	SEIDLER TIMOTHY I ET UX	13-2-14.2
P3	COFFIELD RONALD J	13-2-39.5
Q3	COFFIELD RONALD J	13-2-39.3
R3	SCARBRO JENNI M	13-2-39.2
S3	ROGERSON WAYNE R	13-2-39.1
T3	ROGERSON WAYNE R	13-2-39.4
U3	PYSH WAYNE ET UX	13-2-13.6
V3	PYSH WAYNE ET UX	13-2-13.8
W3	PASCOLI KENT A	13-2-13
X3	TURNER JASON & TIFFANY	13-2-102.1
Y3	BANE RYAN A & JULIE A	13-2-102.2
Z3	BRAUNLICH EARL FRITZ & JAMIE LYNN	13-2-104
A4	WEISNER RANDY P	1-RB2-33.3
B4	PINTER EUGENE M & JOAN	1-RB2-33.2
C4	PRASCIK LORI JEAN	1-RB2Q-33
D4	MULARCIK BRYAN & TIFFANY	1-RB2Q-32
E4	SHREVES HOLLIE L	1-RB2Q-31.1

REVISIONS:	COMPANY: SWN Production Company, LLC / SWN Production Company™	
	OPERATOR'S WELL #: DAVID REINBEAU MSH 1H	DATE: 03-09-2022
	DISTRICT: UNION / COUNTY: MARSHALL / STATE: WV	DRAWN BY: N. MANO SCALE: N/A DRAWING NO: WELL LOCATION PLAT 4

2:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:08AM

JACKSON SURVEYING
INC.
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

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OPERATIONS
TEAM Review
03-09-2022

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
F4	KNORR WILLIAM JOHN & KNORR ELIZABETH VIRGINIA	1 RB2L 81.1
G4	NEIMAN CHARLES AND MARK	1-RB2L-81
H4	ANDREWS JEREMY	1-RB2-32.1
I4	PAULEY SCOTT F & ECHEMANN CHRISTINA	1-RB2L-74
J4	YOHO PATRICK A	1 RB2L 73
K4	BECK SANDRA M	1-RB2L-72
L4	TROUTEN JENNA MICHELLE	1-RB2L-71
M4	STINGLE KEVIN W; GRAY FLORA L (RT TO OCC)	1 RB2L 70
N4	WEST VIRGINIA HOUSING DEV FUND	1-RB2L-69
O4	METZ BARBARA JANE	1-RB2L-69.1
P4	METZ BARBARA J	1-RB2L-68
Q4	LLOYD JENNIFER L & DAVID A	1-RB2L-67
R4	VILLAGE OF BETHLEHEM	1-RB2L-66
S4	SCHNUPP JAMES P & M A	1-RB2L-88
T4	PICKETT VALERIE & GARY B	1 RB2L 64
U4	MARTIN KIMBERLEE GEORGETTE	1-RB2L-62
V4	ARMSTRONG SHELLEE JEAN	1-RB2L-57
W4	SCHMIDT THOMAS L & L E	1-RB2L-55
X4	CLEGG L	1-RB2L-54
Y4	TOWNSEND CARL A	1-RB2L-50
Z4	SNYDER CHRISTINE LEE	1-RB2L-50.1
A5	GARVIN DALE C & E	1 RB2L 49.1
B5	GARVIN DALE CRAIG & EYDIE	1-RB2L-49.3
C5	CHERRY MICHAEL D	1-RB2M-1
D5	CHERRY MICHAEL D	1-RB2M-2
E5	CKJ RENTALS	1-RB2L-49.2
F5	HUTCHISON N R & J (LIFE EST) CHURCH BETH H	1-RB2L-47.1
G5	HUTCHISON N R & J (LIFE EST) CHURCH BETH H	1-RB2L-47
H5	HOWORTH HELENA A	1 RB2L 46
I5	SCOTT STEPHEN A & LINDSEY A	1-RB2L-45
J5	PAULUS ANDREW I & S A YAHN	1-RB2L-45.2
K5	BLAZIER HOWARD T JR & S L	1-RB2L-45.1
L5	CLEGG AUBREI L	1-RB2L-112
M5	GARY MARK C & P S	1-RB2L-37
N5	BLAZIER BRIAN T	1-RB2G-78
O5	MURAD CHRIS R & TRACY	1 RB2G 77
P5	DESANTIS JAMES P & JANE V & DESANTIS MICHAEL V	1-RB2G-76
Q5	VILLAGE OF BETHLEHEM	1-RB2G-75
R5	KONDRAD SCOTT F & DEVYN S	1-RB2G-74
S5	CUNNINGHAM WAYNE D & G K	1-RB2G-73
T5	BLACK SUSAN O	1-RB2G-67
U5	FLETCHER TIM L SR	1-RB2G-66
V5	BLACK SHAUN M	1 RB2G 65
W5	BLACK SHAUN M	1-RB2G-64
X5	COM PROPERTIES LLC	1-RB2G-63
Y5	JASKO AARON M	1-RB2G-62
Z5	HEUSEL LOUISE V & MATTHEW R	1-RB2G-61
A6	ALBERT JANE LEW	1-RB2G-60
B6	WEISNER GARY	1-RB2G-59
C6	SOMMERS BRUCE A & ANGELA R	1 RB2G 58
D6	MAZESKA CASSANDRA	1-RB2G-54
E6	CZYZEWSKI STELLA J (LIFE) WEISNER GARY A	1-RB2G-53
F6	WILBURN BRANDON M & WILBURN SHELLEY J	1-RB2G-52
G6	MARVIN JACK E	1-RB2G-51
H6	GUSSLER TROY R & SUSANNA E	1-RB2G-82
I6	WEISNER GEORGE A & JEAN - TOD	1-RB2G-46
J6	BECKETT G R & B L (LC SLRS)	1 RB2G 35.1
K6	BETHLEHEM REALTY INC	1-RB2C-67.1
L6	GRACE EVANGELICAL TRUSTEES C/O SPENCE TIMOTHY	1-RB2C-67
M6	GOMPERS THOMAS L	1-RB2C-82
N6	ANDREWS BRETT A & CHRISTINE A	1-RB2C-85.2
O6	MCCORMICK SCOTT A & CAPRICE M	1-RB2C-86
P6	HAMILTON KAREN S & HAMILTON JEFFREY D ESTATE	1-RB2C-88
Q6	HAMRICK JUSTIN E & MCMURRAY KELLY L	1 RB2C 89.1
R6	DONAHUE ANDREW J & POLA V	1-RB2C-90
S6	MEREDITH CHARLES R & P L	1-RB2C-85
T6	SCHRIMP MARTHA A	1-RB2C-96
U6	BOARD OF EDUCATION	1-RB2C-94
V6	BETHLEHEM UNITED PRESBYTERIAN CHURCH TRUSTEES	1 RB2C 36
W6	PRESBYTERY OF WHEELING (SYNOD OF WV)	1-RB1Q-36
X6	SCHEHL MICHAEL A & CHRISTINA L	1 RB1Q 39
Y6	DIERINGER OLIVE JANE	1-RB1-17
Z6	BANDI MARY DEE	1-RB1Q-107
A7	SASEEN MARK S & ALLISON M	1-RB1-18.1
B7	WHITE JONATHAN W & HEATHER	1-RB1-18

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
C7	WEESE JEFFREY	1-RB1Q-125
D7	RAPP DAVID A & TAMMY L	1-RB1Q-127
E7	WHEELING PROPERTIES	10-W80-1
F7	CITY OF WHEELING	10-W80-1.3
G7	CITY OF WHEELING	10-W80-1.1
H7	WILSON B E & S K	10-W80-1.4
I7	SWIGER JUSTIN A & STEPHANIE M	1-RB3-14
J7	MORRIS JAY R & TINA M	1-RB3-13
K7	RAMSEY BRYAN S & MICHELE A	1-RB3-7
L7	BAYHA DEBORAH S	1-RB3-6
M7	RAMOS SCOTT B & RAMOS AMY D	1-RB3-5
N7	BAKER MARK J & DAYNA M	1-RB3-4.1
O7	WARMAN JAMES J & CARRIE REDD	1-RB3-4
P7	WARMAN JAMES J & CARRIE REDD	1-RB3-3
Q7	CORNELL CHARLES D & LINDA J	1-RB2J-152
R7	POLSINELLI FRANK & POLSINELLI KIMBERLY A - TOD	1-RB2J-151
S7	BREIDING DORENE	1-RB2J-149
T7	CHAMBERLAIN DONALD	1-RB2-20.4
U7	TURNER GEORGE E JR & PAULETTE	1-RB2J-134
V7	SITKO PAUL M JR & EDWINA	1-RB2J-133
W7	KOWALSKI CHESTER J TAMA A	1-RB2J-132
X7	HUMPHRIES ELI THOMAS & BREANNA NICOLE	1-RB2J-131
Y7	BAUERLE RALPH & VICKI L	1-RB2J-20.8
Z7	GHAPHERY BRIAN A; GHAPHERY CHRISTINA W	1-RB2J-20.5
A8	NERNBERG A RICHARD TRUST 1/2 INT & NERNBERG SUSAN L 1/2 INT	1-RB2J-146
B8	VILLAGE OF BETHLEHEM	1-RB2-17.4
C8	JOSEPH MICHAEL A & V J	1-RB2D-35
D8	BLEIFUS LEO A JR	1-RB2-18.1
E8	WHEELING PROPERTIES CO ADDI	1-RB2-18
F8	TAYLOR JOSEPH WILLIAM	1-RB2-19
G8	TAYLOR JOSEPH WILLIAM	1-RB1-20
H8	BLEIFUS LEO	1-RB2C-109
I8	BLEIFUS LEO A JR	1-RB2C-108.1
J8	SULEK DONALD L & L	1-RB2C-107
K8	KLOSS ROBERT A & DONNA J	1-RB2C-101
L8	BIRCH JAMES J & ELIZABETH J	1-RB2C-101.1
M8	MITEVSKI-MUSAP VERA	1-RB2C-102
N8	KLUSKEY ROBERT & BRENDA	1-RB2C-91.1
O8	KLENOWSKI P M & HAIGH J L; KLENOWSKI P E & J L - RTOCC	1-RB2C-92
P8	BONAR BRADLEY C	1-RB2C-142
Q8	GREEN FORREST M	1-RB2C-143
R8	BREIDING BARBARA; BREIDING D W WALKER K L; BREIDING K M	1-RB2C-143.1
S8	HALLER MICHELLE M	1-RB2C-143.2
T8	DLESK ROSALIE J	1-RB2-21.6
U8	DLESK ROSALIE J	1-RB2-21.5
V8	PANDELOS ERNEST M	1-RB2-21
W8	RCC PROPERTIES	1-RB2G-79
X8	PARSONS RONALD E & D M - TOD	1-RB2G-79.1
Y8	PARSONS RONALD E & D M - TOD	1-RB2G-80
Z8	MUSILLI A A JR & C A	1-RB2G-81
A9	GOLD JONATHAN M & C J	1-RB2G-56
B9	CONRAD JOSHUA D & TRISHA J	1-RB2-34.1
C9	DLESK ROSALIE J	1-RB2-34.4
D9	GALE JAMES ASSET MGMT LLC	1-RB2-24.1
E9	STRAUB JOSEPH H EST MARGARET STRAUB	1-RB2-31
F9	LANDON HELEN M	1-RB2M-12
G9	CUSTER WAYNE H	1-RB2M-11
H9	WARDLE HARVEY A & JANET C	1-RB2M-10
I9	WERNER ANTHONY I & JODY M	1-RB2M-9
J9	HABAK JOHN M & R S	1-RB2M-7
K9	THORN LOGAN & ALEXANDRA	1-RB2M-6
L9	TRABERT PAMELA S	1-RB2M-5
M9	WESOLOWSKI JEFFREY J & KACEY L	1-RB2M-20
N9	AUTEN THOMAS HARRISON JR	1-RB2M-22
O9	MELKO BROCK T & BAKER KARLEY R	1-RB2M-23
P9	NEWMAN BILLIE SUE	1-RB2M-24
Q9	MATHIEU JENNIFER L	1-RB2M-24.1
R9	RICHTER ELWOOD F JR & CHRISTINE A	1-RB2M-54.3
S9	RICHTER ELWOOD F JR & C A	1-RB2M-56.1
T9	RICHTER ELWOOD F JR	1-RB2M-56
U9	ASBURY RYAN & ANNE	1-RB2-31.5
V9	POTTS JOHN W & ROSE A	1-RB2-31.2
W9	BRAUNLICH EARL FRITZ & JAMIE LYNN	13-2-102.4
X9	RENFORTH GEORGE III	13-2-16.2
Y9	PERONI CONSTRUCTION INC	10-W95-112
Z9	LONG RICHARD E ET UX	13-2-35
A10	LAUTER FRANK ET AL	13-2-36
B10	LONG RICHARD E ET UX	13-2-37
C10	LONG RICHARD E ET UX	13-2-32
D10	WALKER MICHAEL A	13-2-31

REVISIONS:	COMPANY: SWN Production Company, LLC / SWN Production Company™		
	OPERATOR'S WELL #: DAVID REINBEAU MSH 1H		**DATE:** 03-09-2022
	DISTRICT: UNION	**COUNTY:** MARSHALL	**STATE:** WV
			DRAWN BY: N. MANO
			SCALE: N/A
			DRAWING NO: WELL LOCATION PLAT 5

Z:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:08AM

JACKSON SURVEYING
INC.
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

DRAFT
OPERATIONS
TEAM Review
03-09-2022

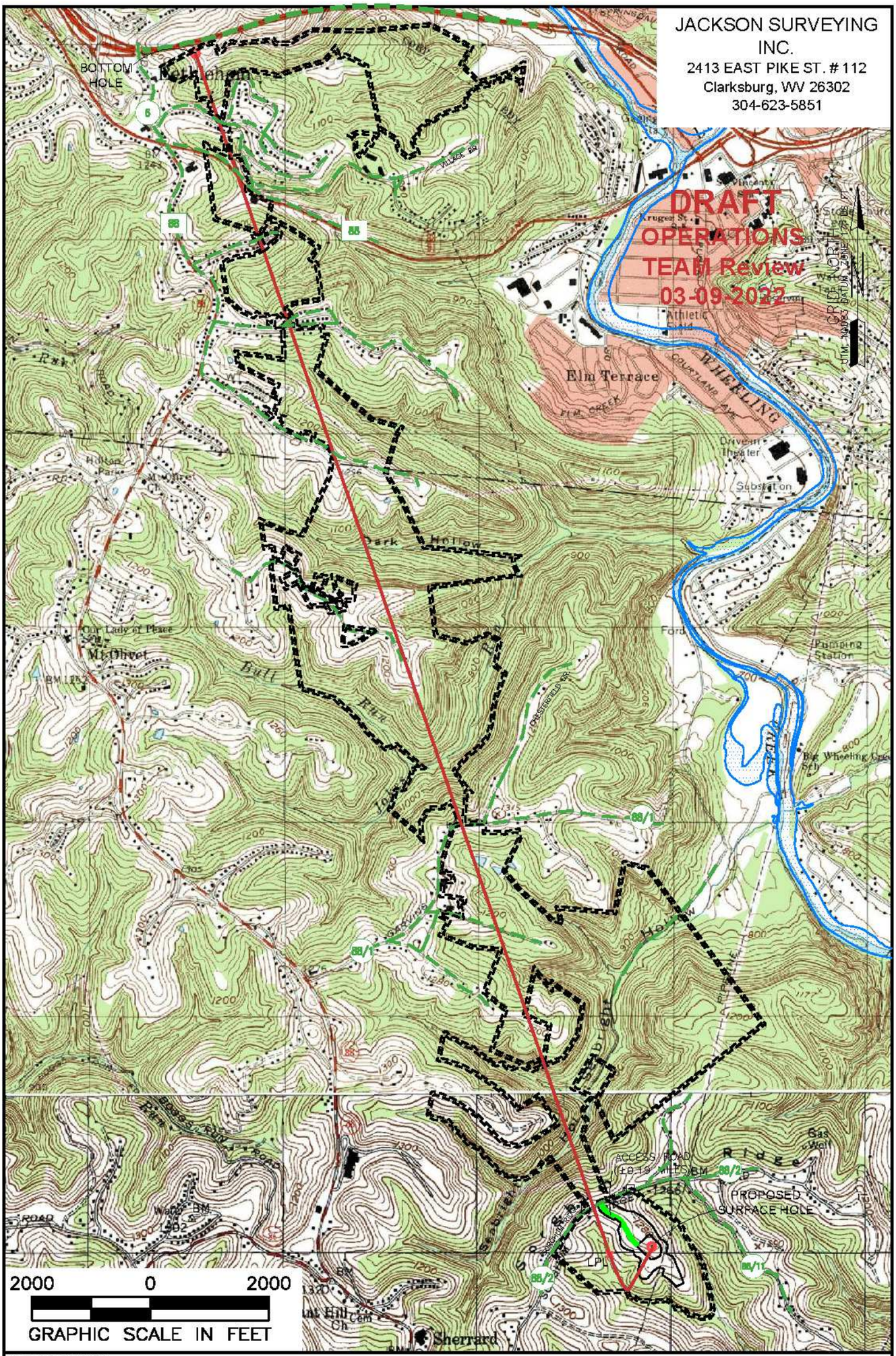
ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
C10	BURKE RICHARD & FITZPATRICK DEBRA	13 2 31.1
F10	BURKE RICHARD & FITZPATRICK DEBRA	13-2-31.2
G10	MILLER GEORGE W ET AL	13-2-79
H10	GARVIN JOHN A & KAREN L	13 2 78
I10	RANSOM DAVID W & DONNA K	13-2-80
J10	GARVIN JOHN	13-2-81.2
K10	MERCER RICK	13-2-81.1
L10	GARVIN LEILA N & DONALD A	13-2-96
M10	GARVIN CORRINE A EST	13 2 97
N10	DAY JOHN U EST & CHRISTINE MERCER	13-2-95
O10	YOUNGER DONALD A & MOORE TERESA R	13-2-94
P10	WIEDEBUSCH ROBERT & CINDY	13 2 93.1
Q10	WIEDEBUSCH ROBERT & CINDY	13-2-91
R10	GAUGHAN MICHAEL WM	13-2-90.1
S10	GAUGHAN MICHAEL WILLIAM ET UX	13-2-90
T10	ABEL JAMES R & SHERI L	13-2-89
U10	ISER RONALD J ET UX	13 2 88
V10	WHITE HORSE FARM LLC	13-3-2
W10	COULLING LOUISE S ET AL	13-3-5.3
X10	COULLING LOUISE S	13 3 5
Y10	BONACCI BRIAN F	13-3-5.1
Z10	OHIO COUNTY COAL RESOURCES INC	13-3-3.1
A11	GEHO STANLEY R & BETH B	13 4 22.16
B11	GAMES FRED & MARY V	13-4-22.18
C11	GAMES FRED & MARY V	13-4-22.19
D11	WALTON EARL RICHARD JR & BRANDICE C	13-4-22.21
E11	BRINKMEIER BRUCE & TAMARA	13-4-22.15
F11	ALEXANDER LORRAINE	13 7 18
G11	SAMPSON EDITH VIRGINIA EST	13-7-19
H11	NARRISH KEVIN	13-8-30
I11	SOUTH CHRISTOPHER C	13 8 31
J11	KOSTELECSKY JOSEPH J JR & CAROLYN - TOD	13-8-31.1
K11	FUNK CHARLES D ET UX	13-8-32
L11	LOY EUGENE EST ET AL	13-8-1
M11	LIBERTY JOHN ET UX	13-8-10

REVISIONS:	COMPANY: SWN Production Company, LLC — SWN Production Company™		
	OPERATOR'S WELL #: DAVID REINBEAU MSH 1H		**DATE:** 03-09-2022
	DISTRICT: UNION	**COUNTY:** MARSHALL	**STATE:** WV
			DRAWN BY: N. MANO
			SCALE: N/A
			DRAWING NO:
			WELL LOCATION PLAT 6

Z:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:09AM

JACKSON SURVEYING INC.
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

DRAFT
OPERATIONS TEAM Review
03-09-2022



NOTES ON SURVEY

1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

LEGEND:

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- LPL LANDING POINT LOCATION
- FLOOD PLAIN
- ACCESS ROAD
- PUBLIC ROAD
- ACCESS ROAD TO PREV. SITE
- LEASE BOUNDARY
- PROPOSED PATH

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	WELL (FARM) NAME: DAVID REINBEAU MSH	WELL # 1H
ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200 MORGANTOWN, WV 26508	COUNTY – CODE MARSHALL – 051	DISTRICT; UNION
SURFACE OWNER: SHELLY A. & DAVID W. REINBEAU	USGS 7 1/2 QUADRANGLE MAP NAME MOUNDSVILLE, WV	

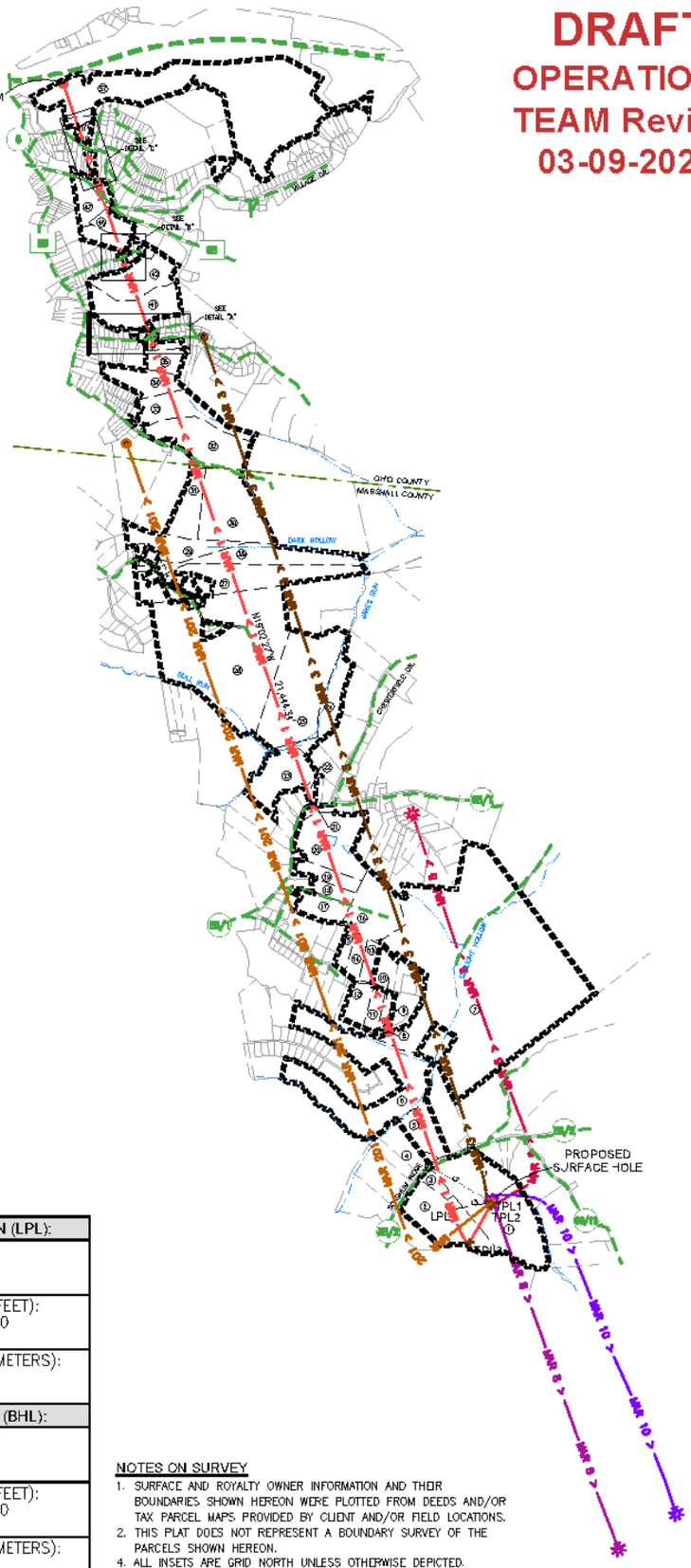
2:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:09AM

PROPERTY NUMBER 2501188044
PAD ID 3001156582

JACKSON SURVEYING
INC.
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

DRAFT
OPERATIONS
TEAM Review
03-09-2022

GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT

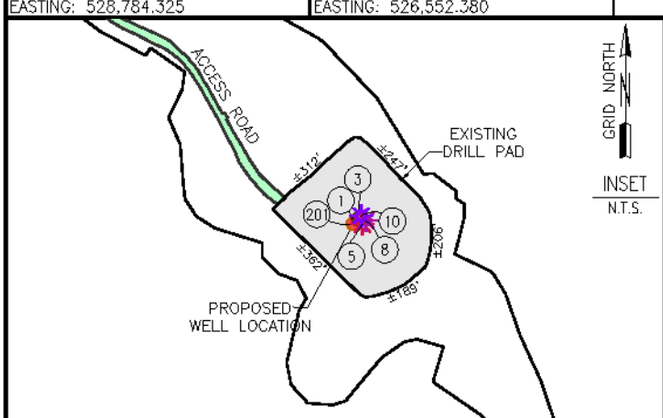


3000 0 3000
GRAPHIC SCALE IN FEET

SURFACE HOLE LOCATION (SHL):
GEOGRAPHIC (NAD83): LATITUDE: 39.992825° LONGITUDE: -80.661455°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,524,300.940 EASTING: 1,735,236.560
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,427,015.781 EASTING: 528,901.161
TURNING POINT LOCATION-1 (TP1):
GEOGRAPHIC (NAD83): LATITUDE: 39.992772° LONGITUDE: -80.661443°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,524,281.630 EASTING: 1,735,239.970
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,427,009.895 EASTING: 528,902.201

TURNING POINT LOCATION-2 (TP2):	LANDING POINT LOCATION (LPL):
GEOGRAPHIC (NAD83): LATITUDE: 39.992641° LONGITUDE: -80.661497°	GEOGRAPHIC (NAD83): LATITUDE: 39.992489° LONGITUDE: -80.663991°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,524,233.890 EASTING: 1,735,225.070	UTM (NAD83, ZONE 17, FEET): NORTHING: 14,524,175.710 EASTING: 1,734,526.630
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,426,995.344 EASTING: 528,897.659	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,426,977.610 EASTING: 528,684.774
TURNING POINT LOCATION-3 (TP3):	**BOTTOM HOLE LOCATION (BHL):**
GEOGRAPHIC (NAD83): LATITUDE: 39.990851° LONGITUDE: -80.662833°	GEOGRAPHIC (NAD83): LATITUDE: 40.048226° LONGITUDE: -80.688717°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,523,580.410 EASTING: 1,734,853.240	UTM (NAD83, ZONE 17, FEET): NORTHING: 14,544,446.760 EASTING: 1,727,530.600
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,426,796.163 EASTING: 528,784.325	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,433,156.239 EASTING: 526,552.380

NOTES ON SURVEY
1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.



NOTE: ANY UTILITIES OR IMPROVEMENTS SHOWN ON THIS PLAT ARE FROM REASONABLE VISUAL OBSERVATIONS. NO UTILITY COMPANIES WERE CONTACTED FOR UTILITY LINE LOCATIONS.

LEGEND:
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- ABANDONED WELL
- PLUGGED & ABANDONED WELL
- LPL LANDING POINT LOCATION
- DRILLING UNIT
- LEASE BOUNDARY
- HARDLINE BOUNDARY
- UPP 2 > UPPER POINT PLEASANT PATH
- MAR 2 > MARCELLUS PATH

COMPANY: SWN Production Company, LLC
SWN Production Company™

OPERATOR'S WELL #: DAVID REINBEAU MSH 1H

DISTRICT:	COUNTY:	STATE:
UNION	MARSHALL	WV

SWN PRODUCTION COMPANY, LLC
SURFACE HOLES
1. "DAVID REINBEAU MSH 1H"
3. "DAVID REINBEAU MSH 3H"
5. "DAVID REINBEAU MSH 5H"
8. "DAVID REINBEAU MSH 8H"
10. "DAVID REINBEAU MSH 10H"
201. "DAVID REINBEAU MSH 201H"

REVISIONS:	DATE: 03-09-2022
	DRAWN BY: N. MANO
	SCALE: 1" = 2000'
	DRAWING NO:
	INTERNAL WELL PLAT

PROPERTY NUMBER 2501188044
PAD ID 3001156582

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. David Reinbeau MSH 1H
Well Pad Name: David Reinbeau MSH

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	051-MArsha	07-Union	486-Moundsville
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: David Reinbeau MSH 1H Well Pad Name: David Reinbeau MSH

3) Farm Name/Surface Owner: Shelly A & David W. Reinbeau Public Road Access: Sorghum Ridge Road

4) Elevation, current ground: 1251' Elevation, proposed post-construction: 1251'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Up-Dip well to the North, Target Top TVD- 6313', Target Base TVD- 6364', Anticipated Thickness- 51', Associated Pressure- 4137

8) Proposed Total Vertical Depth: 6346'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 28261'

11) Proposed Horizontal Leg Length: 21444.34'

12) Approximate Fresh Water Strata Depths: 426'

13) Method to Determine Fresh Water Depths: Deepest nearby water well

14) Approximate Saltwater Depths: 883' Salinity Profile

15) Approximate Coal Seam Depths: 765'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes x No x

(a) If Yes, provide Mine Info: Name: Ohio County Mine
Depth: 765'
Seam: Pittsburgh
Owner: American Consolidated Natural Resources

API NO. 47- 051 -
OPERATOR WELL NO. David Reinbeau MSH 1H
Well Pad Name: David Reinbeau MSH

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94#	126'	126'	CTS
Fresh Water	13 3/8"	New	H-40	48#	506'	506'	541 sx/CTS
Coal	See	Interm	Casing				
Intermediate	9 5/8"	New	J-55	36#	2080'	2080'	982 sx/CTS
Production	6"	New	P-110	24.5#	0'	6000'	
Production	5 1/2"	New	P-110 HP	20#	6000'	28261'	Tail 9400sx/ 100' Inside Intermodiate
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.20/30% Excess
Fresh Water	13 3/8"	17.5"	0.380	2730	633	Class A	1.20/30% Excess
Coal	See	Interm	Casing				
Intermediate	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/40% Excess
Production	5 1/2"	8 3/4"-8 1/2"	0.361	14360	10500	Class A	1.19/5% Excess
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

Southwestern Energy Company | Proposed Drilling Program

Well:	DAVID REINBEAU MSH 1	**Re-entry Rig:**	TBD
Field:	NORTH VICTORY FIELD WET	**Prospect:**	Marcellus Shale
County:	MARSHALL	**State:**	WV
SHL:	39.9928 Latitude	-80.6615 Longitude	
BHL:	40.0482 Latitude	-80.6887 Longitude	
KB Elev:	1,277 ft MSL	KB: 26 ft AGL	**GL Elev:** 1,251 ft MSL

No COAL VOID Anticipated

Gas Storage Interval: N/A

PROD TOC Lead @ 2,300 ' MD

PROD TOC Tail @ 5,489 ' MD

TUBULAR DETAIL

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval From	Planned Interval To
Conductor	20	94.0 #	J-55	0 '	126 '
Surface	13.375	48.0 #	H-40	0 '	506 '
Intm/Coal	9.625	36.0 #	J-55	0 '	2,080 '
Production	6	24.5 #	P-110	0 '	6,000 '
Production	5.5	20.0 #	P-110 HP	6,000 '	28,261 '

CEMENT DETAIL

	Sacks	Class	Density
Conductor:	151	A	19.3
Surface:	541	A	15.6
Intermediate:	982	A	15.6-16
Production:	9400	A	14.5-15.0

KOP at 5,589 ' MD

Freshwater Depth - 426 ' TVD
Coal Depth - 765 ' TVD
Saltwater Depth - 883 ' TVD
TVD - 6,346 '
TMD - 28,261 '

TD at 28,261 ' MD
6,086 ' TVD

6,346 ' Target Center

EOB at 6,807 ' MD

SHL Onondaga 6,364 ' TVD

Onondaga 6,104 ' TVD

126 ' to 526 '
Air/Mist

526 ' to 2,100 '
Air/Mist
↓
10.5# Brine Mud

2,100 ' to 5,589 '
Air/Mist
↓
Air
TD at 5,589 '

5,589 ' to 6,807 '
12.5-13.5 ppg

6,807 ' to 28,261 '
12.5-13.9 ppg

Created by: C R Hall on 04/14/2022

Latitude: 40°00'00" — SURFACE HOLE 10,213' — Latitude: 40°05'00" — BOTTOM HOLE 6,170'

SURFACE HOLE 2,614' — Longitude: 80°37'30"

BOTTOM HOLE 12,789' — Longitude: 80°40'00"

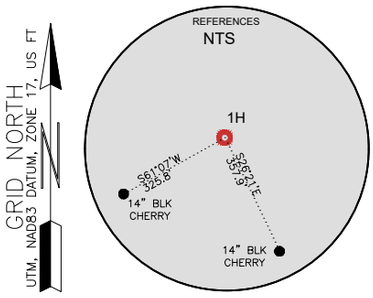
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Clarksburg, WV 26302
304-623-5851

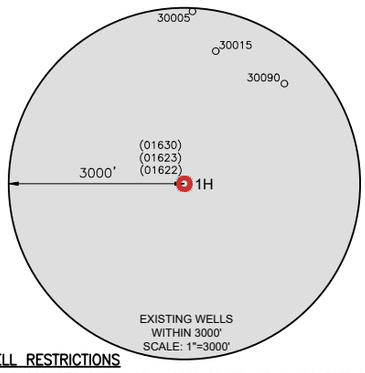
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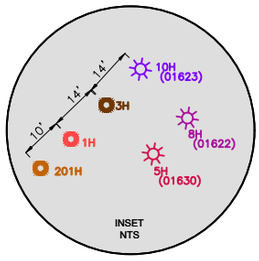
SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,427,015.781 EASTING: 528,901.161
LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,426,977.610 EASTING: 528,684.774
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,433,156.239 EASTING: 526,552.380

SHL

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 19°09'26" W	1,046.62'	SHL TO LANDMARK	FD. FENCE CORNER
L2	N 59°33'42" W	1,277.75'	SHL TO LANDMARK	FD. FENCE CORNER
LINE	BEARING	DISTANCE	CURVE LENGTH	DESCRIPTION
L3	S 79°59'46" W	720.89'	1,534.75'	SHL TO LP







BHL

WELL RESTRICTIONS

1. NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
2. NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
3. NO WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
4. NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
6. NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

NOTES ON SURVEY

1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

2000 0 2000
GRAPHIC SCALE IN FEET

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 708

COMPANY: SWN Production Company, LLC — SWN Production Company™

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

OPERATOR'S WELL #: DAVID REINBEAU MSH 1H

API WELL #: 47 (STATE) 051 (COUNTY) (PERMIT)

WELL TYPE: OIL ☐ WASTE DISPOSAL ☐ PRODUCTION ☒ DEEP ☐ GAS ☒ LIQUID INJECTION ☐ STORAGE ☐ SHALLOW ☒

WATERSHED: HOLLIDAYS RUN OF WHEELING CREEK (HUC-10) ELEVATION: 1,250.9'

DISTRICT: UNION COUNTY: MARSHALL QUADRANGLE: MOUNDSVILLE, WV

SURFACE OWNER: SHELLY A. & DAVID W. REINBEAU ACREAGE: ±50.88

OIL & GAS ROYALTY OWNER: SHELLY A. & DAVID W. REINBEAU ACREAGE: ±50.88

DRILL ☒ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☒ PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☐

CONVERT ☐ PLUG & ABANDON ☐ CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY)

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,346 TVD 28,261 TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC
ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

DESIGNATED AGENT: BRITTANY WOODY
ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

LEGEND:
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- LPL LANDING POINT LOCATION
- (W) EXISTING WATER WELL
- (S) EXISTING SPRING
- SURVEYED BOUNDARY
- DRILLING UNIT
- LEASE BOUNDARY
- PROPOSED PATH

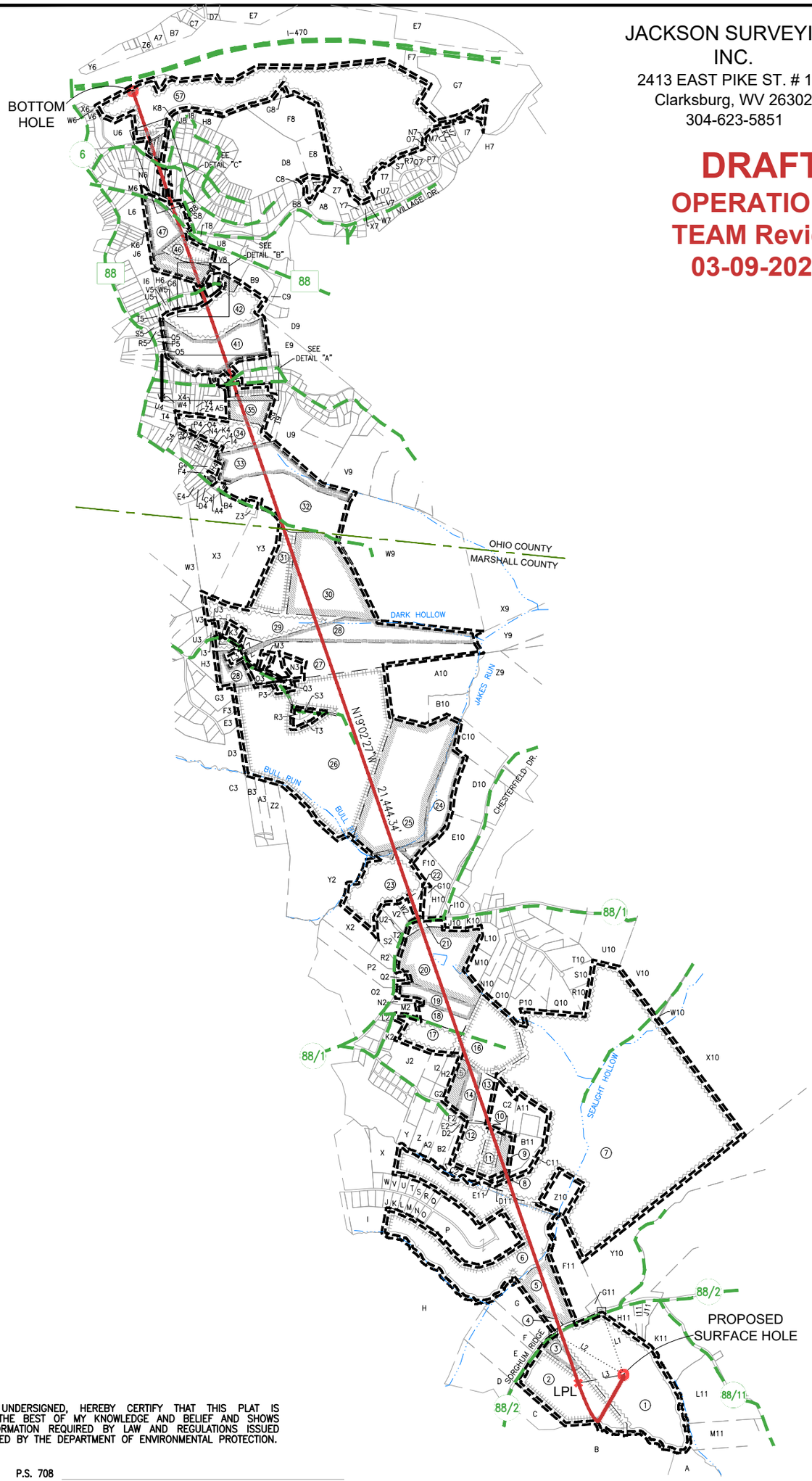
REVISIONS:	DATE: 03-09-2022
	DRAWN BY: N. MANO
	SCALE: 1" = 2000'
	DRAWING NO:
	WELL LOCATION PLAT

Z:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:07AM

PROPERTY NUMBER 2501166044
PAD ID 3001156592

JACKSON SURVEYING INC.
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

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OPERATIONS TEAM Review
03-09-2022



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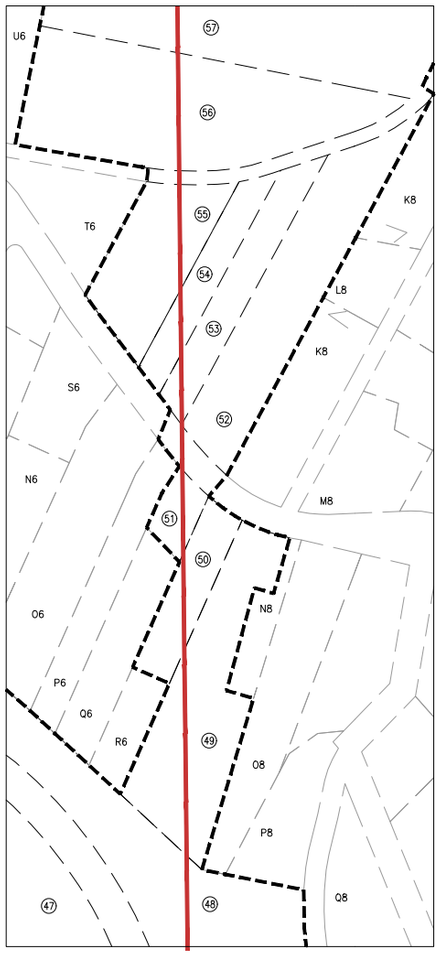
REVISIONS:	COMPANY: SWN Production Company, LLC — SWN Production Company™		
	OPERATOR'S WELL #: DAVID REINBEAU MSH 1H		DATE: 03-09-2022
	DISTRICT: UNION	COUNTY: MARSHALL	STATE: WV
			DRAWN BY: N. MANO
			SCALE: N/A
			DRAWING NO:
			WELL LOCATION PLAT 2

Z:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:07AM

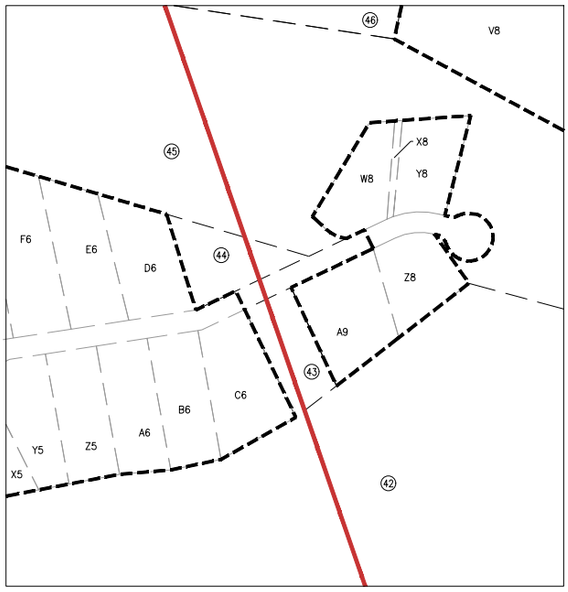
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03-09-2022

DETAIL "C"



DETAIL "B"



DETAIL "A"



I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 708

REVISIONS:	COMPANY: SWN Production Company, LLC / SWN Production Company™		
	OPERATOR'S WELL #:	DAVID REINBEAU MSH 1H	DATE: 03-09-2022
	DISTRICT: UNION	COUNTY: MARSHALL	STATE: WV
			DRAWN BY: N. MANO
			SCALE: N/A
			DRAWING NO: WELL LOCATION PLAT 3

Z:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:08AM

JACKSON SURVEYING INC.
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

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OPERATIONS TEAM Review
03-09-2022

WELL BORE TRACTS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	REINBEAU SHELLY A & DAVID W (S/R)	13-8-29
TRACT	SURFACE OWNER (S)	TAX PARCEL
2	REINBEAU SHELLY A & DAVID W (S)	13-8-27
3	BOWMAN MICHAEL ET UX (S)	13-8-28
4	ALEXANDER LORRAINE (S)	13-7-20
5	ALEXANDER LORRAINE (S)	13-7-18.1
6	WARD CYNTHIA J & DALE P (S)	13-4-23.6
7	COULLING LOUISE S ET AL (S)	13-3-3
8	WALTON EARL RICHARD JR & BRANDICE C (S)	13-4-22.23
9	WALTON EARL RICHARD JR & BRANDICE C (S)	13-4-22.22
10	WALTON EARL RICHARD JR & BRANDICE C (S)	13-4-22.20
11	BRINKMEIER BRUCE & TAMARA (S)	13-4-22.14
12	HOFFMASTER KEVIN & CRYSTAL (S)	13-4-22.27
13	HILL CAROL LYNN & FORDYCE BRIAN W (S)	13-4-22.8
14	MANNING JOHN B & KIMBERLY R (S)	13-4-22.13
15	GAMES FRED & MARY V (S)	13-4-22.17
16	MCGUIRE PHILIP C (S)	13-4-21.4
17	MCGUIRE PHILIP C (S)	13-4-21.9
18	GARVIN CORRINE A EST (S)	13-2-101
19	GARVIN CORRINE A EST (S)	13-2-100
20	GARVIN CORRINE A EST (S)	13-2-98
21	GARVIN DOROTHY MAE EST (S)	13-2-81
22	ROMINE WANDA KAY (S)	13-2-77
23	GARVIN CORRINE A EST (S)	13-2-68
24	GARVIN CORRINE A EST (S)	13-2-38
25	POLLACK RICHARD J ET UX (S)	13-2-38.1
26	ROGERSON GEORGE C EST (S)	13-2-39
27	SEIDLER E DALE JR (S)	13-2-14.9
28	SEIDLER PATRICIA L IRREVOCABLE TRUST (S)	13-2-14.7
29	SHIVELY JOYCE (S)	13-2-14.6
30	WOLEN JOHN & MICHELLE (S)	13-2-102.3
31	FLANIGAN JAMES JR & MELISSA S (S)	p/o 13-2-102
32	RAHBAR AHMAD CREDIT SHELTER TRUST (S)	13-2-102
33	ANDREWS JANET M TRUSTEE (S)	1-RB2-32
34	SCHMIDT THOMAS (S)	1-RB2-28
35	GARVIN D CRAIG & EYDIE M (S)	1-RB2M-54.2
36	GARVIN DALE C & EYDIE (S)	1-RB2M-54.1
37	GARVIN D CRAIG & EYDIE M (S)	1-RB2M-27.1
38	JORDAN TYLER A (S)	1-RB2M-21
39	MANNING ASHLEY A ELDER CHARLOTTE A (S)	1-RB2M-3
40	ORR NANCY J - TOD (S)	1-RB2M-4
41	CONRAD JOSHUA D & TRISHA J (S)	1-RB2-27.3
42	CONRAD JOSHUA D & TRISHA J (S)	1-RB2-24
43	PAVLIC CHRISTOPHER S (S)	1-RB2G-57
44	HELMICK STEVEN S & BETSY J (S)	1-RB2G-55
45	WOODVIEW LLC (S)	1-RB2-14
46	WOODVIEW LLC (S)	1-RB2-14.2
47	WOODVIEW LLC (S)	1-RB2-14.1
48	VILLAGE OF BETHLEHEM (S)	1-RB2C-83
49	HAUGHT JONATHAN L & HAUGHT WILLIAM C (S)	1-RB2C-91
50	DONAHUE ANDREW J & POLA V (S)	1-RB2C-90.1
51	HAMRICK JUSTIN E & MCMURRAY KELLY L (S)	1-RB2C-89
52	CUCHTA BEAU (S)	1-RB2C-100
53	ROGERS STEPHEN J (S)	1-RB2C-99
54	MIRANDY TIMOTHY D (S)	1-RB2C-98
55	WHITE DENISE L (S)	1-RB2C-97
56	TAYLOR JOSEPH WILLIAM (S)	1-RB2C-95
57	WHEELING PROPERTIES CO ADDI (S)	1-RB2-20

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	MCCOMBS JOHN A SR, THOMAS E & BETH	13-8-11
B	MCCOMBS JOHN A SR, THOMAS E & BETH	13-8-26
C	REINBEAU RONALD W & FRIEDA A - LIFE	13-7-22.2
D	MCCOMBS JOHN A SR & MARILYN S	13-7-22.1
E	REINBEAU DAVID W & SHELLEY A	13-7-22.3
F	REINBEAU DAVID W & SHELLEY A	13-7-21.1
G	BOWMAN MICHAEL J & CONSTANCE G	13-7-21
H	BOARD OF EDUCATION	13-7-17
I	BLANEY TIMOTHY O ET UX	13-4-24.5
J	WARD CYNTHIA J	13-4-23.16
K	SMITH JOANN H	13-4-23.2
L	DUNCAN ELMER E & SUSAN L	13-4-23.1
M	STAN TYLER P & CASEY K	13-4-23.5
N	OSER FREDERICK P & MALLORY A	13-4-23.10
O	OSER FREDERICK P & MALLORY A	13-4-23.15
P	BLANEY FARMS LLC	13-4-23
Q	WARD CYNTHIA J	13-4-23.14
R	BLANEY RODNEY A	13-4-23.13
S	SZELIGO RICHARD & ASHLEY	13-4-23.8
T	SZELIGO RICHARD L JR & ASHLEY E	13-4-23.11
U	ETZEL JAMIE P & ANTHONY EVICK II	13-4-23.12
V	ETZEL JAMIE P & ANTHONY EVICK II	13-4-23.7
W	FITZPATRICK BRYAN A & HEIDI A	13-4-23.4
X	WARD CYNTHIA J & DALE P	13-4-24
Y	ORLOFSKE SEAN A & JENNIFER L	13-4-22.11
Z	GAMES FREDERICK LOUIS II ET UX	13-4-22.10
A2	GARRISON ASHLEY	13-4-22.12
B2	FISHER DEBRA ANN GAMES & GALEN E	13-4-22.9
C2	WEST VALLIE JAMES ET AL	13-4-22
D2	FISHER GALEN E & DEBRA A	13-4-22.26
E2	FISHER DEBRA ANN GAMES & GALEN E	13-4-22.5
F2	FISHER DEBRA ANN GAMES & GALEN E	13-4-22.3
G2	GAMES MARY VIRGINIA - TOD	13-4-22.2
H2	GAMES MARY VIRGINIA - TOD	13-4-22.25
I2	WEST RICHARD D JR	13-4-22.24
J2	FISHER GALEN E & DEBRA A	13-4-21
K2	HILL CHARLES S ET UX	13-4-21.7
L2	WALTERS SAMANTHA J & RICHARDS JENNIFER L	13-4-21.1
M2	GARVIN CORRINE A EST	13-2-101.2
N2	GARVIN CORRINE A EST	13-2-101.1
O2	GARVIN CORRINE A EST	13-4-20
P2	GARVIN CORRINE A EST	13-2-70
Q2	GARVIN CORRINE A EST	13-2-99
R2	GARVIN CORRINE A EST	13-2-71
S2	MUSTACHIO EMILY A & GARVIN GRANT W	13-2-72
T2	GARVIN JOHN A & KAREN L	13-2-73
U2	GARVIN JOHN ARTHUR & KAREN L	13-2-74
V2	GARVIN JOHN ARTHUR & KAREN L	13-2-75
W2	BOWSER MARY ANNE	13-2-76
X2	GARVIN CORRINE A EST	13-2-69
Y2	ST MYERS MICHAEL W	13-2-67
Z2	MEGALE GARNET JANE & VICKIE WALTERS	13-2-66.1
A3	WALTERS VICKIE	13-2-65
B3	GREEN JAMES L	13-2-64
C3	WALTERS THOMAS C & KATRINA A	13-2-41.7
D3	TUCKER NATHAN JOSEPH & LINDSEY RENEE	13-2-42.5
E3	COOLEY CHARLES E & CAROL J	13-2-42
F3	RICHTER FAMILY TRUST	13-2-42.17
G3	BLATT JAMES E ET UX	13-2-42.7
H3	MAGERS GARY E ET UX	13-2-2.2
I3	SHIVELY JOYCE	13-2-14.1
J3	SHIVELY JOYCE	13-2-14.5
K3	BRADCOVICH JOSEPH EARL EST	13-2-14.4
L3	NUGENT LINDA S ET AL	13-2-14.8
M3	SEIDLER NETTIE	13-2-14
N3	SEIDLER E DALE JR ET UX	13-2-14.3
O3	SEIDLER TIMOTHY I ET UX	13-2-14.2
P3	COFFIELD RONALD J	13-2-39.5
Q3	COFFIELD RONALD J	13-2-39.3
R3	SCARBRO JENNI M	13-2-39.2
S3	ROGERSON WAYNE R	13-2-39.1
T3	ROGERSON WAYNE R	13-2-39.4
U3	PYSH WAYNE ET UX	13-2-13.6
V3	PYSH WAYNE ET UX	13-2-13.8
W3	PASCOLI KENT A	13-2-13
X3	TURNER JASON & TIFFANY	13-2-102.1
Y3	BANE RYAN A & JULIE A	13-2-102.2
Z3	BRAUNLICH EARL FRITZ & JAMIE LYNN	13-2-104
A4	WEISNER RANDY P	1-RB2-33.3
B4	PINTER EUGENE M & JOAN	1-RB2-33.2
C4	PRASCIK LORI JEAN	1-RB2Q-33
D4	MULARCIK BRYAN & TIFFANY	1-RB2Q-32
E4	SHREVES HOLLIE L	1-RB2Q-31.1

REVISIONS:

COMPANY: SWN Production Company, LLC — SWN Production Company™

OPERATOR'S WELL #: DAVID REINBEAU MSH 1H

DISTRICT: UNION | COUNTY: MARSHALL | STATE: WV

DATE: 03-09-2022
DRAWN BY: N. MANO
SCALE: N/A
DRAWING NO:
WELL LOCATION PLAT 4

Z:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:08AM

JACKSON SURVEYING
INC.
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

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OPERATIONS
TEAM Review
03-09-2022

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
F4	KNORR WILLIAM JOHN & KNORR ELIZABETH VIRGINIA	1-RB2L-81.1
G4	NEIMAN CHARLES AND MARK	1-RB2L-81
H4	ANDREWS JEREMY	1-RB2-32.1
I4	PAULEY SCOTT F & ECHEMANN CHRISTINA	1-RB2L-74
J4	YOHO PATRICK A	1-RB2L-73
K4	BECK SANDRA M	1-RB2L-72
L4	TROUTEN JENNA MICHELLE	1-RB2L-71
M4	STINGLE KEVIN W; GRAY FLORA L (RT TO OCC)	1-RB2L-70
N4	WEST VIRGINIA HOUSING DEV FUND	1-RB2L-69
O4	METZ BARBARA JANE	1-RB2L-69.1
P4	METZ BARBARA J	1-RB2L-68
Q4	LLOYD JENNIFER L & DAVID A	1-RB2L-67
R4	VILLAGE OF BETHLEHEM	1-RB2L-66
S4	SCHNUPP JAMES P & M A	1-RB2L-88
T4	PICKETT VALERIE & GARY B	1-RB2L-64
U4	MARTIN KIMBERLEE GEORGETTE	1-RB2L-62
V4	ARMSTRONG SHELLEE JEAN	1-RB2L-57
W4	SCHMIDT THOMAS L & L E	1-RB2L-55
X4	CLEGG L	1-RB2L-54
Y4	TOWNSEND CARL A	1-RB2L-50
Z4	SNYDER CHRISTINE LEE	1-RB2L-50.1
A5	GARVIN DALE C & E	1-RB2L-49.1
B5	GARVIN DALE CRAIG & EYDIE	1-RB2L-49.3
C5	CHERRY MICHAEL D	1-RB2M-1
D5	CHERRY MICHAEL D	1-RB2M-2
E5	CKJ RENTALS	1-RB2L-49.2
F5	HUTCHISON N R & J (LIFE EST) CHURCH BETH H	1-RB2L-47.1
G5	HUTCHISON N R & J (LIFE EST) CHURCH BETH H	1-RB2L-47
H5	HOWORTH HELENA A	1-RB2L-46
I5	SCOTT STEPHEN A & LINDSEY A	1-RB2L-45
J5	PAULUS ANDREW T & S A YAHN	1-RB2L-45.2
K5	BLAZIER HOWARD T JR & S L	1-RB2L-45.1
L5	CLEGG AUBREI L	1-RB2L-112
M5	GARY MARK C & P S	1-RB2L-37
N5	BLAZIER BRIAN T	1-RB2G-78
O5	MURAD CHRIS R & TRACY	1-RB2G-77
P5	DESANTIS JAMES P & JANE V & DESANTIS MICHAEL V	1-RB2G-76
Q5	VILLAGE OF BETHLEHEM	1-RB2G-75
R5	KONDRAD SCOTT F & DEVYN S	1-RB2G-74
S5	CUNNINGHAM WAYNE D & G K	1-RB2G-73
T5	BLACK SUSAN O	1-RB2G-67
U5	FLETCHER TIM L SR	1-RB2G-66
V5	BLACK SHAUN M	1-RB2G-65
W5	BLACK SHAUN M	1-RB2G-64
X5	CCM PROPERTIES LLC	1-RB2G-63
Y5	JASKO AARON M	1-RB2G-62
Z5	HEUSEL LOUISE V & MATTHEW R	1-RB2G-61
A6	ALBERT JANE LEW	1-RB2G-60
B6	WEISNER GARY	1-RB2G-59
C6	SOMMERS BRUCE A & ANGELA R	1-RB2G-58
D6	MAZESKA CASSANDRA	1-RB2G-54
E6	CZYZEWSKI STELLA J (LIFE) WEISNER GARY A	1-RB2G-53
F6	WILBURN BRANDON M & WILBURN SHELLEY J	1-RB2G-52
G6	MARVIN JACK E	1-RB2G-51
H6	GUSSLER TROY R & SUSANNA E	1-RB2G-82
I6	WEISNER GEORGE A & JEAN - TOD	1-RB2G-46
J6	BECKETT G R & B L (LC-SLRS)	1-RB2G-35.1
K6	BETHLEHEM REALTY INC	1-RB2C-67.1
L6	GRACE EVANGELICAL TRUSTEES C/O SPENCE TIMOTHY	1-RB2C-67
M6	GOMPERS THOMAS L	1-RB2C-82
N6	ANDREWS BRETT A & CHRISTINE A	1-RB2C-85.2
O6	MCCORMICK SCOTT A & CAPRICE M	1-RB2C-86
P6	HAMILTON KAREN S & HAMILTON JEFFREY D ESTATE	1-RB2C-88
Q6	HAMRICK JUSTIN E & MCMURRAY KELLY L	1-RB2C-89.1
R6	DONAHUE ANDREW J & POLA V	1-RB2C-90
S6	MEREDITH CHARLES R & P L	1-RB2C-85
T6	SCHRIMP MARTHA A	1-RB2C-96
U6	BOARD OF EDUCATION	1-RB2C-94
V6	BETHLEHEM UNITED PRESBYTERIAN CHURCH TRUSTEES	1-RB2C-36
W6	PRESBYTERY OF WHEELING (SYNOD OF WV)	1-RB1Q-36
X6	SCHEHL MICHAEL A & CHRISTINA L	1-RB1Q-39
Y6	DIERINGER OLIVE JANE	1-RB1-17
Z6	BANDI MARY DEE	1-RB1Q-107
A7	SASEEN MARK S & ALLISON M	1-RB1-18.1
B7	WHITE JONATHAN W & HEATHER	1-RB1-18

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
C7	WEESE JEFFREY	1-RB1Q-125
D7	RAPP DAVID A & TAMMY L	1-RB1Q-127
E7	WHEELING PROPERTIES	10-W80-1
F7	CITY OF WHEELING	10-W80-1.3
G7	CITY OF WHEELING	10-W80-1.1
H7	WILSON B E & S K	10-W80-1.4
I7	SWIGER JUSTIN A & STEPHANIE M	1-RB3-14
J7	MORRIS JAY R & TINA M	1-RB3-13
K7	RAMSEY BRYAN S & MICHELE A	1-RB3-7
L7	BAYHA DEBORAH S	1-RB3-6
M7	RAMOS SCOTT B & RAMOS AMY D	1-RB3-5
N7	BAKER MARK J & DAYNA M	1-RB3-4.1
O7	WARMAN JAMES J & CARRIE REDD	1-RB3-4
P7	WARMAN JAMES J & CARRIE REDD	1-RB3-3
Q7	CORNELL CHARLES D & LINDA J	1-RB2J-152
R7	POLSINELLI FRANK & POLSINELLI KIMBERLY A - TOD	1-RB2J-151
S7	BREIDING DORENE	1-RB2J-149
T7	CHAMBERLAIN DONALD	1-RB2-20.4
U7	TURNER GEORGE E JR & PAULETTE	1-RB2J-134
V7	SITKO PAUL M JR & EDWINA	1-RB2J-133
W7	KOWALSKI CHESTER J TAMA A	1-RB2J-132
X7	HUMPHRIES ELI THOMAS & BREANNA NICOLE	1-RB2J-131
Y7	BAUERLE RALPH & VICKI L	1-RB2J-20.8
Z7	GHAPHERY BRIAN A; GHAPHERY CHRISTINA W	1-RB2J-20.5
A8	NERNBERG A RICHARD TRUST 1/2 INT & NERNBERG SUSAN L 1/2 INT	1-RB2J-146
B8	VILLAGE OF BETHLEHEM	1-RB2-17.4
C8	JOSEPH MICHAEL A & V J	1-RB2D-35
D8	BLEIFUS LEO A JR	1-RB2-18.1
E8	WHEELING PROPERTIES CO ADDI	1-RB2-18
F8	TAYLOR JOSEPH WILLIAM	1-RB2-19
G8	TAYLOR JOSEPH WILLIAM	1-RB1-20
H8	BLEIFUS LEO	1-RB2C-109
I8	BLEIFUS LEO A JR	1-RB2C-108.1
J8	SULEK DONALD L & L	1-RB2C-107
K8	KLOSS ROBERT A & DONNA J	1-RB2C-101
L8	BIRCH JAMES J & ELIZABETH J	1-RB2C-101.1
M8	MITEVSKI-MUSAP VERA	1-RB2C-102
N8	KLUSKEY ROBERT & BRENDA	1-RB2C-91.1
O8	KLENOWSKI P M & HAIGH J L; KLENOWSKI P E & J L - RTOCC	1-RB2C-92
P8	BONAR BRADLEY C	1-RB2C-142
Q8	GREEN FORREST M	1-RB2C-143
R8	BREIDING BARBARA; BREIDING D W WALKER K L; BREIDING K M	1-RB2C-143.1
S8	HALLER MICHELLE M	1-RB2C-143.2
T8	DLESK ROSALIE J	1-RB2-21.6
U8	DLESK ROSALIE J	1-RB2-21.5
V8	PANDELOS ERNEST M	1-RB2-21
W8	RCC PROPERTIES	1-RB2G-79
X8	PARSONS RONALD E & D M - TOD	1-RB2G-79.1
Y8	PARSONS RONALD E & D M - TOD	1-RB2G-80
Z8	MUSILLI A A JR & C A	1-RB2G-81
A9	GOLD JONATHAN M & C J	1-RB2G-56
B9	CONRAD JOSHUA D & TRISHA J	1-RB2-34.1
C9	DLESK ROSALIE J	1-RB2-34.4
D9	GALE JAMES ASSET MGMT LLC	1-RB2-24.1
E9	STRAUB JOSEPH H EST MARGARET STRAUB	1-RB2-31
F9	LANDON HELEN M	1-RB2M-12
G9	CUSTER WAYNE H	1-RB2M-11
H9	WARDLE HARVEY A & JANET C	1-RB2M-10
I9	WERNER ANTHONY I & JODY M	1-RB2M-9
J9	HABAK JOHN M & R S	1-RB2M-7
K9	THORN LOGAN & ALEXANDRA	1-RB2M-6
L9	TRABERT PAMELA S	1-RB2M-5
M9	WESOLOWSKI JEFFREY J & KACEY L	1-RB2M-20
N9	AUTEN THOMAS HARRISON JR	1-RB2M-22
O9	MELKO BROCK T & BAKER KARLEY R	1-RB2M-23
P9	NEWMAN BILLIE SUE	1-RB2M-24
Q9	MATHIEU JENNIFER L	1-RB2M-24.1
R9	RICHTER ELWOOD F JR & CHRISTINE A	1-RB2M-54.3
S9	RICHTER ELWOOD F JR & C A	1-RB2M-56.1
T9	RICHTER ELWOOD F JR	1-RB2M-56
U9	ASBURY RYAN & ANNE	1-RB2-31.5
V9	POTTS JOHN W & ROSE A	1-RB2-31.2
W9	BRAUNLICH EARL FRITZ & JAMIE LYNN	13-2-102.4
X9	RENFORTH GEORGE III	13-2-16.2
Y9	PERONI CONSTRUCTION INC	10-W95-112
Z9	LONG RICHARD E ET UX	13-2-35
A10	LAUTER FRANK ET AL	13-2-36
B10	LONG RICHARD E ET UX	13-2-37
C10	LONG RICHARD E ET UX	13-2-32
D10	WALKER MICHAEL A	13-2-31

REVISIONS:

COMPANY: SWN Production Company, LLC

SWN Production Company™

OPERATOR'S WELL #: DAVID REINBEAU MSH 1H

DISTRICT: UNION | COUNTY: MARSHALL | STATE: WV

DATE: 03-09-2022
DRAWN BY: N. MANO
SCALE: N/A
DRAWING NO:
WELL LOCATION PLAT 5

Z:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:08AM

JACKSON SURVEYING
INC.
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

DRAFT
OPERATIONS
TEAM Review
03-09-2022

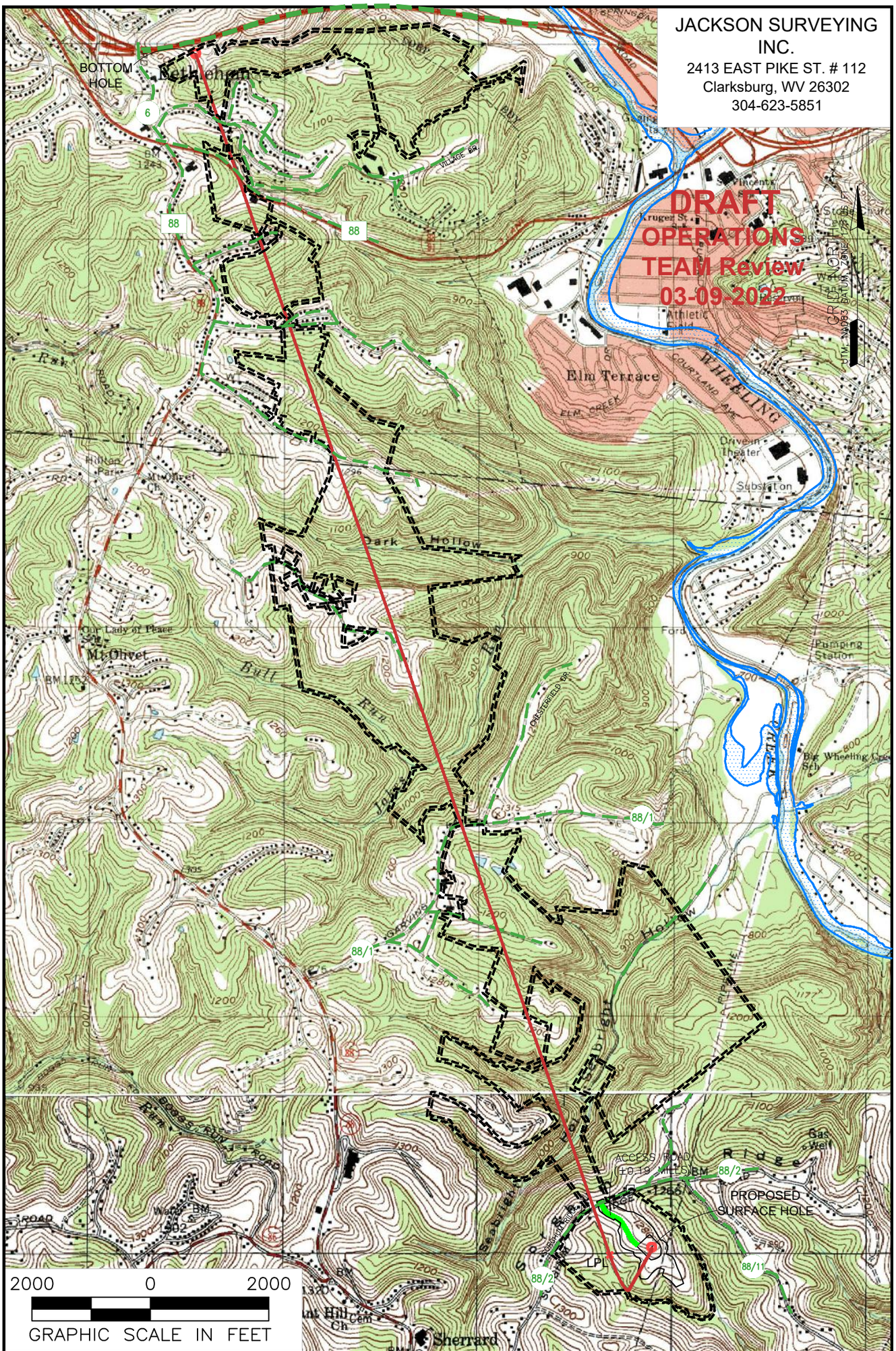
ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
E10	BURKE RICHARD & FITZPATRICK DEBRA	13-2-31.1
F10	BURKE RICHARD & FITZPATRICK DEBRA	13-2-31.2
G10	MILLER GEORGE W ET AL	13-2-79
H10	GARVIN JOHN A & KAREN L	13-2-78
I10	RANSOM DAVID W & DONNA K	13-2-80
J10	GARVIN JOHN	13-2-81.2
K10	MERCER RICK	13-2-81.1
L10	GARVIN LEILA N & DONALD A	13-2-96
M10	GARVIN CORRINE A EST	13-2-97
N10	DAY JOHN U EST & CHRISTINE MERCER	13-2-95
O10	YOUNGER DONALD A & MOORE TERESA R	13-2-94
P10	WIEDEBUSCH ROBERT & CINDY	13-2-93.1
Q10	WIEDEBUSCH ROBERT & CINDY	13-2-91
R10	GAUGHAN MICHAEL WM	13-2-90.1
S10	GAUGHAN MICHAEL WILLIAM ET UX	13-2-90
T10	ABEL JAMES R & SHERI L	13-2-89
U10	ISER RONALD J ET UX	13-2-88
V10	WHITE HORSE FARM LLC	13-3-2
W10	COULLING LOUISE S ET AL	13-3-5.3
X10	COULLING LOUISE S	13-3-5
Y10	BONACCI BRIAN F	13-3-5.1
Z10	OHIO COUNTY COAL RESOURCES INC	13-3-3.1
A11	GEHO STANLEY R & BETH B	13-4-22.16
B11	GAMES FRED & MARY V	13-4-22.18
C11	GAMES FRED & MARY V	13-4-22.19
D11	WALTON EARL RICHARD JR & BRANDICE C	13-4-22.21
E11	BRINKMEIER BRUCE & TAMARA	13-4-22.15
F11	ALEXANDER LORRAINE	13-7-18
G11	SAMPSON EDITH VIRGINIA EST	13-7-19
H11	NARRISH KEVIN	13-8-30
I11	SOUTH CHRISTOPHER C	13-8-31
J11	KOSTELECSKY JOSEPH J JR & CAROLYN - TOD	13-8-31.1
K11	FUNK CHARLES D ET UX	13-8-32
L11	LOY EUGENE EST ET AL	13-8-1
M11	LIBERTY JOHN ET UX	13-8-10

REVISIONS:	COMPANY: SWN Production Company, LLC — SWN Production Company™		
	OPERATOR'S WELL #: DAVID REINBEAU MSH 1H		DATE: 03-09-2022
	DISTRICT: UNION	COUNTY: MARSHALL	STATE: WV
			DRAWN BY: N. MANO
			SCALE: N/A
			DRAWING NO: WELL LOCATION PLAT 6

Z:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:09AM

JACKSON SURVEYING INC.
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

DRAFT
OPERATIONS
TEAM Review
03-09-2022



NOTES ON SURVEY

1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

LEGEND:

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- LPL — LANDING POINT LOCATION
- FLOOD PLAIN
- ACCESS ROAD
- PUBLIC ROAD
- ACCESS ROAD TO PREV. SITE
- LEASE BOUNDARY
- PROPOSED PATH

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	WELL (FARM) NAME: DAVID REINBEAU MSH	WELL # 1H
ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200 MORGANTOWN, WV 26508	COUNTY – CODE MARSHALL – 051	DISTRICT; UNION
SURFACE OWNER: SHELLY A. & DAVID W. REINBEAU	USGS 7 1/2 QUADRANGLE MAP NAME MOUNDSVILLE, WV	

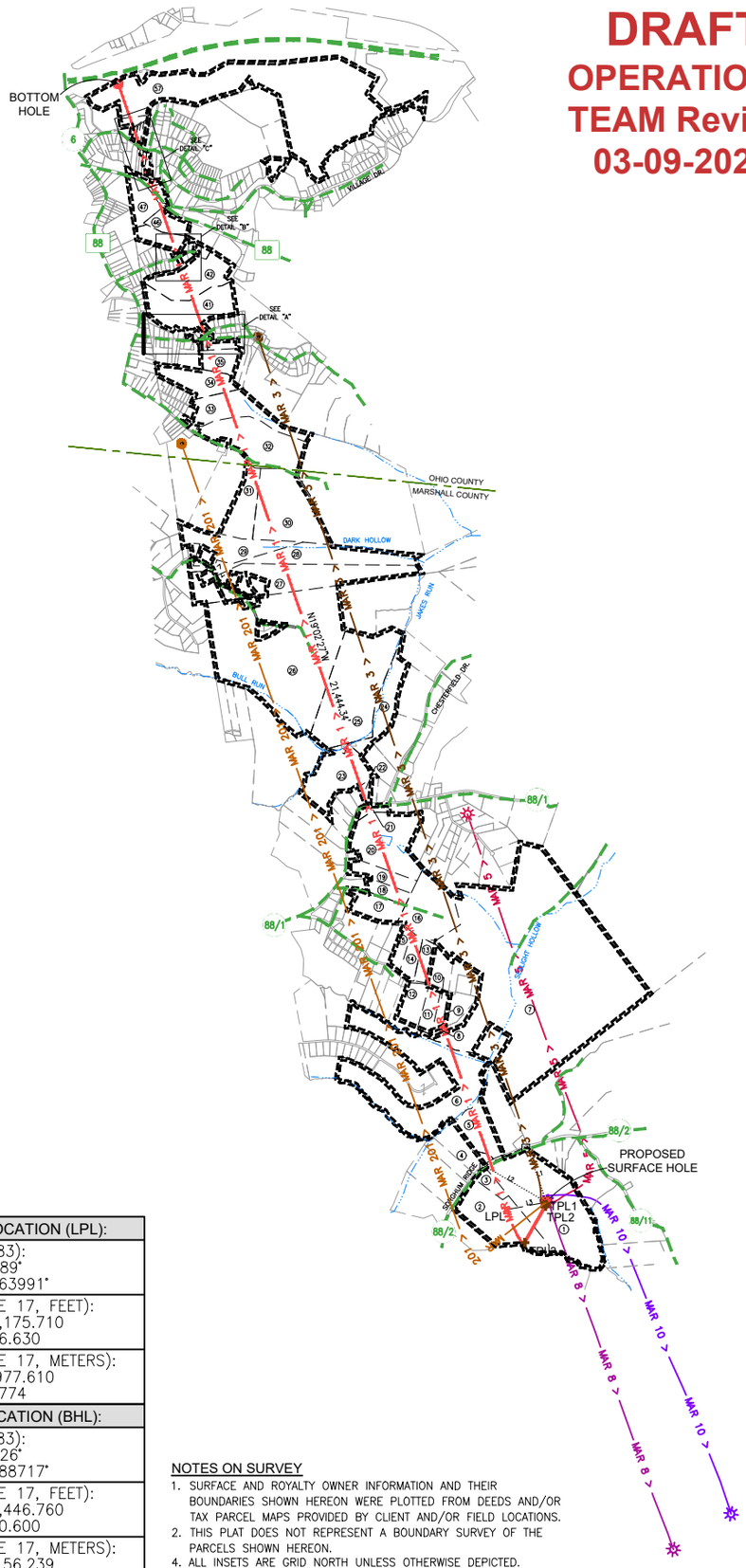
Z:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:09AM

PROPERTY NUMBER 2501166044
PAD ID 3001156592

JACKSON SURVEYING INC.
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

DRAFT
OPERATIONS TEAM Review
03-09-2022

GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT

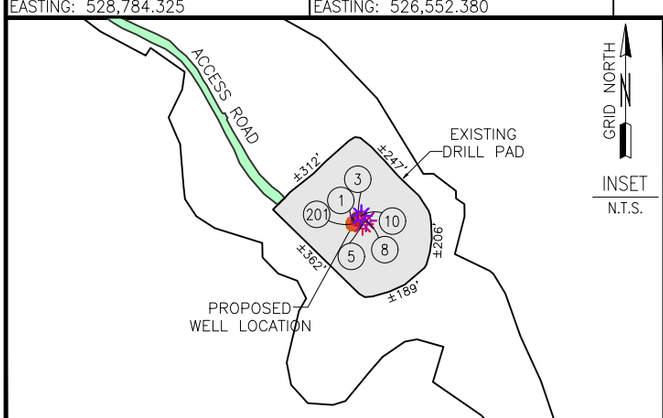


3000 0 3000
GRAPHIC SCALE IN FEET

SURFACE HOLE LOCATION (SHL):
GEOGRAPHIC (NAD83): LATITUDE: 39.992825° LONGITUDE: −80.661455°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,524,300.940 EASTING: 1,735,236.560
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,427,015.781 EASTING: 528,901.161
TURNING POINT LOCATION-1 (TP1):
GEOGRAPHIC (NAD83): LATITUDE: 39.992772° LONGITUDE: −80.661443°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,524,281.630 EASTING: 1,735,239.970
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,427,009.895 EASTING: 528,902.201

TURNING POINT LOCATION-2 (TP2):	LANDING POINT LOCATION (LPL):
GEOGRAPHIC (NAD83): LATITUDE: 39.992641° LONGITUDE: −80.661497°	GEOGRAPHIC (NAD83): LATITUDE: 39.992489° LONGITUDE: −80.663991°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,524,233.890 EASTING: 1,735,225.070	UTM (NAD83, ZONE 17, FEET): NORTHING: 14,524,175.710 EASTING: 1,734,526.630
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,426,995.344 EASTING: 528,897.659	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,426,977.610 EASTING: 528,684.774
TURNING POINT LOCATION-3 (TP3):	**BOTTOM HOLE LOCATION (BHL):**
GEOGRAPHIC (NAD83): LATITUDE: 39.990851° LONGITUDE: −80.662833°	GEOGRAPHIC (NAD83): LATITUDE: 40.048226° LONGITUDE: −80.688717°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,523,580.410 EASTING: 1,734,853.240	UTM (NAD83, ZONE 17, FEET): NORTHING: 14,544,446.760 EASTING: 1,727,530.600
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,426,796.163 EASTING: 528,784.325	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,433,156.239 EASTING: 526,552.380

NOTES ON SURVEY
1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.



NOTE: ANY UTILITIES OR IMPROVEMENTS SHOWN ON THIS PLAT ARE FROM REASONABLE VISUAL OBSERVATIONS. NO UTILITY COMPANIES WERE CONTACTED FOR UTILITY LINE LOCATIONS.

COMPANY: SWN Production Company, LLC

SWN Production Company™

OPERATOR'S WELL #: DAVID REINBEAU MSH 1H

DISTRICT:	COUNTY:	STATE:
UNION	MARSHALL	WV

SWN PRODUCTION COMPANY, LLC
SURFACE HOLES
1. "DAVID REINBEAU MSH 1H"
3. "DAVID REINBEAU MSH 3H"
5. "DAVID REINBEAU MSH 5H"
8. "DAVID REINBEAU MSH 8H"
10. "DAVID REINBEAU MSH 10H"
201. "DAVID REINBEAU MSH 201H"

LEGEND:
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- ABANDONED WELL
- PLUGGED & ABANDONED WELL
- LPL LANDING POINT LOCATION
- DRILLING UNIT
- LEASE BOUNDARY
- HARDLINE BOUNDARY
- UPP 2 > UPPER POINT PLEASANT PATH
- MAR 2 > MARCELLUS PATH

REVISIONS:	DATE: 03-09-2022
	DRAWN BY: N. MANO
	SCALE: 1" = 2000'
	DRAWING NO:
	INTERNAL WELL PLAT

Z:\2022 BACKUPS\1-03-22 DJ\SWN\DAVID REINBEAU MSH\WELL PLATS\1H\FINAL\REINBEAU 1H MSH 3-9-22\REINBEAU 1H MSH WELL PLAT 3-09-22.DWG
WEDNESDAY MARCH 09 2022 11:57AM

PROPERTY NUMBER 2501166044
PAD ID 3001156592

SWN Production Company, LLC
1300 Fort Pierpont Dr, Ste 201
Morgantown, WV 26508
Tel: 304 884 1610
Fax: 304 471 2497
www.swn.com

November 30th, 2021

Mr. Gayne Knitowski
Oil & Gas Inspector
West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304

Subject: Response to Notice of Violation No. 11753
SWN Production Company, LLC
Farm Name: David Reinbeau
Well No. 8H
Union District, Marshall County, West Virginia

Dear Mr. Knitowski:

SWN Production Company, LLC ("SWNPC") hereby respectfully submits to the West Virginia Department of Environmental Protection (the "Department") this response to the October 25th, 2021 Notice of Violation (the "NOV") issued by the Department and relating to the existence of an imminent danger that may cause death or serious physical harm to persons regarding a fire which occurred on the compressor unit at the David Reinbeau well pad (the "well pad") located in Marshall County, West Virginia. This NOV was received by SWNPC on October 25th, 2021.

As stated in the NOV: Shale Production was on-site October 22, 2021 servicing a compressor. For reasons unknown at this time, fire broke out, possibly following an explosion, at approximately 5:17 p.m., resulting in two injuries: a twisted ankle and a hurt arm. Ohio Valley VFD on scene, put out fire and secured emergency shutdown. Some diesel, antifreeze, oil and possibly brine were spilled. Miller Environmental on-site and doing cleanup. This resulted in issuance of the violation referenced to West Virginia Code 22-6-3.

SWNPC has performed a full investigation and determined that the report of a hurt arm was unfounded. The instance of the twisted ankle was confirmed but SWNPC did not find evidence that any person involved in the incident reported or was known to suffer from an injury to the arm.

The NOV requires SWNPC to abate the above-referenced violation by December 1st, 2021. Per the NOV, to abate the violation SWNPC must do the following:

1. Gain control of the activities occurring on the Reinbeau Pad
2. Submit to OOG and the Marshall county inspector, a report on or before December 1, 2021 that addresses the following:
   A) Demonstrate a knowledge and understanding of incident cause
   B) Demonstrate the ability to safely resume operations on the well pad

The Right People doing the Right Things, wisely investing the cash flow from our underlying Assets, will create Value+®

C) Explain future plans of SOPs that will safeguard personnel
D) Confirm that any possible pollutants were confined to the well pad

Below please find documentation of SWNPC's response with respect to these abatement requirements/ activities, in corresponding order to the list above:

1. SWNPC immediately secured the well pad and all producing wells on location were shut in at the time of the event. They remain shut in pending approval from the department to continue operations.
2. Attached please find a comprehensive incident investigation performed by SWNPC which illustrates the known facts of the incident which determined root causes, contributing factors, recommended corrective actions and additional findings. We believe this report will satisfy the requirements of items B and C.

   Additionally, attached is an investigation report prepared by Moody and Associates, Inc. which confirmed no possible pollutants were detected beyond the well pad surface as requested by item D.

We are hopeful that the above-described actions of SWNPC address the Department's concerns identified in the NOV and that this written response adequately abates the violation. Should the Department need additional information or have any questions regarding these violations, the NOV's or the content of this letter, please do not hesitate to contact me directly at 501-428-3636, or via email at josh_boyda@swn.com

Respectfully submitted,

Josh Boyda
Senior Environmental Specialist

The Right People doing the Right Things, wisely investing the cash flow from our underlying Assets, will create Value+®

MARCELLUS WELL DRILLING PROCEDURES
AND
WELL SITE SAFETY PLAN

SWN Production Company, LLC
1300 Fort Pierpont Drive, Suite 201
Morgantown, West Virginia 26508

API NO. 47-XXX-XXXXX
WELL NAME: Roth OHI 10H
Tiltonsville QUAD
Richland DISTRICT
Ohio COUNTY, WEST VIRGINIA

Submitted by:

Name: Brittany Woody Date: 2/14/2022

Brittany Woody

Title: Senior Regulatory Analyst SWN Production Co., LLC

Approved by:

Name: Wayne J. Kuhn Date: 3/8/2022

Title: Inspector

Approved by:

Name: _____ Date: _____

Title: _____

SWN PRODUCTION COMPANY, LLC – CONFIDENTIAL

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1.0 CONTACTS, SCHEDULES, AND MEETINGS

A. Emergency Point of Contact

SWN Production Company, LLC 24-Hour Emergency Hotline: **1-877-879-0376**

B. List of Telephone Numbers

Below is a list of the emergency telephone numbers for external agencies:

Agency Type/ Emergency Service	Name	Emergency Number
County Police	Ohio County	911 or 304-234-3811
State Police	Ohio County	911 or 304-238-1100
Ambulance Service	Ohio County	911 or 304-227-4357
Hospital	Ohio County	304-234-0123
Fire Department	Ohio County	911 or 304-234-3756
WV DEP Oil and Gas Inspector	Gayne Knitowski	304-546-8171
WV DEP Inspector Supervisor	Doug Newlon	304-932-8049
WV DEP Oil and Gas Chief	James Martin	304-926-0499 x1654

Emergency Telephone Numbers for SWN Production Company, LLC ("SWNPC") Personnel are found on the following table:

NAME	ROLE	24-HOUR NUMBER
Shawn Jackson	Primary Contact	832-641-3204 Cell
	Planning Section Chief	304-884-1618 Office
Matt Boggs	Primary Contact	501-581-1692 Cell
	Safety Officer	
Bruce Carpenter	Primary Contact	681-495-8266 Cell
	Field Operations HSE Coordinator	304-884-1688 Office
Chris Flanagan	Primary Contact	304-203-4985 Cell
	Incident Command	304-884-1626 Office
Derek Cutright	Secondary Contact	713-471-6657 Cell
	Information Officer	832-796-7473 Office
Chad Keilman	Primary Contact	501-428-3114 Cell
	Regulatory Supervisor	304-884-1648 Office
Josh Boyda	Primary Contact	501-428-3636 Cell
	Field Regulatory Coordinator	304-884-1713 Office
Dawn Keller	Primary Contact	501-697-7230 Cell
	Field Regulatory Coordinator	304-884-1683 Office
Carla Suszkowski	Secondary Contact	724-561-8129 Cell
	Corporate Regulatory	832-796-6372 Office

Phone Numbers for SWNPC Contractors:

Type of Contractor	Company Name	Telephone Number
Well Control Company	Wild Well Control	**281-784-4700**
Earthwork/Equipment	Burns Drilling and Excavating	724-428-4361
Remediation/Cleanup	EnviroTrac	304-322-2614
Remediation/Cleanup	EPS of Vermont	800-577-4557
Remediation/Cleanup	Ryan Environmental	304-842-5578
Heavy Equipment	Burns Drilling	724-428-4361
Heavy Equipment/Rouster	Roughcut	501-827-1221
Cleanup Supplies	Burns Drilling and Excavating	724-428-4361

MARCELLUS WELL DRILLING PROCEDURES AND
WELL SITE SAFETY PLAN
SWN PRODUCTION COMPANY, LLC

All Schools and Public Facilities within 1 Mile Radius: Contact information is provided below and Attachment 3 provides a map of the locations.

Name	Address	Telephone Number
Wilson Cemetery	Wheeling, WV 26003	Historical Society 304-234-3656
Oaklawn Memorial Park	Wheeling, WV 26003	Historical Society 304-234-3656

C. Method of Notification of Public

In the unlikely event that the presence of H_2S gas is detected or there is a well control issue, the public will be notified by telephone or in person by a SWNPC representative.

D. Pre-Spud Meeting

A pre-spud meeting will be held at the rig prior to spud of the well. The WVDEP Oil and Gas Inspector will be notified a minimum of 24 hours in advance of the meeting and invited to attend the meeting.

- WV DEP Oil and Gas Inspector: Gayne Knitowski

The meeting will include a review of the following:

- General safety procedures to be followed during the drilling of the well;
- The permitted casing and cementing program;
- The Geo-prog;
- The permitted wellbore path / directional plan;
- Anti-collision plan; and
- Any other pertinent information for the drilling of the well.

The meeting shall be attended by all personnel to be involved in the drilling operations including, but not limited to:

- Drilling;
- Land;
- HSE;
- Regulatory;
- Geology
- Drilling Contractor Representative;
- Directional Company Representative (if needed);
- Drilling Fluids Representative (if needed); and
- Cementing Company Representative (if needed).
- Sign In Sheet- Attachment 1

Regular Well Site Safety Meetings

Ongoing Communications:

Discussions between the rig toolpusher and well site supervisor will occur at least twice per day during the tourly HSE Meetings and will cover all pertinent aspects of operations, health, safety, and environmental issues. The well site supervisor and drilling engineer will be in daily contact with the SWN Drilling Department via phone and/or email and will discuss all pertinent operations and HSE issues.

Daily Safety Meetings:

HSE meetings will be conducted once per tour for all types of operations occurring on site, including Drilling, Completion, or Workovers. These meetings will include all personnel working on location.

HSE meetings will cover upcoming operations, JSAs for critical operations, recent HSE incidents, and requirements for safe and healthy operations during current weather conditions. Corporate HSE alerts and corrective actions in response to recent HSE incidents will also be discussed when applicable.

The highest ranking contractor representative (drilling, completion or workover) present shall keep an accurate count of all personnel on the location at all times. All personnel not employed by the contractor on location (i.e. drilling, completion or workover) and all non-SWN personnel will be required to sign the attached SIGN IN SHEET (see Attachment 1).

All non-essential persons will be kept off the location at all times, and such access will be enforced by the highest ranking contractor representative present.

Sign In Sheet- Attachment 2

E. Personnel With Well Control Training

Name	Title	Telephone Number
Chris Flanagan	Area Manager	304-203-4985
Chad Haga	Production Engineer	832-707-4257
Shawn Jackson	Completions Superintendent	304-541-3204
Chris Allison	Senior Staff Production Engineer	832-316-8356
Brad Riley	Rig Operations Superintendent	304-517-3105
Darrell Schembra	Rig Manager	501-428-2731
Jeffrey Gilmore	Rig Manager	304-541-5256
Joel Still	Rig Manager	304-439-4404
Brian Hughes	Rig Manager	501-548-7429
Will Kaler	Rig Manager	501-428-2971
Waylon Goad	Rig Manager	501-581-1691
Daniel Hughes	Rig Manager	681-433-9272
Justin Henley	Rig Manager	281-753-1073
Robert Woodall	Driller	
Kyle Moore	Driller	
Jason Bonham	Driller	
William Bettorf	Driller	
Jarrod Bennett	Driller	
Robie Abbott	Driller	
Michael Jones	Driller	

**In addition, SWN Wellsite supervisors must maintain current well control certification.

2.0 MAPS AND DIAGRAMS

A. Pre-Spud Sign In Sheet

See Attachment 1

B. Well Site Safety Meeting Sign In Sheet

See Attachment 2

C. Visitor Sign In Sheet

See Attachment 3

D. Plan View Map

See Attachment 4

E. 1-Mile Radius Topographic Map

See Attachment 5

F. Evacuation Plan

See Attachment 6

G. Well Location Topo Map

See Attachment 7

H. WV Notification Numbers

See Attachment 8

I. Drilling SimOps Manual

See Attachment 9



3.0 WELL WORK

A. Well Work Procedures

This section provides a description of the well work detail for the wells located on this well pad. The purpose is to drill and stimulate the Marcellus formation.

1. If a void is encountered when drilling surface casing, place two baskets above the void area – balance cement to bottom of void and grout from basket to surface. Run casing not less than 20 feet below void nor more than 100 feet below void. If freshwater is encountered deeper than anticipated it must be protected, set casing at least 50 feet below but not more than 150 feet below freshwater and cement to surface.

2. All casing cemented will not be disturbed for at least 8 hours after completion of cementing operations.

3. If cement does not return to surface when cementing Surface and Coal casing, the WVDEP Oil and Gas Inspector will be notified within 24 hours.

4. Surface, Coal and Intermediate strings will be pressure tested at a pressure greater than what is expected to be exerted on each string throughout the remainder of the well operations.

5. No oil or gas production or pressure should exist on the surface or coal protection strings.

6. A Formation Integrity Test (FIT) will be performed immediately following the drill out of surface, coal and intermediate casing.

7. Centralizers will be used in the well in accordance with regulations and company best practices.

8. Production casing will be pressure tested at a pressure greater than what is expected to be exerted upon it during fracturing operations.

9. Well will be perforated within the target formation and stimulated with a slurry of water, sand, and additives at a high rate. This will be performed in stages with the plug and perf method along the wellbore until the entire lateral has been stimulated within the target formation. All stage plugs will then be drilled out and the well will be allowed to flow back to surface.

10. Upon completion of fracturing operations the production casing will be pressure tested at a pressure greater than expected shut in pressure.

11. The well will be produced through surface facilities consisting of high pressure production units, vertical separation units, water and oil storage tanks, as appropriate based on the composition of the hydrocarbons.

B. Local Emergency Planning Office Plan Submission

A copy of this Well Site Safety Plan will be provided to the local county emergency office at least 7 days before dirt work or well work commence

C. Muster, Secure the Area, and Restrict Access

All personnel shall be directed to the Muster Area and shall remain there until the person in charge (the acting incident commander) deems it safe for further movement (i.e., a complete evacuation from site). This is assuming that the muster area is unaffected by the incident and has been deemed a safe area.

In event of a well control emergency, all personnel should gather at a safe upwind location. This location should be pre-determined and take into account the possibility of secondary explosions. The primary muster point should be upwind of the prevailing direction with at least one alternate site. (See Attachment 6)

All roads in the immediate area leading to the location shall be secured. If an emergency event presents a hazard to public roadways, the local law enforcement agencies shall be contacted to establish the necessary road closures. Local law enforcement agencies can be contacted through the 911 operator. (Refer to section 1.0 "Contacts, Schedules, And Meetings")

4.0 CHEMICAL INVENTORY AND SAFETY DATA SHEETS (SDS)

A. Safety Data Sheets

The Safety Data Sheets ("SDS") for all chemicals to be located on site are provided on the attached CD for your information.

B. SDS Location

The SDS will be available in the toolpusher's office when the rig is on location. When the completion crew is on location they will be located in the Well Site Supervisor's trailer.

C. Inventory of Materials

As required, a list of additives on site during each phase of well development is provided below:

Chemical	Storage Vessel	Typical Quantity
Fuels and Lubricants		
Diesel Fuel	ASTs	12,000 - 25,000 gal.
Motor Oil	Lube Skid	55 - 300 gal.
Hydraulic Oil	55-gal. drums or smaller	55 - 440 gal.
Brake Fluid	55-gal. drums or smaller	55 gal.
Used Motor Oil	55-gal. drums	55 - 220 gal.
Lube Oil	55-gal drums	55 - 220 gal.
Drilling		
Salt (NaCl)	Bags/Sacks	2,000 - 20,000 lbs.
Anco Bar (barite)	Bags/Sacks/Drums	90,000 – 120,000 lbs
SOBM Oil Base (Synvert Synthetic Drilling Fluid Base)	Plastic Totes	4,000 - 10,000 gal.
Defoamer	55-gal. drums	55 – 1,000 gal.
Bentonite	Sacks	1,000 – 5,000 lbs
Rheology Modifier	55-gal. drums	55 – 1,000 gal.
Potassium Chloride (KCl)	Bags/Sacks	2,000-12,000 lbs.
Wetting Agent	55-gal. drums	55 – 1,000 gal.
Primary Emulsifier	55-gal. drums	55 – 1,000 gal.
Gilsonite	Bags/Sacks	2,000 - 10,000 lbs.
Calcium Carbonate	Bags/Sacks	2,000 - 10,000 lbs.
Calcium Chloride (CaCl)	Bags/Sacks	2,000-12,000 lbs.
Lime	Bags	6,000 - 12,000 lbs.
Organopuillic Clay	Bags/Sacks	2,000-12,000 lbs.
Salt Gel	Bags/Sacks	2,000-10,000 lbs.
Chemical	**Storage Vessel**	**Typical Quantity**
Drilling (Continued)		
Walnut Hulls	Bags/Sacks	2,000-5,000 lbs.

Cedar Fiber	Bags/Sacks	2,000-5,000 lbs.
KCL Substitute (Anco Guard)	55-gal. drums	55 – 1,000 gal.
Synthetic Oil Based Mud	Frac Tanks / Open Top Mud Tanks	60,000 gal.
Oil Dry (absorbent)	Bags	6,000 - 12,000 lb.
Battery Acid (Sulfuric Acid)	40-80 lb. Lead Acid Batteries in equipment throughout well pad	600 - 800 lbs.
Hydraulic Fracturing		
Hydrochloric Acid (15-28 %)	Plastic Totes on tractor trailers	4750 - 9,500 gal.
Biocide	Totes	7,000 - 14,000 gal.
Sand	Trailer bins	325,000 - 1,300,000 lbs.
Water Gelling Agent	Tractor trailer tankers/ totes	3,000 - 6,000 gal.
Friction Reducer	Tractor trailer tankers/ totes	2,000 - 4,000 gal.
Scale Inhibitor (ethylene glycol)	Plastic Totes	250 - 500 gal.
Guar Gel	Plastic Totes	4,000 - 6,000 gal.
Production		
Natural Gas Condensate	ASTs	16,800 - 33,600 gal.
Produced Brine Water	ASTs	16,800 - 33,600 gal.
Methanol	ASTs	350 - 700 gal.
Ethylene glycol/Triethylene glycol	GPU Units & Dehydration Units	750 gal.

5.0 BOP AND WELL CONTROL

A. BOP Equipment and Casing Heads

The following is a list of the blow-out prevention equipment that will be utilized at various times during the drilling of the well:



13-3/8" Casing String
13- 5/8" Annular 13-5/8"
10,000 psi BOP Stack

B. BOP Test Procedure and Schedule

The BOP stack shall be installed after running surface casing and installation of the starter casing head (A section).

If a multi-bowl/thru bore wellhead is installed, the BOP shall be installed on the wellhead and tested. Upon initial installation of the wellhead and the first assembly of the BOP, all of the BOP shall be pressure tested and then retested every 21 days following.

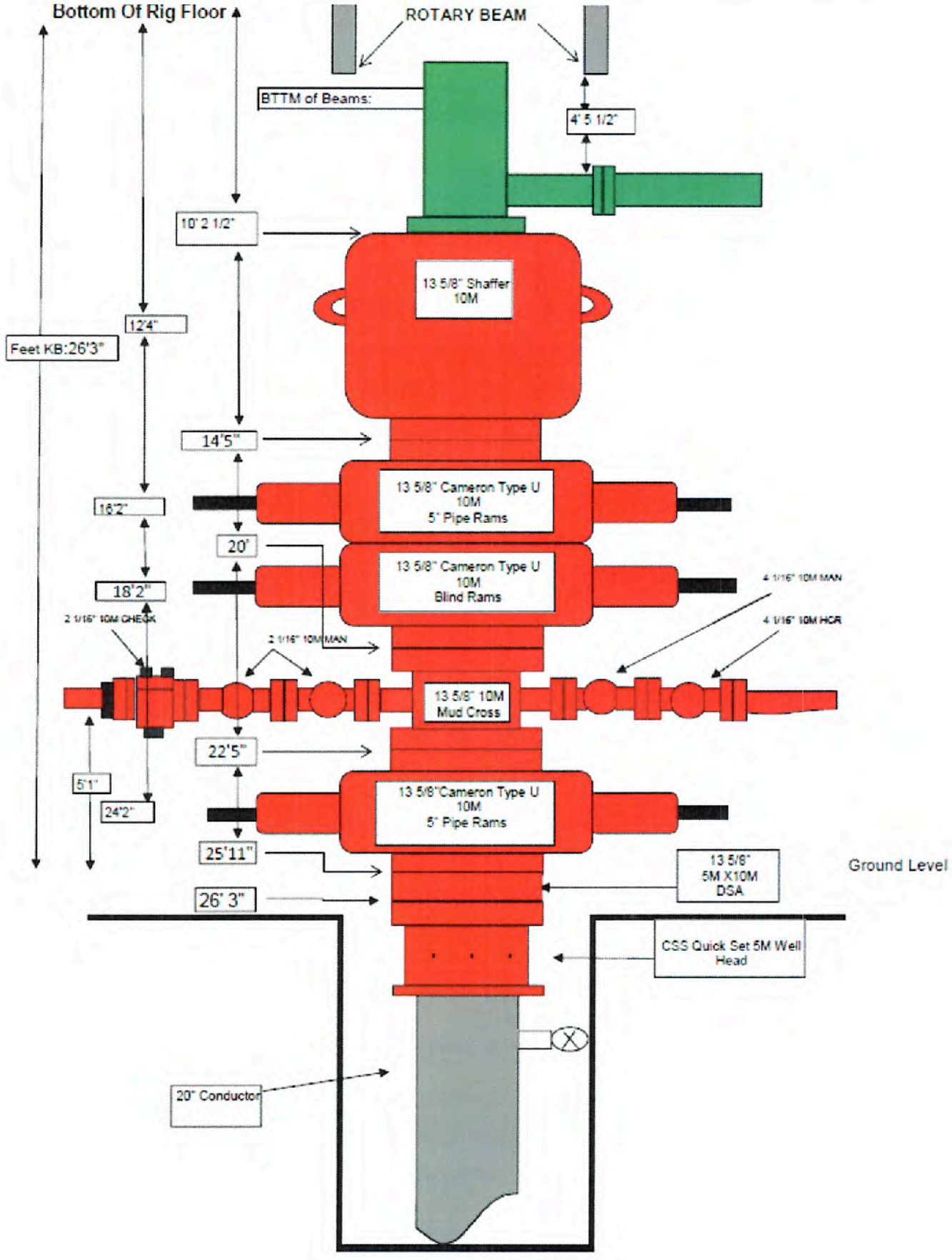
If a conventional wellhead is used, the BOP will be installed and tested upon installation on the first wellhead (A section). Afterwards, once the intermediate section (B) of the wellhead is installed, the BOP stack shall be installed on the intermediate section of the wellhead and any new breaks/makeups shall be tested.

The BOP stack will be pressure tested upon installation and every 21 days following. The BOP stack will be function tested upon installation, weekly, and after every bit trip. All pressure tests shall be performed for thirty (30) minutes. Annular preventers will be tested to 70% of the rated capacity and ram preventers will be tested to 80% of the rated capacity.

On multi-well pads, if the BOP can be moved intact from one well to another, upon installation of the BOP equipment on the new wellhead, only the connection of the BOP stack which was separated and reconnected shall be tested as long as the timing since the prior test is less than 21 days.

C. BOP Equipment

A schematic of the standard BOP equipment to be used is shown on the following page.


Bottom Of Rig Floor
ROTARY BEAM
BTTM of Beams:
4' 5 1/2"
10' 2 1/2"
13 5/8" Shaffer
10M
12'4"
Feet KB:26'3"
14'5"
13 5/8" Cameron Type U
10M
5" Pipe Rams
16'2"
20'
13 5/8" Cameron Type U
10M
Blind Rams
18'2"
4 1/16" 10M MAN
2 1/16" 10M CHECK
4 1/16" 10M HCR
2 1/16" 10M MAN
13 5/8" 10M
Mud Cross
22'5"
5'1"
24'2"
13 5/8"Cameron Type U
10M
5" Pipe Rams
25'11"
13 5/8"
5M X10M
DSA
Ground Level
26' 3"
CSS Quick Set 5M Well
Head
20" Conductor

D. Personnel with Well Control Training

At a minimum, the following personnel that will be present during drilling operations are BOP certified and well control trained:

- Rig Toolpusher
- Rig Moring Tour Driller
- Rig Evening Tour Driller

E. Records Maintenance and Notification Procedures for Drilling Issues

SWNPC uses an electronic database system for the maintenance of all records of drilling, including significant drilling issues, such as:

- Lost circulation;
- Hydrogen sulfide gas;
- Fluid entry; and
- Abnormal pressures.

These records are entered into the database system at the drilling rig and can be accessed from any SWNPC office.

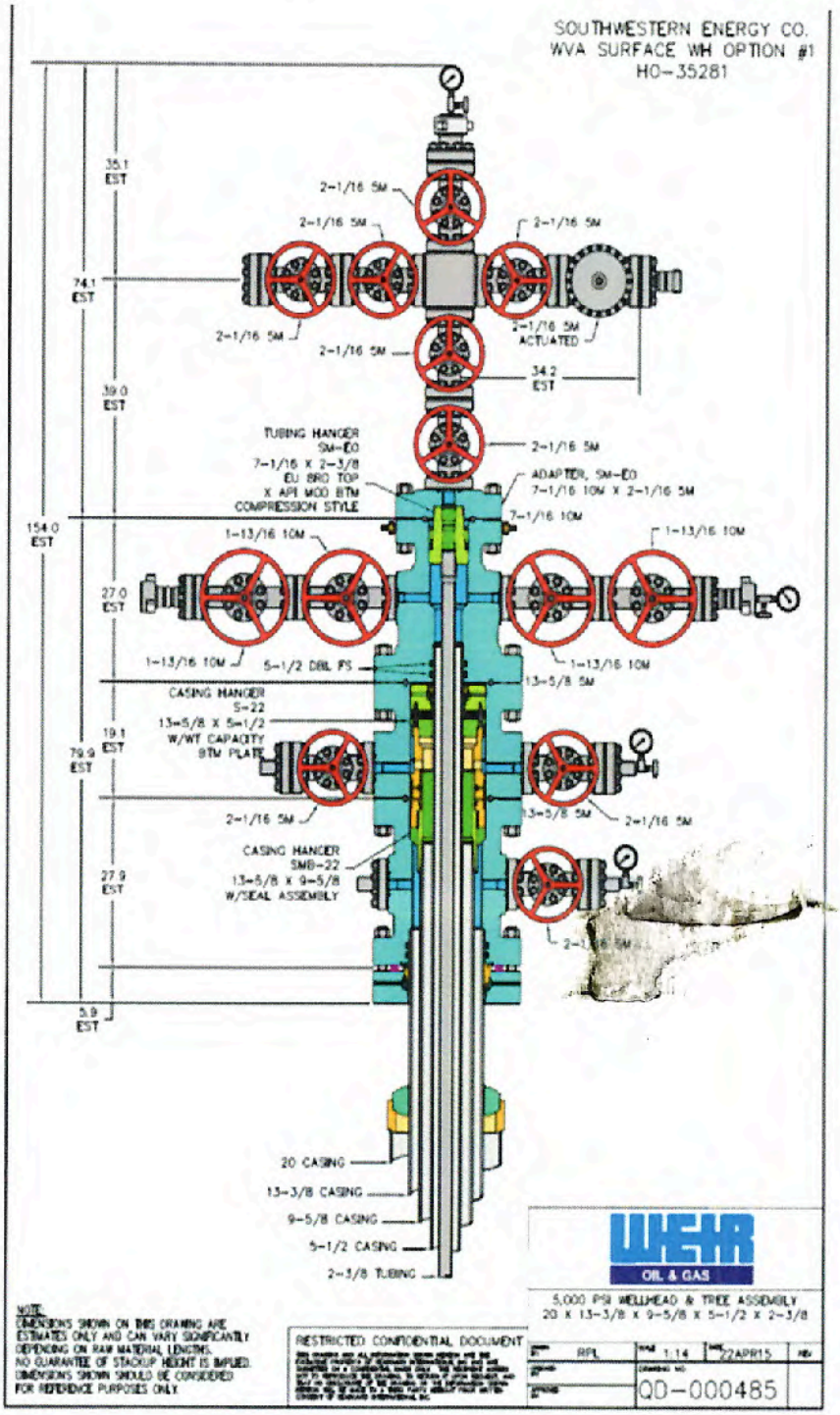
When any of these types of drilling issues are encountered, SWNPC personnel will notify the WVDEP Oil and Gas inspector immediately either via phone call, email, or text message.

F. Notification Procedures for Unusual Drilling Events

When an unusual drilling event is encountered, such as hydrogen sulfide gas or a large kick, the WVDEP Oil and Gas Inspector will be notified as soon as possible via phone call, email, or text message.

G. Wellhead Schematic

A schematic of the wellhead that is anticipated for installation following drilling and completion activities is shown on the following page.


SOUTHWESTERN ENERGY CO.
WVA SURFACE WH OPTION #1
HO-35281
35.1 EST
74.1 EST
39.0 EST
154.0 EST
27.0 EST
79.9 EST
19.1 EST
27.9 EST
5.9 EST
2-1/16 5M
2-1/16 5M
2-1/16 5M
2-1/16 5M
2-1/16 5M
2-1/16 5M ACTUATED
34.2 EST
2-1/16 5M
TUBING HANGER SM-EO
7-1/16 X 2-3/8 EU 8RD TOP X API MOD BTM COMPRESSION STYLE
ADAPTER, SM-EO 7-1/16 10M X 2-1/16 5M
7-1/16 10M
1-13/16 10M
1-13/16 10M
1-13/16 10M
5-1/2 DBL FS
1-13/16 10M
13-5/8 5M
CASING HANGER S-22 13-5/8 X 5-1/2 W/WT CAPACITY BTM PLATE
13-5/8 5M
2-1/16 5M
2-1/16 5M
CASING HANGER SMB-22 13-5/8 X 9-5/8 W/SEAL ASSEMBLY
2-1/16 5M
20 CASING
13-3/8 CASING
9-5/8 CASING
5-1/2 CASING
2-3/8 TUBING
WEIR OIL & GAS
5,000 PSI WELLHEAD & TREE ASSEMBLY
20 X 13-3/8 X 9-5/8 X 5-1/2 X 2-3/8
NOTE:
DIMENSIONS SHOWN ON THIS DRAWING ARE ESTIMATES ONLY AND CAN VARY SIGNIFICANTLY DEPENDING ON RAW MATERIAL LENGTHS. NO GUARANTEE OF STACKUP HEIGHT IS IMPLIED. DIMENSIONS SHOWN SHOULD BE CONSIDERED FOR REFERENCE PURPOSES ONLY.
RESTRICTED CONFIDENTIAL DOCUMENT
RPL
1.14
22APR15
QD-000485

H. Well Kill Procedures

Barite and saturated brine will be available on site or nearby if necessary, to weight up beyond the proposed compositions.

Once it is confirmed that a significant gas flow has occurred, the appropriate kill procedure will be employed. The mud weight required to kill the well will be calculated and the surface mud system density will be increased to the required weight. A pumping schedule to circulate the kick out of the well will be calculated and followed once the surface mud system is of proper density.

Either of two kill procedures will be utilized to kill the well, both are recognized by the IADC as appropriate kill procedures. These are as follow:

Drillers Method: Once the kick is detected, the influx is circulated out of the well with the original mud weight and a constant bottom hole pressure (BHP) is maintained by holding circulating drill pipe pressure constant during the first circulation. Then by circulating the hole a second time with a heavier kill weight mud that is of sufficient density to control the well. During the second circulation the casing pressure is held constant until kill weight mud is pumped to the bit with a drill pipe pressure schedule is followed. After kill weight mud has been pumped to the bit, drill pipe pressure is kept constant and casing pressure is monitored as kill weight mud is circulated to surface.

Wait & Weight Method: This procedure has the advantage that only one circulation is required to kill the well. In this procedure, the well is shut-in until an accurate shut in drill pipe pressure can be determined and used to calculate required kill weight mud. Once the appropriate kill weight mud has been prepared, the well is circulated using a predetermined drill pipe pressure schedule until mud has been pumped to the bit. Then drill pipe pressure is held constant until kill weight mud has been circulated to surface.

6.0 HYDROGEN SULFIDE ("H_2S")

A. Detection, Monitoring, and Warning Equipment

H_2S monitoring equipment will be installed at the rig floor, shakers, cellar, and pits. If an alarm is presented from any of the sensors, drill operations will cease and all personnel will gather at the appropriate muster area. Properly trained and equipped personnel will determine the validity of the alarm. If the presence of H_2S is confirmed, SWNPC's H_2S Contingency plan will be activated. A copy of this plan is available upon request and details the equipment, training, and procedures required for operation in an H_2S environment.

B. Hydrogen Sulfide Training

H_2S training programs covering the topics below will be initiated:

1. Basic awareness training (either video or booklet review) will occur on-site and may require two trips in order to train all rig crew members
2. Each crew member will be given certification test to verify his competence to respond in an H_2S situation
3. Physically show members how to properly don a mask and perform a qualitative fit test (banana oil) if utilizing a tight fitting mask as an escape unit
4. Identify and discuss the location of escape units, SCBA's and location of H2S monitors and sensors
5. In addition to the H_2S monitoring equipment mentioned above, two safety area signs, one H_2S condition sign and two wind socks will be mobilized to location

C. Notification Procedures

In the unlikely event that hydrogen sulfide would be present, SWNPC will immediately notify the WVDEP Oil and Gas Inspector by phone.

SWNPC will then notify all affected residents and agencies by telephone or in person.

D. Procedures for Protection Zone Establishment and Maintenance

In case of an emergency on the drilling site, all persons on location will exit via the access road and meet at the evacuation meeting area designated on the attached EVACUATION PLAN. The highest ranking drilling contractor representative will be responsible for comparing the persons that were present on location to those persons gathered at the designated evacuation meeting area. Protection Zones will be established while drilling that will be located at the predetermined muster points furthest upwind of the location of the H_2S. Access will be controlled by a sign, color-coded flags, and a sign-in sheet.

E. Personal Protective Equipment ("PPE") List

The following PPE will be available on location:

1. (10) 5 – minute escape packs will be installed on the rig floor for a quick escape;
2. (1) 10 – minute escape pack will be installed on the board; and
3. (4) 30 – minutes SCBA's will be on-site. Two SCBA's will be placed at the entrance to the location (Muster Point #1) and the other two placed at Muster Point #2 on the other side of the location. This will allow either equipment to be in an area that is upwind.



7.0 FLARING

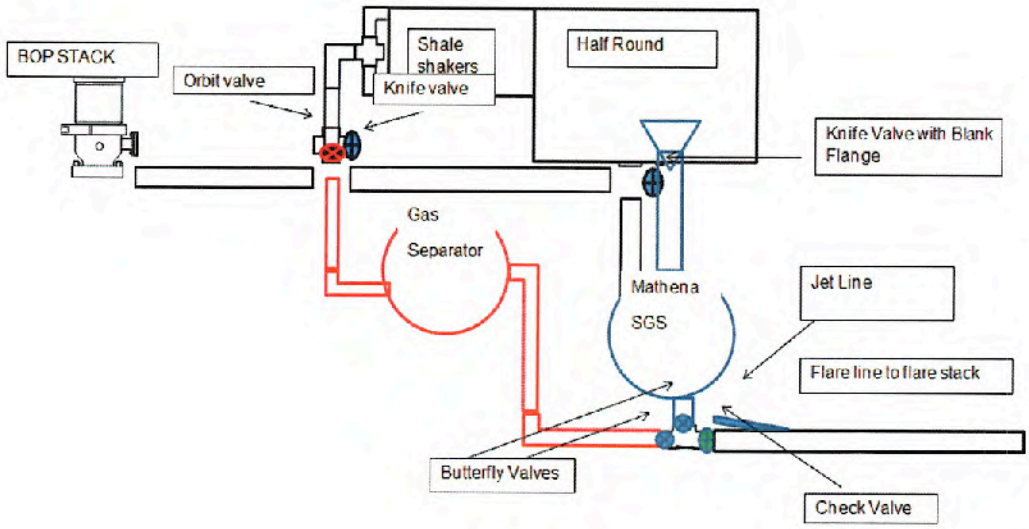
A. Description and Plan for Flaring

If a significant show of natural gas is encountered it will be flared through the 10-inch flanged flowline to a flare stack.

The fire department will be notified immediately prior to flaring, if possible.

It is anticipated that the duration of flaring should not last more than 10 days.

Below is a schematic of the flare:



8.0 COLLISION AVOIDANCE SAFEGUARD, PRACTICES AND STANDARD PLANS

A. Wellbore Anti-Collision and Directional Surveying

1. Well Planning Requirements

- No two wellbores should be designed to be closer than 10' once drilling commences. In the event that two surface locations are closer than 10' apart then directional equipment will be required below conductor and greater than 10' of separation shall be achieved as soon as possible.
- During the well planning process a clearance scan will be performed and validated. The Directional Drilling Contractor and the Drilling Engineer shall calculate a Separation Factor for all potential collision risk wells identified in the clearance scan.
- All wells planned with a S.F. of less than 1.5 or at any point closer than 10' planned center to center separation will be reviewed with the Drilling Engineering Manager prior to pre-spud meetings.
- After completion of location and prior to setting the conductor the land survey company will resurvey the stakes for each surface location and drive a steel stake in the ground identifying each individual well. An as-built will be created and circulated to the Drilling Engineer and Drilling Superintendent identifying each well and the appropriate X and Y locations.
- Anti-Collison Diagram shown on the following page.

2. Scope of Work and Survey Requirements

All wells shall be surveyed from the wellhead to a total depth using the guidelines specified in this document.

Survey tool selection shall be based on the anti-collision requirements, survey tool accuracy, target size, and depth.

SWNPC preferred method of survey calculations shall be the Minimum Radius of Curvature method.

All survey data shall be required to have azimuths pre-corrected to Grid North. The values for convergence and declinations and depth datum details used shall be reported on all definitive surveys. Additionally, survey tool accuracy should be specified on all surveys presented to SWNPC.

During collision scans all offset well surveys will be evaluated for accuracy.

In general, in all development wells, regularly spaced MWD or Magnetic Single Shot Surveys shall be taken at a frequency not to exceed 300'. Additional surveys may be taken at the discretion of the directional driller, Drilling Representative, Drilling Superintendent, or Drilling Engineer to ensure accuracy and minimize the potential for collision.

Survey Quality Control and Reporting:

- Deviation calculations shall be performed on the rig by the directional driller and independently verified by SWNPC's 24-hour operations support center. The

calculations shall be performed using a company approved program. The directional drilling contractor is responsible for the accurate reporting of all wellbore positioning data. The directional drilling contractor will present the definitive surveys utilizing data from any of SWNPC's surveying contractors.

- The SWNPC representative will check tie-in data before drilling out of each hole section. Projected surveys will never be used to tie-in subsequent surveys.
- The Drilling Engineer and directional drilling contractor will ensure all directional drilling proposals include the correct tie-in data and clearly identify the projection to which the plan is tied. This projection will be replaced with a survey once drilling commences.

3. Collision Response

In the event of a collision, or if it is determined that there is the likelihood of a collision, drilling operations will cease and well control measures will begin based on the well architecture at the time of the collision and the surface pressures seen. In all cases, the main focus will be to maintain well integrity in both wellbores. Dependent upon the depth and pressures encountered, one of the following will occur:

- The well will be shut in and well kill operations initiated if the surface pressures do not exceed the maximum allowable surface pressure; or
- The well will be diverted to flare should the surface pressure exceed the maximum allowable surface pressure until the time that appropriate kill operations can begin.

The SWNPC Drilling Engineer and Drilling Manager will be contacted by the rig personnel, and the appropriate WV DEP Oil and Gas Inspector will be contacted as notification of the issue. SWNPC's Emergency Management Plan will be initiated and the well control contractor will be contacted to proceed to the wellsite. Appropriate local emergency response personnel will also be contacted.

4. Notification Procedure

In the event of a collision or if it is determined that there is the likelihood of a collision, the WVDEP Oil and Gas Inspector will be notified as soon as practicable by phone.

For WV Notification Numbers, see Attachment 8.

9.0 DRILLING SIMOPS MANUAL

A. Cellar Entry

- Cellar entry while plats are in place is prohibited. Cellar entry without a gas monitor is prohibited.
- Drilling personnel will not entry producing well cellars.

B. Pad Preparation

- Production personnel will perform an inspection of each existing wellhead within 1 week of rig mobilization.
- Drilling personnel will inspect the pad prior to containment installation.
- Production will function test and service all well head valves.
- Production LEL monitoring stations will be located in the producing wells cellars or on the well head of above grade wells and GPUs.
- Confirm jersey barriers have been placed in front of all surface equipment.
- All personnel working on location for drilling during pad preparation will receive instruction no ESD operation and LEL monitors before starting operations.
- Containment plastic will be installed into and attached to the cellar wall.
- All lifts for the cellar plates or wellhead cages will be made using two tag lines to guide the plate into position.
- Hand rails must be installed immediately after a plate is removed from the cellar trench of below grade wells.
- Driving across a cellar cover is prohibited.
- Producing wells located in a trench with active conductor or mouse hole installations will be shut in.

C. Rig Mobilization

- Below grade wells can remain on production during rig moves and skids if the walking path of the rig does not cross production flowlines.
- If the wellheads are below grade in CellarTech cellars, then the cellar cover plates or handrails will be in place at all times.
- The daytime Well Site Supervisor (WSS) will be the Person in Charge (PiC) from the start of rig mobilization forward.
- A gate and guard shack will be place at the bottom and top of the lease road to control access to the lease road and pad.
- Install check valve on existing well kill line near the cellar and a manual valve on existing well kill line near the dedicated pump for all below grade wells.
- Install firehose to all producing well cellars and connect to a dedicated pump or gravity feed system.
- After finishing rig equipment placement and before starting engines, install LEL monitors.
- Confirm ESD pull stations are located in front of the tank battery and at the lease road entrance to the pad.
- The producing well cellars will be connected to a dedicated air compressor to produce negative pressure in the cellars via Venturi effect.

- If new well cellar entry is required prior to the rig up of the ventilations system two intrinsically safe blowers must be used to move air into and out of the cellar.

D. Producing Well Ventilation

If the existing wells on the well pad are in CellarTech below grade cellars, the following procedure will be followed:

• A negative pressure environment will be maintained in all producing well cellars at all times after initial MIRU of drilling operations. A dedicated 750 cfm compressor will be used to supply air to the ventilation system and should be stationed near the drilling air pack. A vacuum will be pulled on all producing cellars. Each ejector will be threaded to a 3' of 3" pipe which will extend through the cellar plate and into the cellar. The supply air and exhaust lines will be flexible rubber hose rated to 500 psi. Each cellar will be covered with a VentaTex curtain to control air flow into the cellar.

E. Drilling Operations

1. Cellar Hot Work

- Two 12 inch, intrinsically safe blowers will be used to ventilate new well cellars anytime a welder is working in the cellar.
- 4-gas air monitors will be used to monitor the atmosphere inside the cellar and the exhaust line of the blower located in the cellar.
- Fire watch will be maintained from surface if adequate visibility can be maintained.

2. Other Cellar Operations

- Cellar operations not requiring hot work do not require ventilation for entry. The cellar atmosphere will be tested prior to entry and continuous 4-gas monitoring will be required in the cellar while it is occupied.

3. Surface Hot Work

- A designated hot work area will be set up and identified with signage.

4. EL and ESD Events

- The LEL detectors on location are set to alarm at 10% of the lower explosive limit (LEL) for the atmosphere they are testing.
- Production LEL alarms will be reported to the production operator and WSS immediately.
- Drilling operations will be suspended and all personnel will report to their assigned SimOps position. (See Attachment 9 for SimOps position table)
- The production operator, production superintendent, and drilling engineer should he notified as soon as possible.
- The production operator will confirm the cause of the LEL event and inform the WSS as to the severity of the issue and requirements for isolating the leak.
- Requirements for returning to Drilling Operations are below:

  - Level 1: LEL source isolation, 0% LEL on location
  - Level 2: LEL source isolation, leak point repair and testing, 0% LEL on location
  - Level 3: Management approval.
- Rig engines can be re-started and circulation resume if the LEL source is isolated and the LEL measurements have returned to 0% after level 1 & 2 events.

5. Traffic Control

- Traffic on the lease road will be one way up or down for commercial trucks.
- Signs will be places at the beginning of the lease road instructing commercial drivers to use a specific radio channel to contact the gate guard for permission to proceed.
- A gate will be installed at the entrance to the pad and manned 24-Hours a day to control access to the location.
- Tight coordination with the staging area will be required to maintain order flow.
- Production trucking operations will be coordinated with drilling operations to avoid congestion.
- Production trucks will be escorted from the gate to the tank battery and back to the gate by the production operator.

F. Contingency Operation

1. Surface Equipment Leaks

- Minor surface leaks will be isolated via Surface Shutdown procedures.
- If the LEL monitors near the rig alarm after a Surface Shutdown the pad ESD will be activated to shut-in producing wells at the wellhead.
- Drilling personnel will not enter production equipment area.
- All planned venting of surface equipment should be discussed with the WSS prior to beginning the venting process.
- If conditions indicate an LEL detection near a rig engine it is probable the rig will be given the opportunity to circulate at least 1 bottoms up prior to venting if the production situation is not deemed critical.
- When possible all venting will be routed through the combustor.

2. Producing Cellar Leaks

- Cellar leaks will be separated into two categories, upstream of the ESD (well head) and downstream of the ESD.
- Leaks which are upstream from the ESD cannot be stopped by shutting in the well.
- No initial LEL alarm will be considered a false alarm without independent confirmation by a second monitor.

3. Producing Cellar Entry

- LEL Measurements must be a 0% inside and around the cellar before the cellar plates can be removed.
- Rig operations will be suspended before the cellar cover plates are removed.
- If possible, cellar entry will be times to coincide with non-critical operation periods for drilling.

- Handrails and stairs will be in place before production personnel entry the producing cellar.
- A spotter will remain at the cellar while personnel are inside.
- Entry below cellar grating is prohibited without management approval.

4. Simops Drills

SimOps drills will replace BOP drilling every other day. Drills should cycle through various LEL alarm scenarios to ensure the crew is familiar with their assigned duties for each situation.

G. Surface Well Head Operations

Location handover will occur after the rig is off location and the WSS and production operator have completed a location inspection together.

SimOps involving above grade wellheads will observe the following protocol:

- Production from above grade production trees will only occur if the location layout permits for adequate protection of the producing wellhead utilizing cages.
- A location assessment will be performed prior to rig mobilization to determine if the rig, well head cages, and production equipment can be safely placed on location to ensure safe drilling and production operations.
- Grating will be in place at ground level around the producing wells restricting access to the cellar.
- ESD's and LEL meters will be installed in similar locations as described above the below grade wells.
- All production equipment will be protected by concrete jersey barriers as described in Section 4.
- Engines should not be located within 40 feet of a producing well or production equipment.
- No loads should be lifted over the wellhead cages which exceed the structural protection provided by the cage.
- Drilling personnel will not enter above grade, producing well cellars.

H. Demobilization

Location handover will occur after the rig is off location and the WSS and production operator have completed a location inspection together.

For the complete SimOps manual, see attachment #9.

ATTACHMENT 1
PRE-SPUD SIGN IN SHEET

Southwestern Energy Pre-Spud Sign In Sheet

ALL SWN Employees must sign in upon arrival NO EXCEPTIONS!!

List time, date, and department.

Name Please Print	Department	Date	Time In	Time Out

ATTACHMENT 2
WELL SITE SAFETY MEETING SIGN IN SHEET

Southwestern Energy Well Site Safety Meeting Sign in Sheet
ALL SWN employees must sign in upon arrival NO EXCEPTIONS
List date, time in, time out, and phase of work.

Name Please Print	Department	Date	Time In	Time Out	Phase of Work (Drilling, Completions, or Workover)

ATTACHMENT 3
VISITOR SIGN IN SHEET

Southwestern Energy Sign In Sheet

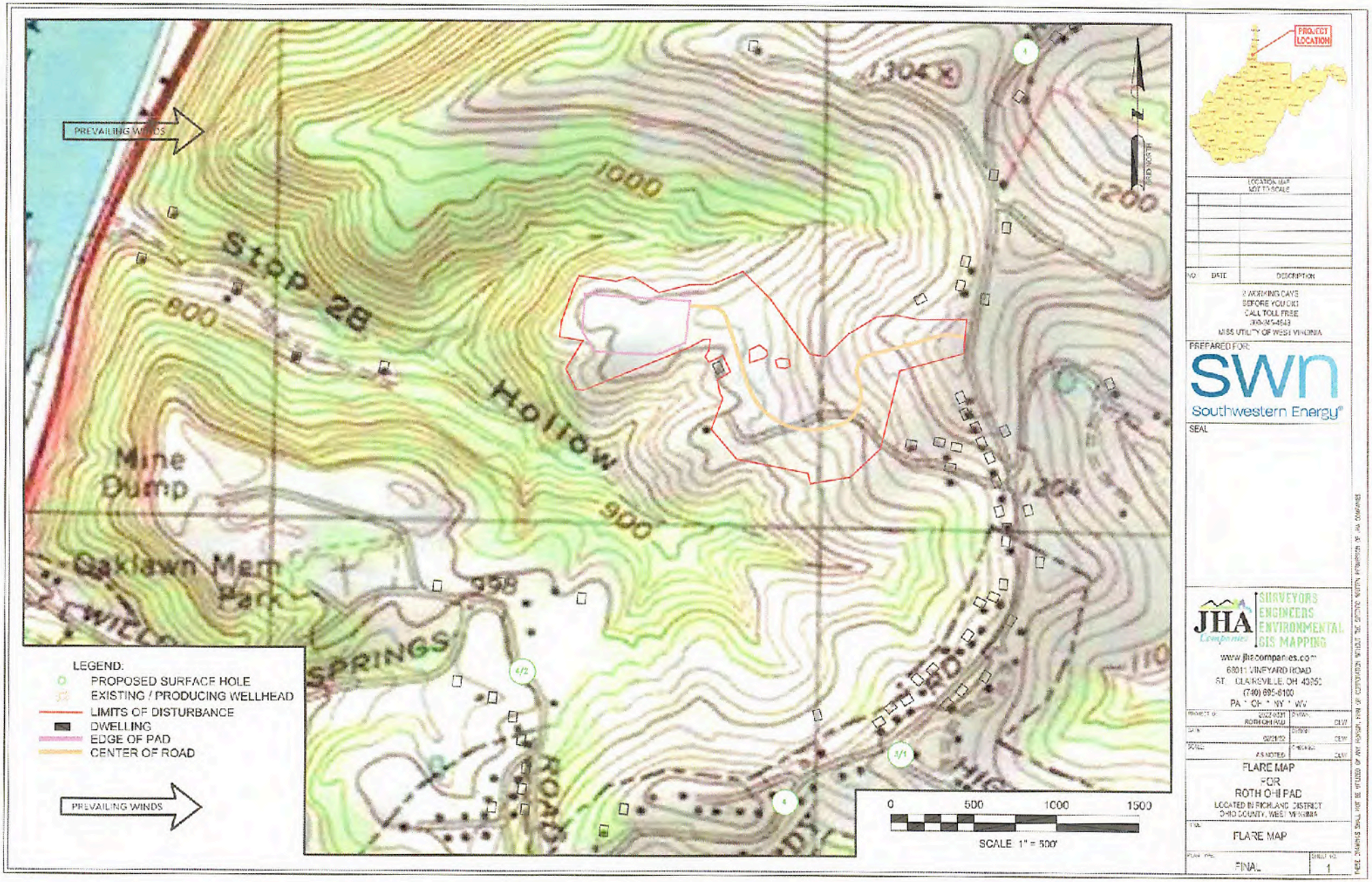
All visitors must sign in upon arrival NO EXCEPTIONS!!! List time, date, company.
This allows Southwestern to monitor all visitors to their well site's
Hard hats, safet glasse, steel toe boots are required to be worn at all times on
Anyone has the right to stop the job for Safety. SAFETY is everybodys business!!

ALL ACCIDENTS OR INCIDENTS MUST BE REPORTED TO COMPANY MAN/RIG MANAGER NO MATTER HOW Tap Training

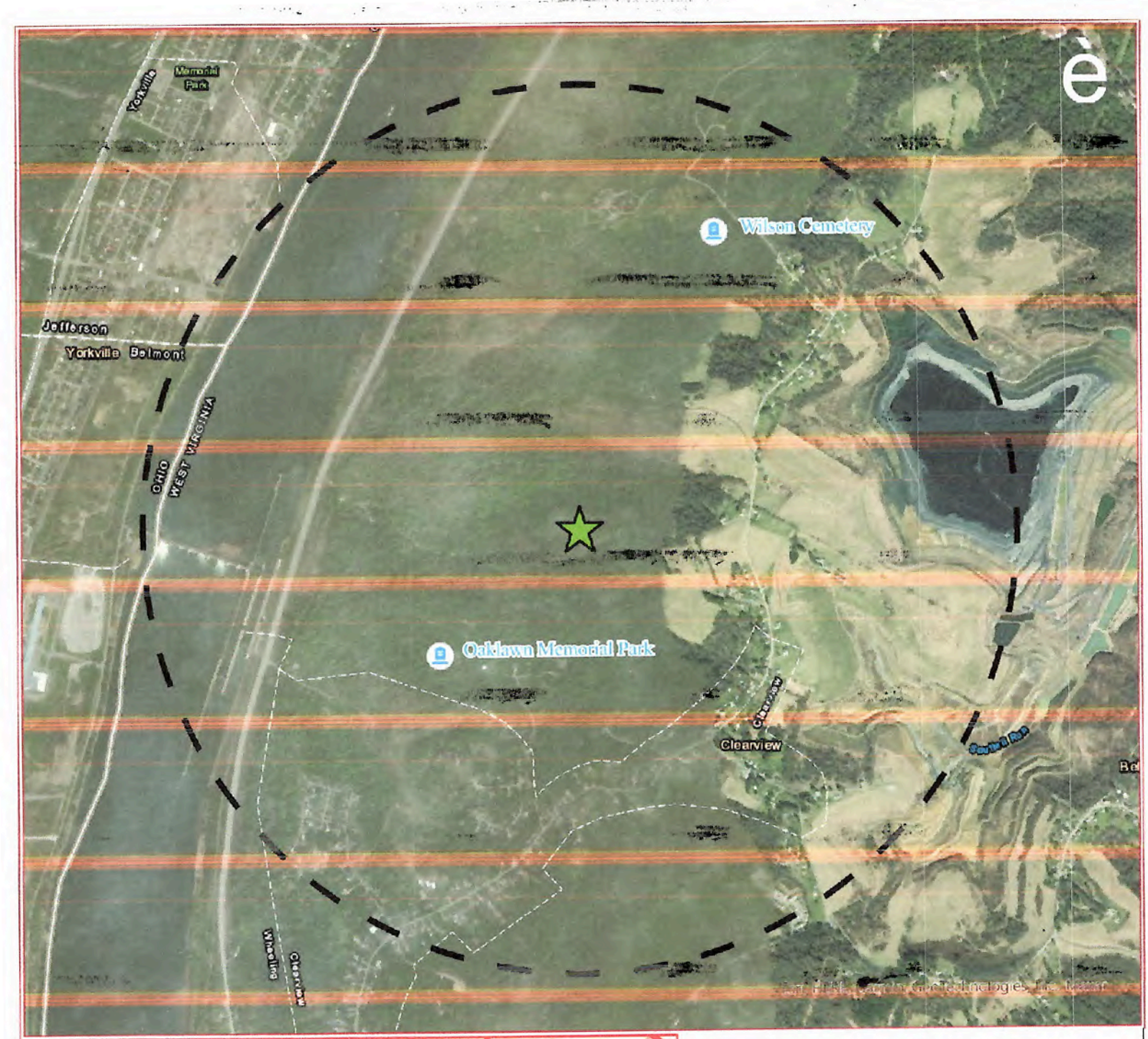
Name Please Print	Company Name	Date	Time In	Time Out	Injury?	Yes	No
						☐	☐
						☐	☐
						☐	☐

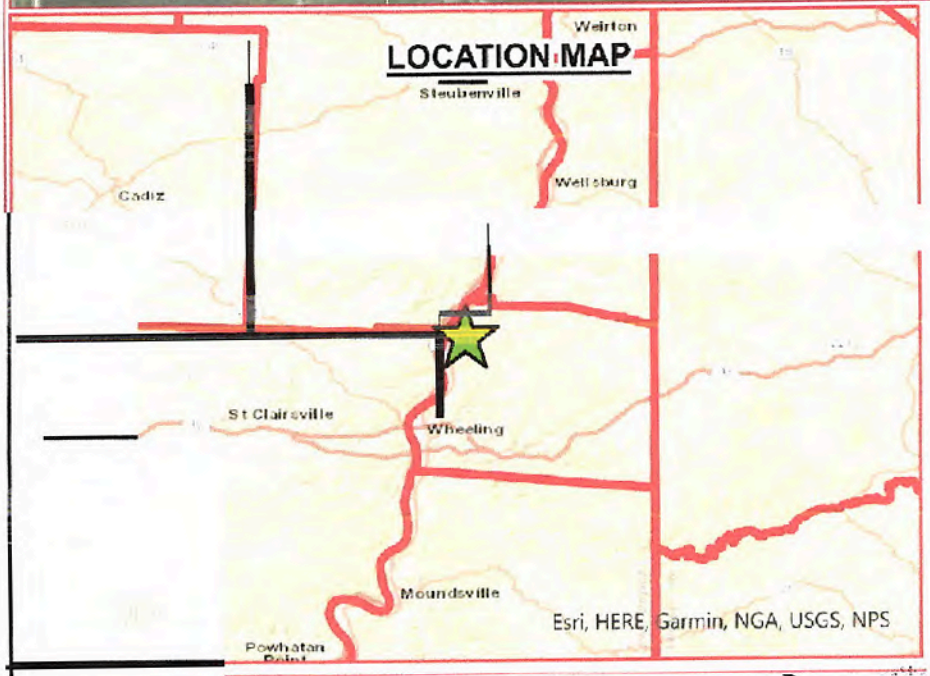
ATTACHMENT 4
PLAN VIEW MAP




PREVAILING WINDS
1304'
1000
1200
Stop 28
800
Hollow
900
Mine
Dump
Oaklawn Mem
Park
SPRINGS
ROAD
LEGEND:
PROPOSED SURFACE HOLE
EXISTING / PRODUCING WELLHEAD
LIMITS OF DISTURBANCE
DWELLING
EDGE OF PAD
CENTER OF ROAD
PREVAILING WINDS
0
500
1000
1500
SCALE: 1" = 500'
PROJECT LOCATION
LOCATION MAP
NOT TO SCALE
NO. DATE DESCRIPTION
2 WORKING DAYS
BEFORE YOU DIG!
CALL TOLL FREE
(800)245-4545
MISS UTILITY OF WEST VIRGINIA
PREPARED FOR:
SWN
Southwestern Energy
SEAL
JHA
SURVEYORS
ENGINEERS
ENVIRONMENTAL
GIS MAPPING
www.jhacompanies.com
68011 VINEYARD ROAD
ST. CLAIRSVILLE, OH 43950
(740) 695-8100
PA * OH * NY * WV
PROJECT #: 2022-0021 ROTH OH PAD
DRAWN: CEW
DATE: 02/24/22
CHECKED:
SCALE: AS NOTED
FLARE MAP
FOR
ROTH OH PAD
LOCATED IN RICHLAND DISTRICT
OHIO COUNTY, WEST VIRGINIA
TITLE:
FLARE MAP
PLAN TYPE:
FINAL
SHEET NO.
1
THESE PLANS ARE THE PROPERTY OF JHA COMPANIES, LLC AND SHALL NOT BE REPRODUCED, COPIED OR USED IN ANY WAY WITHOUT THE EXPRESSED WRITTEN CONSENT OF JHA COMPANIES, LLC

ATTACHMENT 5
1-MILE RADIUS TOPO MAP





Legend

- Roth Pad
- 1 Mile Buffer
- Schools
- Cemeteries
- Churches

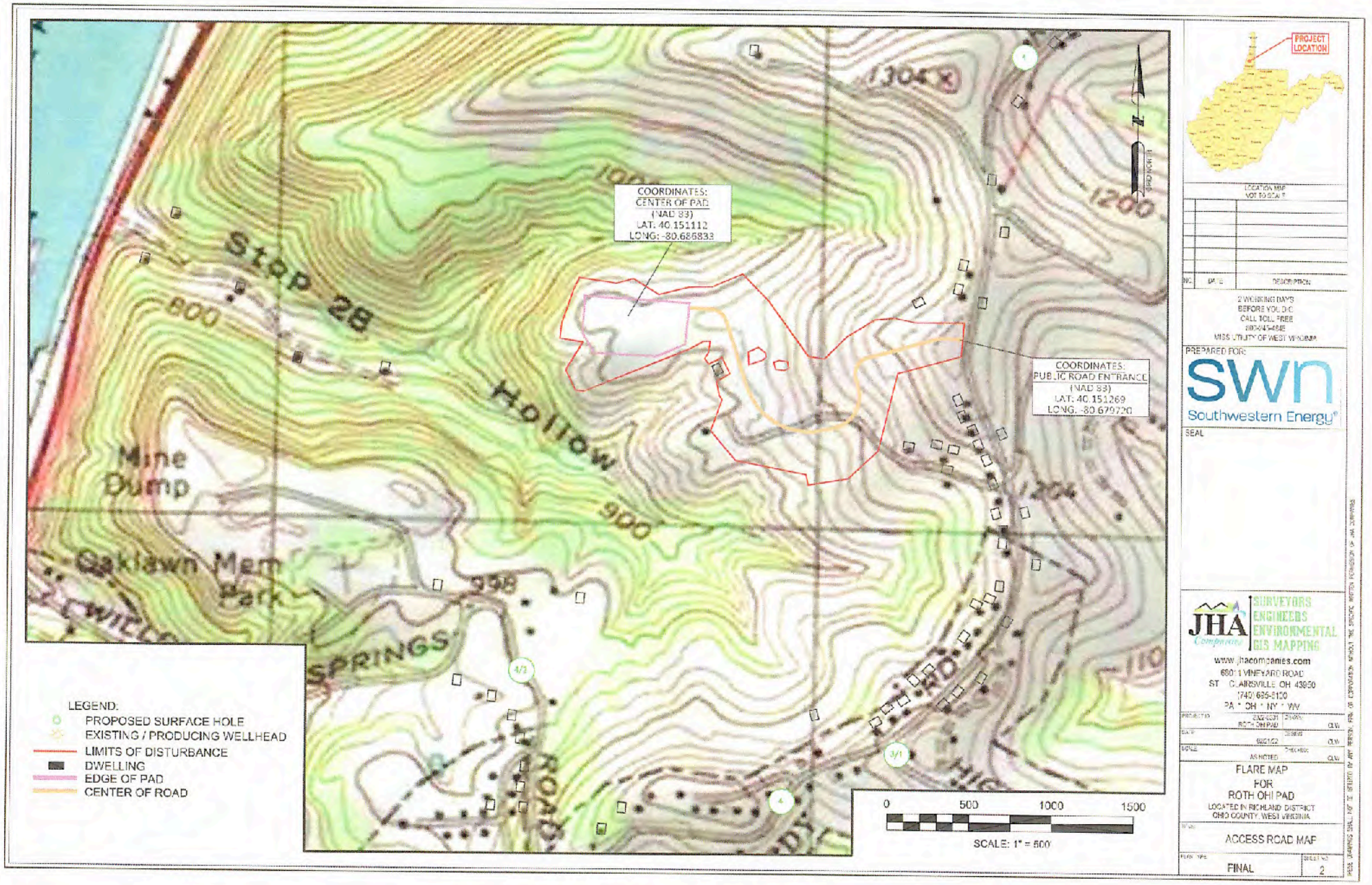
Roth Pad
Ohio County, West Virginia

Coordinate System: NAD 1983 StatePlane West Virginia North FIPS 4701 Feet

ATTACHMENT 6
EVACUATION PLAN


LEGEND
EXISTING PAVED ROAD
EXISTING CENTERLINE OF ROAD
EXISTING GRAVEL ROAD
EXISTING PROPERTY LINES
EXISTING BUILDING
EXISTING STREAM
EXISTING WETLAND
EXISTING TREELINE
CENTER OF PAD RADIUS
PROPOSED PAD
PROPOSED AUXILIARY PAD
PROPOSED ACCESS ROAD
PROJECT LOCATION
LOCATION MAP NOT TO SCALE
UNNAMED TRIBUTARIES
WELL SITE ACCESS/EVACUATION ROUTE
WELL PAD CENTER
LAT 40.151112° N
LONG -80.69583° W
MUSTER POINT &
ACCESS ROAD ENTRANCE
LAT 40.066885 N
LONG -80.654274 W
2,640 RADIUS
625' RADIUS
Oaklawn
Memorial
Park
REILLY DELAPLAIN ROAD
CO. RT 4
EVACUATION ROUTE
N
300 0 300 600
NO. DATE DESCRIPTION
PREPARED FOR:
SWN
Southwestern Energy
SEAL
PREPARED BY:
ASCENT
Consulting & Engineering
2598
KWA
2/18/2022
EMS
AS SHOWN
MHN
CONSTRUCTION PLANS FOR
SWN PRODUCTION COMPANY, LLC
ROTH PAD
OHIO COUNTY, WV
EVACUATION PLAN WITH USGS MAP
APPROVED FOR PERMITS
4

ATTACHMENT 7
WELL LOCATION TOPO MAP


COORDINATES:
CENTER OF PAD
(NAD 83)
LAT: 40.151112
LONG: -80.686833
COORDINATES:
PUBLIC ROAD ENTRANCE
(NAD 83)
LAT: 40.151269
LONG: -80.679720
Stop 28
Hollow
Mine
Dump
Oaklawn Mem
Park
SPRINGS
ROAD
1304
1200
1204
900
800
998
LEGEND:
PROPOSED SURFACE HOLE
EXISTING / PRODUCING WELLHEAD
LIMITS OF DISTURBANCE
DWELLING
EDGE OF PAD
CENTER OF ROAD
0
500
1000
1500
SCALE: 1" = 500'
PROJECT LOCATION
LOCATION MAP
NOT TO SCALE
NO.
DATE
DESCRIPTION
2 WORKING DAYS
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66011 VINEYARD ROAD
ST. CLAIRSVILLE, OH 43950
(740) 695-8100
PA * OH * NY * WV
PROJECTED
ROTH OHI PAD
CLW
DATE
6/02/22
CLW
SCALE
AS NOTED
CHECKED
CLW
FLARE MAP
FOR
ROTH OHI PAD
LOCATED IN RICHLAND DISTRICT
OHIO COUNTY, WEST VIRGINIA
ACCESS ROAD MAP
FILE TYPE
FINAL
SHEET NO.
2
THIS DRAWING SHALL NOT BE USED IN ANY MANNER, FOR OR CONVEYED WITHOUT THE SPECIFIC WRITTEN PERMISSION OF JHA COMPANIES

ATTACHMENT 8
WV NOTIFICATION NUMBERS

West Virginia Incident Notification Numbers

All SWN employee office and cell phone numbers can be found in the employee directory on SWNet.

Name	Title	Office	Cell	Home
Derek Cutright	SVP & Dept Head - SW APP	(832) 796-7473	(713) 471-6657	
Chris Flanagan	Area Manager - SW APP	(304) 884-1626	(304) 203-4985	
Shawn Jackson	Operations Manager - SW APP	304-884-1618	(304) 641-3204	
Chris Lacy	VP General Counsel & Corporate Secretary	(832) 796-7877	(832) 723-4915	
Robin Valenti	Senior HR Business Partner	(304) 884-1616	(832) 702-4828	
HSE Department				
Olivia McNamara	Vice President HSE	(832) 796-2747	(348) 796-2747	
Matt Boggs	HSE Supervisor - SW APP	(304) 884-1614	(501) 581-1692	
Kenny Durst	Sr. HSE Coordinator - SW APP	(304) 884-1707	(501) 358-9354	
Regulatory				
Carla Suszkowski	Regulatory Manager	(832) 796-6372	(724) 561-8129	
Chad Kellman	Regulatory Supervisor	(304) 884-1648	(501) 428-3114	
Brittany Woody	Senior Regulatory Analyst	(304) 884-1613	(304) 997-2598	
Production Operations				
Donny McHenry	Sr. Production Foreman	(304) 884-1624	(304) 641-5518	
JD Davidson	Senior Completions Foreman	(570) 690-9428	(570) 996-4266	
Nick Flesher	Completions Foreman	(304) 884-1661		
Construction/LMG Operations				
John Dubowski	Construction Superintendent	(304) 884-1678	(346) 773-6078	
Drilling Operations				
Cole Barron	Senior Drilling Engineer	(832) 796-2966	(281) 777-2027	
Daniel Hughes	Well Site Supervisor II		(681) 433-9272	
Joel Still	Well Site Supervisor II		(304) 439-4404	
Brad Riley	Rig Operations Superintendent	(304) 884-1710	(304) 517-3105	
Water Team				
Bill Vavrek	Senior Water Team Supervisor - SW APP	(304) 884-1693	(304) 641-6507	
Completions				
Aaron Balderson	Completions Superintendent	(304) 884-1638	(713) 829-4638	

Last Revised 3/4/2022



ATTACHMENT 9
COMPLETIONS SIMOPS MANUAL

SOUTHWESTERN ENERGY PRODUCTION COMPANY LLC COMPLETIONS AND PRODUCTION SIMOPS MANUAL

TABLE OF CONTENTS

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2. CELLAR ENTRY 3
3. PAD PREPARATION 4
4. FRAC MOBILIZATION 4
5. COMPLETIONS OPERATIONS 5
6. CONTINGENCY OPERATIONS 8

1. INTRODUCTION

The purpose of this manual is to provide detailed procedures governing simultaneous operations (SimOps) OF Completions and Production on locations in the Southwest Appalachia Division of Southwestern Energy Production Company LLC (SWNPC). These operations may occur with Cellar Tech cellars or conventional surface wellheads.

2. CELLAR ENTRY (IF APPLICABLE)

Cellar entry while cover plates are in place is prohibited (plates should not be in place during completion operations). Cellar entry without a gas monitor is prohibited.

Completions personnel will not enter producing well cellars. Production personnel may enter existing well cellars after the following conditions have been confirmed:

a. LEL readings confirm no gas is present in the cellar or on surface.
b. All pressure has been released from production flow lines.
c. Completions operations have been suspended and the high pressure exclusion zone (HPEZ) is inactive.
d. Cellar cover plates are confirmed to be gone and handrails or other barriers are in place to prevent someone from falling into cellar.
e. Secondary LEL measurements confirm no gas is present at the base of cellar below grading.
f. JSEA has been reviewed with completions WSS and Production well operator.

Completions WSS or wellhead technician under direction of completions WSS may enter new well cellars to perform standard completions related tasks. New well cellar entry will be considered non-permit required, confined space entry after LEL measurements have confirmed no gas is present and reclassification permit has been completed. Personnel entering cellar shall wear personal LEL monitors.

New well cellar entry after an LEL detection and/or emergency shut down (ESD) in a producing well cellar in the same trench is prohibited. Work should be suspended as soon as feasible after an LEL detection and/or ESD in a producing cellar located in an offset trench.

Specific cellar entry requirements regarding completions operations or contingency operations are addressed in the following sections.

3. PAD PREPARATION

An inspection of each existing well head will be performed within 1 week of frac prep operations. The inspection should include visual and FLIR camera techniques to confirm there are no leaks present.

Completions personnel will inspect the pad prior to containment installation and document all ground stains and/or equipment issues with photographs and send an email to the completions engineer, foreman, and superintendent.

Production will function test and service all well head valves and ensure a baffle between the existing producing wells and the planned wells in the same trench is installed, if applicable.

Production LEL monitoring stations will be in place at any locations determined by the completions team. The monitors should, at a minimum, be in front of the production equipment, behind the concrete jersey barriers. Emergency shut down (ESD) controls will be placed at the locations directed by the completions team and remote ESD will be assigned to the WSS. Additional production LEL monitors can be installed, the following locations will have a LEL monitors.

- Combustor
- Cellars (If Applicable)
- Tank Battery
- Compressors
- Stabilizers
- GPUs

Confirm jersey barriers have been placed in front of all surface equipment including the gas processing unit (GPU)/sand traps, flash stabilizers, compressors, vapor recovery unit (VRU), tank battery, combustor, and exposed production flowlines.

All personnel working on location for completions during pad preparation will receive instruction on ESD operation & location and LEL monitors before starting operations.

If applicable containment plastic will be installed into and draped into cellars.

All lifts for the cellar plates will be made using two tag lines to guide the plate into position.

Hand rails must be installed immediately after a plate is removed from the cellar trench, if applicable.

Driving across a cellar cover is prohibited.

4. FRAC MOBILIZATION

1) If applicable, cellar cover plates should be removed and handrails installed prior to completions MIRU. If cellar cover plates are still in place, wellsite supervisor (WSS) should contact production well operator and completions foreman. Handrails will be in place at all times. If a cellar cover plate needs to be installed in place of a handrail

for any reason, WSS will contact completions foreman, superintendent, and completions engineer.

2) If applicable, suitable wellhead cages should be positioned over all existing above ground wellheads within the operational footprint.
3) The Well Site Supervisor (WSS) will be the Person in Charge (PiC) from the start of frac mobilization forward.
4) After finishing frac equipment placement and before starting operations, install completions LEL monitors as directed by the completions team. These LEL monitors are to be placed in addition to the production LEL monitors already in place. Completions LEL monitors will be installed at the following locations:
    - Wellheads (cellars)
    - Blender
    - Flowback tanks
    - Produced water unloading area
5) The LEL detectors on location are to be set to alarm at 10% of the lower explosive limit (LEL) for the atmosphere they are testing. An active alarm on the LEL detector at 10% indicates the methane level in the atmosphere is at 10% of the lowest amount required for ignition.
6) After finishing frac equipment placement and before starting operations, install completions ESDs. ESDs installed in front of production equipment will remain in place. Production strobe light should be tied into all ESDs. Completions ESDs will be installed at the following locations:
    - Inside frac van
    - Tank loading area
    - Wellhead area
    - Muster point

5. COMPLETIONS OPERATIONS

If applicable, cellars of new wells will be classified as non-permit required, confined space and will require the same procedures for entry as conventional cellars at a minimum. Additional air monitoring requirements are stipulated below. Unless noted otherwise, LEL detection limits will be set at 10% of the LEL limit. All air monitor alarms shall be immediately reported to the WSS. Only the WSS has the authority to resume operations after an alarm. WSS should monitor water level in cellars and remove any excess water as necessary.

Completions Operations

1) Production group should monitor pressure on active wells and determine when to shut in if necessary.

2) Crane for wireline operations must be situated so that under no circumstance is a suspended load moved over a producing well.
3) SWN FLIR camera should be available so WH facilities can be checked for leaks periodically. Camera should be used to check for leaks once per week during frac and drillout operations.
4) A windsock should be clearly visible from any point on location. At least 3 windsocks should be placed on location.
5) Hot work is not permitted on location unless signed off by completions superintendent and completions manager.

Frac Hit Operations

If a producing well shows an increase in pressure indicating a frac hit, follow the procedures below based on the level of frac hit. A frac hit should be identified through the production well operator monitoring Cygnet. These procedures should be followed assuming the frac hit did not cause a well control event. In the case of a well control event, utilize the well control operations section below.

1) If deemed necessary by the production operator or if pressure on offset wellhead exceeds 4000 psi, cut sand concentration and attempt to flush one full wellbore volume. Hard shutdown can be performed if necessary. Production well operator may shut in producing well through GPU or ESD if necessary.
2) If performing flush, drop rate until corresponding pressure is below 7,000 psi.
   a) Attempt to flush at 60-80 bpm
   b) Do not increase FR concentration to get pressure below 7,000 psi
3) Once well is successfully flushed, shut down and bleed off surface pressure.
4) Once HPEZ is inactive, production personnel will manually secure wellhead.
5) Once producing wells are secure, all employees will report to muster point for a safety standdown.

Once operationally a frac hit has been handled, an operations call between the WSS, foreman, superintendent, completions engineer, completions manager, production foreman, production engineer, and production manager will be conducted. Frac operations are to be suspended until clearance to resume operations has been given by completions and production management.

LEL, ESD, and Well Control Events

In the event that an LEL alarm is confirmed to be a real event or any type of well control incident occurs, the following protocol should be followed.

1) Production LEL alarms will be reported to the production operator and WSS immediately.
2) Completions operations will be suspended and all personnel will report to their assigned SimOps position in the table below. The new well cellar, if applicable, will be evacuated for all LEL and/or ESD events.

Position	SimOps Station	Assignment after Confirmation
Frac WSS and Production Well Operator **(Frac WSS will be incident commander)**	Event location	Confirm event. Radio over frac and wireline channels to evacuate to muster point. Frac WSS to kill auxiliary engines. Light plants engines should be killed per WSS discretion based on amount of light necessary to maintain pad safety.
Wireline WSS and Frac Stack Technician	Accumulators	Use ESD to shut in producing wells. Use accumulators to shut in on hydraulic master valve.
Frac Supervisor	Data Van	Use e-stop button inside frac van to kill frac pumps. Sound emergency horn. Clear frac van of any employees.
Frac Line Boss	Inactive HPEZ	Clear grounds/HPEZ of any employees.
Wireline Engineer	Wireline area	Kill wireline truck engine. Clear wireline and crane area of any employees.
Water Supervisor	Water transfer area	Kill boost pump engines. Clear water transfer area of any employees.
SEAC	Muster point	Account for all team members using sign in sheet and act as site safety officer.

3) The completion foreman, superintendent, completions engineer, and production superintendent should be notified as soon as possible.
4) Once operationally the event has been contained, an operations call between the WSS, foreman, superintendent, completions engineer, completions manager, production foreman, production engineer, and production manager will be conducted. Frac operations are to be suspended until clearance to resume operations has been given by completions and production management.

SimOps Drills

SimOps drills will be conducted prior to beginning fracing first stage and every Thursday. Day shift and night shift should each partake in a simops drill. To perform a SimOps drill presonel should man stations as outlined above.

6. CONTINGENCY OPERATIONS

Surface Equipment Leaks

1) Minor surface leaks will be isolated via Surface Shutdown procedures. Surface shut down take the production equipment offline, but will not ESD the producing wells in the cellar if applicable.
2) If the LEL monitors near the rig alarm after a surface shutdown the pad ESD will be activated to shut-in producing wells at the wellhead.
3) Completions personnel will not enter production equipment area. Production personnel will repair and test all production related equipment.
4) All planned venting of surface equipment should be discussed with the WSS prior to beginning the venting process. Estimated vent volumes, distance to the nearest engine and wind should be considered when determining the timing of the vent.

    A. Low volume, long distance, and/or favorable wind direction may allow frac operations to continue.
    B. Higher volumes, shorter distances to engines, or unfavorable wind directions will require frac operations to suspend in preparation for a possible engine shut down due to an LEL alarm.
    C. When possible all venting will be routed through the combustor.

Producing Cellar Leaks (If Applicable)

1) Cellar leaks will be separated into two categories, upstream of the ESD (well head) and downstream of the ESD.

    A. Downstream leaks can be isolated from the well using the ESD. A downstream leak in the cellar will be detected by the cellar LEL meter which will automatically trigger the ESD to shut in all producing wells and ESD the surface equipment.
        a. Blow down surface equipment
        b. Monitor surface LEL reading near leaking cellar
        c. Continue venting cellar
        d. If LEL alarm continues in cellar, assume leak is upstream of ESD
    B. Leaks which are upstream from the ESD cannot be stopped by shutting in the well. Upstream leaks will be classified as small or large.
        a. **Small leak:** Leak is contained to the cellar utilizing existing cellar ventilation system with no flare created and 0% LEL readings around the cellars.

- Confirm drilling operations are not producing the gas which triggered the alarm. Check new well cellar and shakers.
- If LEL remains at 0% adjacent to producing cellar, take a second LEL measurement from the alarming cellar.
- If second LEL confirms alarm, adjust ventilation system and/or cellar plate curtain
- If LEL alarms sound adjacent to cellar the leak is immediately reclassified as a large leak and well kill operations being.

b. **Large leak**: LEL alarms in cellar and on surface near producing wells after surface blow down or ventilation system flare or flowing cellar. Well kill operations will start immediately for large leaks.

2) No initial LEL alarm will be considered a false alarm without independent confirmation by a second monitor. If a cellar LEL triggers an ESD and the alarm continues after surface blow down without surface LEL alarms, a second LEL reading will be taken by running a meter tube into the cellar through one of the cellar plate perforations. If the second meter confirms a safe atmosphere, the cellar LEL can be disabled and replaced by the surface alarm. The well cannot be returned to sales until the cellar LEL monitor is repaired or replaced.

Producing Cellar Entry

1) If possible, cellar entry will be timed to coincide with non-critical operation periods for completions, preferable casing points.
2) Handrails and stair will be in place before production personnel entry the producing cellar.
3) A spotter will remain at the cellar while personnel are inside.
4) Entry below cellar grating is prohibited without management approval. The space below grating in producing well cellars is consider permit required confined space and cannot be accessed without additional training and equipment.

Producing Surface Well Leaks (If Applicable)

5) Surface leaks will be separated into two categories, upstream of the ESD (well head) and downstream of the ESD.

C. Downstream leaks can be isolated from the well using the ESD. A downstream leak will be detected by the LEL meter which will automatically trigger the ESD to shut in all producing wells and ESD the surface equipment.

a. Blow down surface equipment

b. Monitor surface LEL reading near leaking cellar
c. Continue venting cellar
d. If LEL alarm continues in cellar, assume leak is upstream of ESD

D. Leaks which are upstream from the ESD cannot be stopped by shutting in the well. Upstream leaks will be classified as small or large.
   a. **Small leak:** Leak with no flare created and 0% LEL readings around the well/s.
      - Confirm frac operations are not producing the gas which triggered the alarm. Check new well tin horn cellar and shakers.
      - If LEL remains at 0% adjacent to producing well, take a second LEL measurement from the alarming well.
      - If LEL alarms sound adjacent to cellar the leak is immediately reclassified as a large leak and well kill operations being.

   b. **Large leak:** redundant LEL alarms on surface near producing wells after surface blow down. Well kill operations will start immediately for large leaks.



IV-35
(Rev 8-81)

RECEIVED
AUG 3 1 1984
OIL & GAS DIVISION
DEPT. OF MINES

State of West Virginia
Department of Mines
Oil and Gas Division

Date 08/22/84
Operator's
Well No. 2 - 1932
Farm East Dolly Sods #2
API No. 47 - 023 - 0007

WELL OPERATOR'S REPORT (CONFIDENTIAL WELL)
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil ___ / Gas x / Liquid Injection ___ / Waste Disposal ___ /
(If "Gas," Production x / Underground Storage ___ / Deep x / Shallow ___ /)

LOCATION: Elevation: 2705.65' Watershed High Ridge Run
District: Milroy County Grant Quadrangle Hopeville

COMPANY UNION DRILLING, INC.
ADDRESS P. O. Drawer 40, Buckhannon, WV 26201
DESIGNATED AGENT Joseph C. Vanzant, Jr.
ADDRESS P. O. Drawer 40, Buckhannon, WV 26201
SURFACE OWNER United State of America
ADDRESS c/o U.S. Forest Service, P. O. Box 1548 Elkins, WV 26241
MINERAL RIGHTS OWNER See Page 2
ADDRESS
OIL AND GAS INSPECTOR FOR THIS WORK Philip Tracy ADDRESS Forest Festival Terrace, Apt. #24, Elkins, WV 26241
PERMIT ISSUED January 23, 1984
DRILLING COMMENCED 04/14/84
DRILLING COMPLETED 05/31/84
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.		30'	
13-10"		211'	189 cf
9 5/8	4098.67'	4098.67'	1883.5cf
8 5/8			
7			
5 1/2		8881.18'	1243.2 cf
4 1/2			
3			
2		8397.34'	
Liners used			

GEOLOGICAL TARGET FORMATION Oriskany Depth 8820 feet
Depth of completed well 8820 feet Rotary x / Cable Tools ___
Water strata depth: Fresh 276 feet; Salt ___ feet
Coal seam depths: None Is coal being mined in the area? ___

GRANT 0007

OPEN FLOW DATA
Producing formation Oriskany Pay zone depth ___ feet
Gas: Initial open flow 301 Mcf/d Oil: Initial open flow ___ Bbl/d
Final open flow 933 Mcf/d Final open flow ___ Bbl/d
Time of open flow between initial and final tests ? hours
Static rock pressure 3000 psig (surface measurement) after 24 hours shut in
(If applicable due to multiple completion--)
Second producing formation ___ Pay zone depth ___ feet
Gas: Initial open flow ___ Mcf/d Oil: Initial open flow ___ Bbl/d
Final open flow ___ Mcf/d Oil: Final open flow ___ Bbl/d
Time of open flow between initial and final tests ___ hours
Static rock pressure ___ psig (surface measurement) after ___ hours shut in

(Continue on reverse side)

SWN Production Company, LLC
1300 Fort Pierpont Dr, Ste 201
Morgantown, WV 26508
Tel: 304 884 1610
Fax: 304 471 2497
www.swn.com

April 8, 2022

Mr. Gayne Knitowski
Oil & Gas Inspector
West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304

Subject: Response to Notice of Violation No. 11796
SWN Production Company, LLC
Farm Name: Shannon Fields
Well No. 210H
Union District, Ohio County, West Virginia

Dear Mr. Knitowski:

SWN Production Company, LLC ("SWNPC") hereby respectfully submits to the West Virginia Department of Environmental Protection (the "Department") this response to the Notice of Violation (the "NOV") issued by the Department and received by SWNPC on April 6, 2022. The NOV was issued regarding "Condition of Permit: The Oil and Gas inspector is to be notified twenty-four (24) hours before any permitted well work is commenced."

The NOV indicates that it was found, on the day of the site inspection (April 5, 2022), that construction had commenced on the Shannon Fields as early as March 28, 2022. The OOG inspector was not notified until April 5, 2022.

The NOV requires SWNPC to abate the above-referenced violation by April 13, 2022. Per the NOV, to abate the violation SWNPC must do the following:

> Provide the Office of Oil and Gas a letter stating that all departments have been informed that it is required to give 24 hour notice prior to commencement of any permitted well work.

To abate the violation SWNPC is providing this letter as requested to confirm that all departments have been made aware of the fact that notification is required prior to any well work. In addition, it was discussed at length during the Civil Construction Department planning meeting on April 7, 2022 that notification must be made to the OOG inspector prior to commencement of any work on site, including installation of erosion and sedimentation controls.

We are hopeful that the above-described action of SWNPC address the Department's concerns identified in the NOV and that this written response adequately abates the violation.

The Right People doing the Right Things, wisely investing the cash flow from our underlying Assets, will create Value+®

Should the Department need additional information or have any questions regarding these violations, the NOV's or the content of this letter, please do not hesitate to contact me directly at 501-428-3114, or via email at chad_keilman@swn.com.

Respectfully submitted,

Chad Keilman
Environmental Supervisor

The Right People doing the Right Things, wisely investing the cash flow from our underlying Assets, will create Value+®

WW-6B
(04/15)

API NO. 47- 009 -
OPERATOR WELL NO. Shannon Fields OHI 210H
Well Pad Name: Shannon Fields OHI

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	069-Ohio	005-Rich	674-Wheeling
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Shannon Fields OHI 210H Well Pad Name: Shannon Fields OHI

3) Farm Name/Surface Owner: Shannon Fields, LLC Public Road Access: Boggs Hill Road (Country Route 15/1)

4) Elevation, current ground: 1232' Elevation, proposed post-construction: _____

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

6) Existing Pad: Yes or No No

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.03.01 08:22:08 -05'00'

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Target Top TVD- 6219', Target Base TVD- 6278', Anticipated Thickness- 59', Associated Pressure- 4081

8) Proposed Total Vertical Depth: 6256'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 20927'

11) Proposed Horizontal Leg Length: 14,133.69

12) Approximate Fresh Water Strata Depths: 351'

13) Method to Determine Fresh Water Depths: Deepest Nearby Water Well & Salinity Calculations from Timmy Minch OHI Pad

14) Approximate Saltwater Depths: 601' Salinity Profile

15) Approximate Coal Seam Depths: 503'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes _____ No x

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94#	126'	126'	CTS
Fresh Water	13 3/8"	New	H-40	48#	555'	555'	534 sx/CTS
Coal	See	Interm	Casing				
Intermediate	9 5/8"	New	J-55	36#	1930'	1930'	848 sx/CTS
Production	5 1/2"	New	HCP-110	20#	20927'	20927'	Tail 2786sx/ 100' Inside Intermediate
Tubing							
Liners							

Gayne Knitowski

Digitally signed by Gayne Knitowski
Date: 2022.03.01 08:22:30 -05'00'

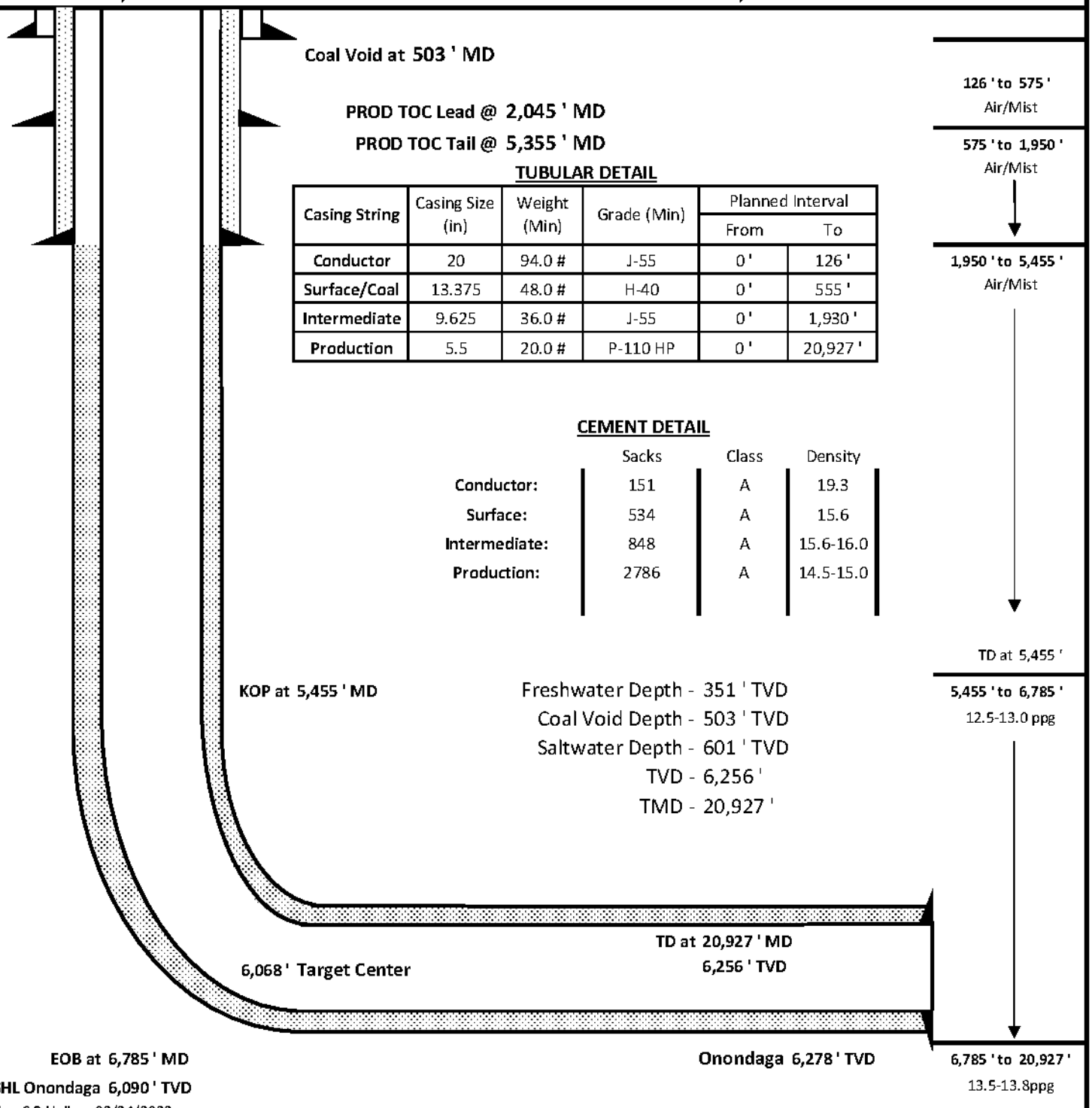
TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.20/30% Excess
Fresh Water	13 3/8"	17.5"	0.380	2730	633	Class A	1.20/30% Excess
Coal							
Intermediate	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/40% Excess
Production	5 1/2"	8 3/4"-8 1/2"	0.361	14360	10500	Class A	1.19/5% Excess
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

Southwestern Energy Company | Proposed Drilling Program

Well:	SHANNON FIELDS OHI 210	**Re-entry Rig:**	SDC 41
Field:	PANHANDLE FIELD WET	**Prospect:**	Marcellus Shale
County:	OHIO	**State:**	WV
SHL:	40.0884 Latitude -80.6578 Longitude		
BHL:	40.0513 Latitude -80.6422 Longitude		
KB Elev:	1,258 ft MSL KB: 26 ft AGL	**GL Elev:**	1,232 ft MSL



TUBULAR DETAIL

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval	
				From	To
Conductor	20	94.0 #	J-55	0 '	126 '
Surface/Coal	13.375	48.0 #	H-40	0 '	555 '
Intermediate	9.625	36.0 #	J-55	0 '	1,930 '
Production	5.5	20.0 #	P-110 HP	0 '	20,927 '

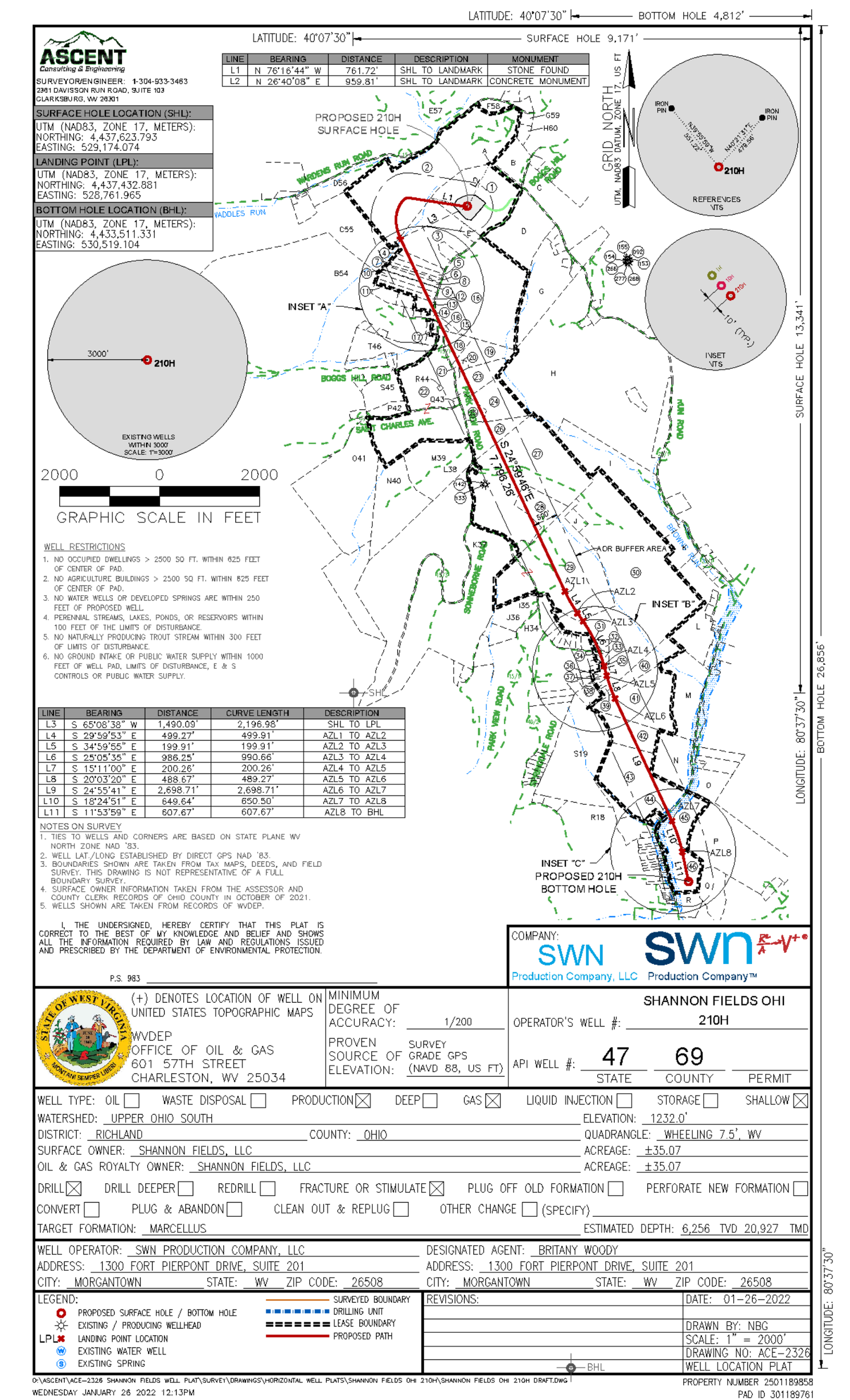
CEMENT DETAIL

	Sacks	Class	Density
Conductor:	151	A	19.3
Surface:	534	A	15.6
Intermediate:	848	A	15.6-16.0
Production:	2786	A	14.5-15.0

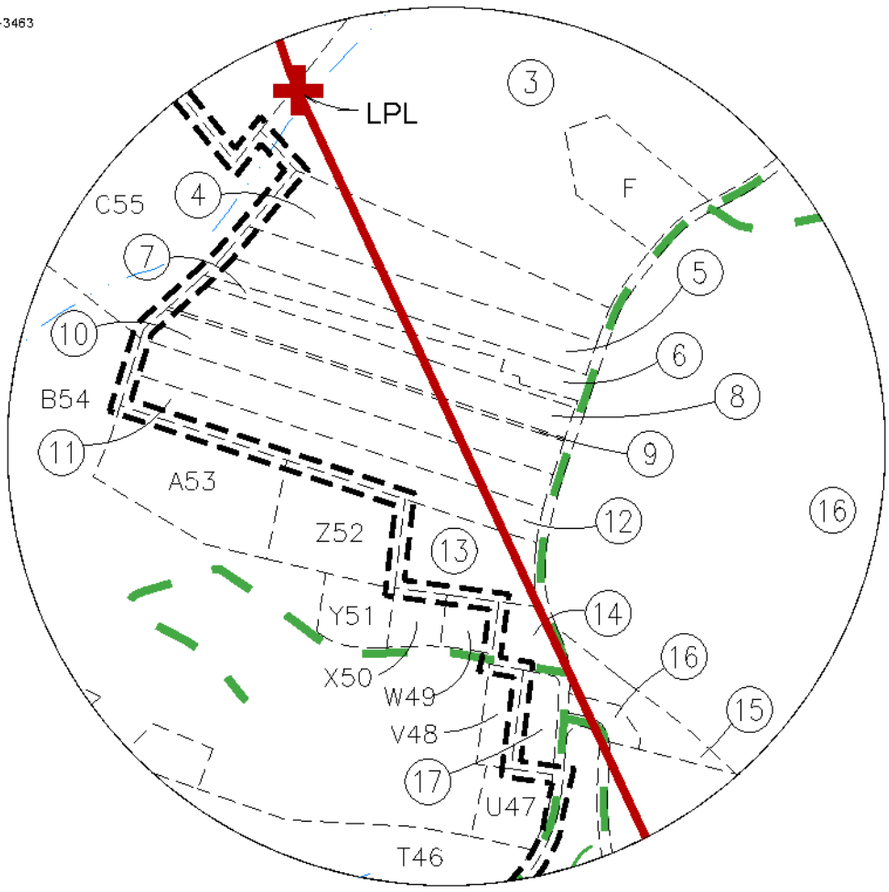
Freshwater Depth - 351 ' TVD
Coal Void Depth - 503 ' TVD
Saltwater Depth - 601 ' TVD
TVD - 6,256 '
TMD - 20,927 '

Created by: C R Hall on 02/24/2022

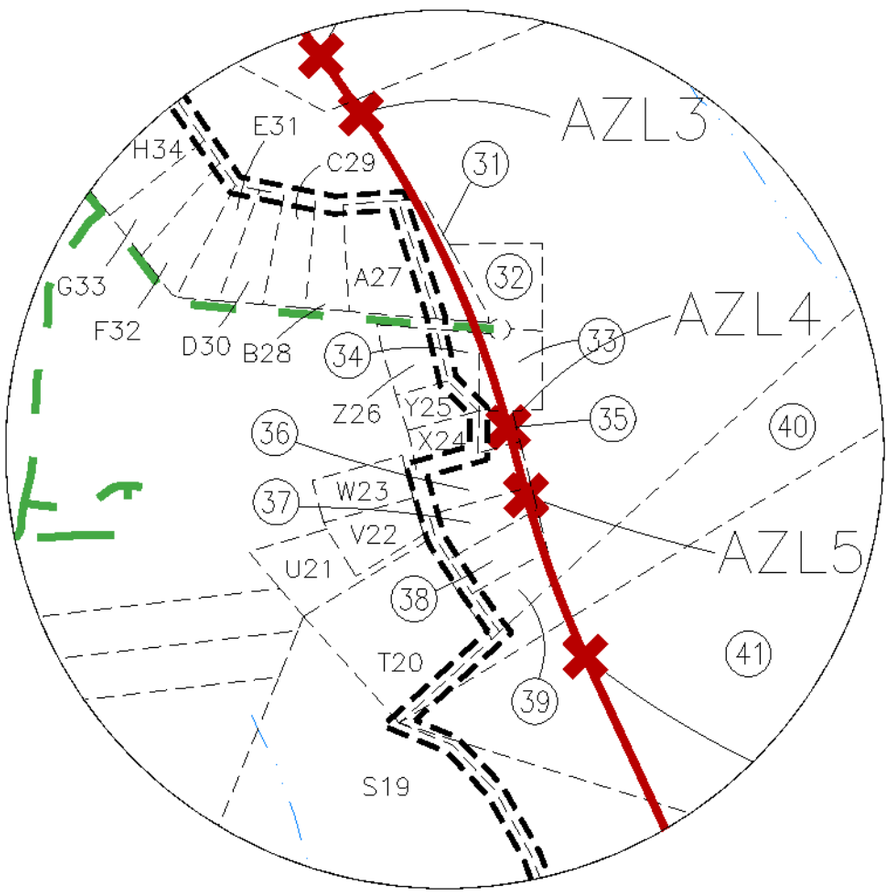
Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.03.01 08:22:49 -05'00'


LATITUDE: 40°07'30"
BOTTOM HOLE 4,812'
LATITUDE: 40°07'30"
SURFACE HOLE 9,171'
SURFACE HOLE 13,341'
LONGITUDE: 80°37'30"
BOTTOM HOLE 26,856'
LONGITUDE: 80°37'30"
ASCENT
Consulting & Engineering
SURVEYOR/ENGINEER: 1-304-933-3463
2361 DAVISSON RUN ROAD, SUITE 103
CLARKSBURG, WV 26301
SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,437,623.793
EASTING: 529,174.074
LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,437,432.881
EASTING: 528,761.965
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,433,511.331
EASTING: 530,519.104
LINE | BEARING | DISTANCE | DESCRIPTION | MONUMENT
L1 | N 76°16'44" W | 761.72' | SHL TO LANDMARK | STONE FOUND
L2 | N 26°40'08" E | 959.81' | SHL TO LANDMARK | CONCRETE MONUMENT
GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT
IRON PIN
IRON PIN
N39°55'58"W 351.22'
N40°21'31"E 479.56'
210H
REFERENCES
NTS
PROPOSED 210H
SURFACE HOLE
WARDENS RUN ROAD
WADDLES RUN
BOGGS HILL ROAD
INSET "A"
3000'
210H
EXISTING WELLS
WITHIN 3000'
SCALE: 1"=3000'
INSET
NTS
10' (TYP.)
BOGGS HILL ROAD
SAINT CHARLES AVE.
PARK VIEW ROAD
RUN ROAD
S 24°59'46" E
7,796.26'
AOR BUFFER AREA
BROWNS RUN
SONNEBORNE ROAD
INSET "B"
PARK VIEW ROAD
SUNDALE ROAD
INSET "C"
PROPOSED 210H
BOTTOM HOLE
2000
0
2000
GRAPHIC SCALE IN FEET
SHL
WELL RESTRICTIONS
1. NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
2. NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
3. NO WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
4. PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
6. NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.
LINE | BEARING | DISTANCE | CURVE LENGTH | DESCRIPTION
L3 | S 65°08'38" W | 1,490.09' | 2,196.98' | SHL TO LPL
L4 | S 29°59'53" E | 499.27' | 499.91' | AZL1 TO AZL2
L5 | S 34°59'55" E | 199.91' | 199.91' | AZL2 TO AZL3
L6 | S 25°05'35" E | 986.25' | 990.66' | AZL3 TO AZL4
L7 | S 15°11'00" E | 200.26' | 200.26' | AZL4 TO AZL5
L8 | S 20°03'20" E | 488.67' | 489.27' | AZL5 TO AZL6
L9 | S 24°55'41" E | 2,698.71' | 2,698.71' | AZL6 TO AZL7
L10 | S 18°24'51" E | 649.64' | 650.50' | AZL7 TO AZL8
L11 | S 11°53'59" E | 607.67' | 607.67' | AZL8 TO BHL
NOTES ON SURVEY
1. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE WV NORTH ZONE NAD '83.
2. WELL LAT./LONG ESTABLISHED BY DIRECT GPS NAD '83.
3. BOUNDARIES SHOWN ARE TAKEN FROM TAX MAPS, DEEDS, AND FIELD SURVEY. THIS DRAWING IS NOT REPRESENTATIVE OF A FULL BOUNDARY SURVEY.
4. SURFACE OWNER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF OHIO COUNTY IN OCTOBER OF 2021.
5. WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.
I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
P.S. 983
COMPANY:
SWN Production Company, LLC
SWN Production Company™
STATE OF WEST VIRGINIA
MONTANI SEMPER LIBERI
(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034
MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)
SHANNON FIELDS OHI
OPERATOR'S WELL #: 210H
API WELL #: 47 (STATE) 69 (COUNTY) (PERMIT)
WELL TYPE: OIL ☐ WASTE DISPOSAL ☐ PRODUCTION ☒ DEEP ☐ GAS ☒ LIQUID INJECTION ☐ STORAGE ☐ SHALLOW ☒
WATERSHED: UPPER OHIO SOUTH
ELEVATION: 1232.0'
DISTRICT: RICHLAND
COUNTY: OHIO
QUADRANGLE: WHEELING 7.5', WV
SURFACE OWNER: SHANNON FIELDS, LLC
ACREAGE: ±35.07
OIL & GAS ROYALTY OWNER: SHANNON FIELDS, LLC
ACREAGE: ±35.07
DRILL ☒ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☒ PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☐
CONVERT ☐ PLUG & ABANDON ☐ CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY)
TARGET FORMATION: MARCELLUS
ESTIMATED DEPTH: 6,256 TVD 20,927 TMD
WELL OPERATOR: SWN PRODUCTION COMPANY, LLC
ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508
DESIGNATED AGENT: BRITANY WOODY
ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508
LEGEND:
PROPOSED SURFACE HOLE / BOTTOM HOLE
EXISTING / PRODUCING WELLHEAD
LPL LANDING POINT LOCATION
EXISTING WATER WELL
EXISTING SPRING
SURVEYED BOUNDARY
DRILLING UNIT
LEASE BOUNDARY
PROPOSED PATH
REVISIONS:
DATE: 01-26-2022
DRAWN BY: NBG
SCALE: 1" = 2000'
DRAWING NO: ACE-2326
WELL LOCATION PLAT
BHL
O:\ASCENT\ACE-2326 SHANNON FIELDS WELL PLAT\SURVEY\DRAWINGS\HORIZONTAL WELL PLATS\SHANNON FIELDS OHI 210H\SHANNON FIELDS OHI 210H DRAFT.DWG
WEDNESDAY JANUARY 26 2022 12:13PM
PROPERTY NUMBER 2501189858
PAD ID 301189761

ASCENT
Consulting & Engineering
SURVEYOR/ENGINEER: 1-304-933-3463
2361 DAVISSON RUN ROAD, SUITE 103
CLARKSBURG, WV 26301



BLOW UP INSET 1
SCALE: 1"=500'

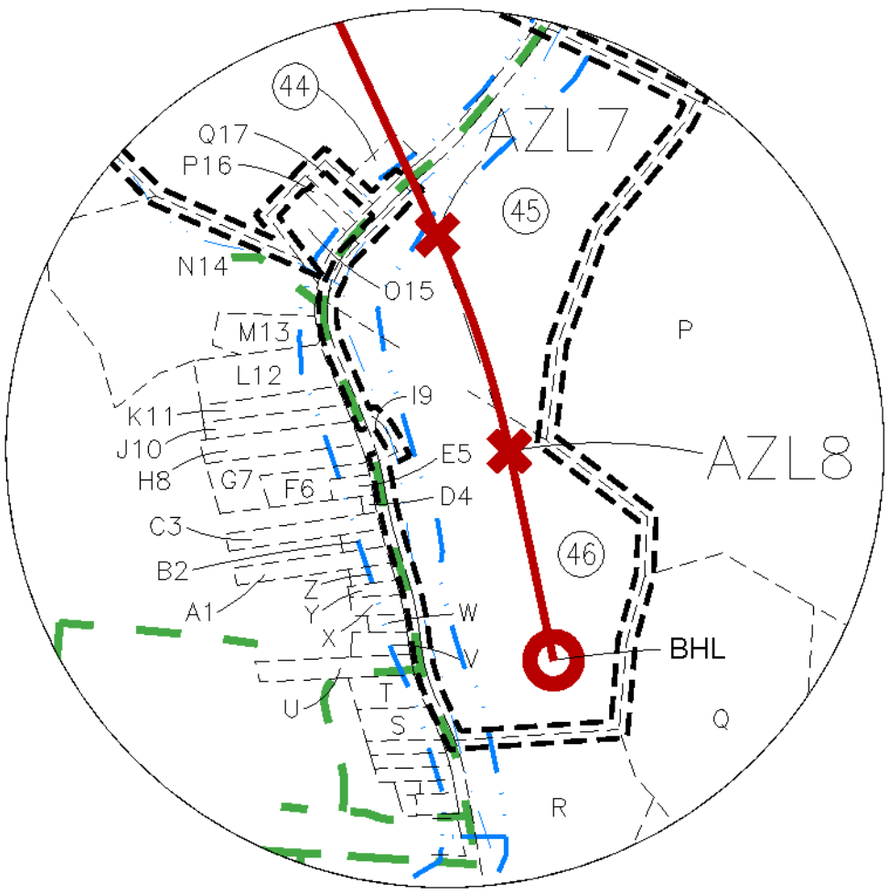


BLOW UP INSET 2
SCALE: 1"=500'

REVISIONS:	COMPANY: SWN Production Company, LLC / SWN Production Company™	
	OPERATOR'S WELL #: SHANNON FIELDS OHI 210H	DATE: 01-26-2022
	DISTRICT: RICHLAND / COUNTY: OHIO / STATE: WV	DRAWN BY: NBG SCALE: N/A DRAWING NO: ACE-2326 WELL LOCATION PLAT

O:\ASCENT\ACE-2326 SHANNON FIELDS WELL PLAT\SURVEY\DRAWINGS\HORIZONTAL WELL PLATS\SHANNON FIELDS OHI 210H\SHANNON FIELDS OHI 210H DRAFT.DWG
WEDNESDAY JANUARY 26 2022 12:15PM

ASCENT
Consulting & Engineering
SURVEYOR/ENGINEER: 1-304-933-3463
2361 DAVISSON RUN ROAD, SUITE 103
CLARKSBURG, WV 26301



BLOW UP INSET 3
SCALE: 1"=500'

REVISIONS:	COMPANY: SWN Production Company, LLC / SWN Production Company™			
	OPERATOR'S WELL #:	SHANNON FIELDS OHI 210H		DATE: 01-26-2022
	DISTRICT: RICHLAND	COUNTY: OHIO	STATE: WV	DRAWN BY: NBG SCALE: N/A DRAWING NO: ACE-2326 WELL LOCATION PLAT

ASCENT
Consulting & Engineering
SURVEYOR/ENGINEER: 1-304-933-3463
2361 DAVISSON RUN ROAD, SUITE 103
CLARKSBURG, WV 26301

WELL BORE TABLE FOR SURFACE/ROYALTY OWNERS

TRACT	SURFACE OWNER (S)/ROYALTY OWNER (R)	TAX PARCEL
1	SHANNON FIELDS, LLC (S/R)	4-R17-23.2
TRACT	SURFACE OWNER	TAX PARCEL
2	PARK VIEW MEMORIAL GARDENS, INC.	4 R17 8
3	NADA E. BENEKE, ET AL	4-R17-19
4	CRAIG V. & EMMA L. OLEARY	4 R17 17
5	JERMEY A. SCHREIBER & ELIZABETH PHILBRICK	4 R17 16
6	GUNTHER F. & M E. HEMPELMAN	4-R17-14
7	COLUMBIA GAS TRANSMISSION CORP.	4-R17-15
8	GUNTHER F. & M E. HEMPELMAN	4-R17-13
9	CARL D. III & JOLIN H. BURKLAND	4-R17-13.1
10	CARL D. III & JOLIN H. BURKLAND	4-R17-12
11	HARRY S. & BARBARA J. FISHER	4-R17-11
12	HARRY S. & BARBARA J. FISHER	4-R17-11.1
13	MATTHEW & VICTORIA GOMPERS	4-R17-10.2
14	SHASHI R & MONISHA URVAL	6-T2J-1
15	RICHARD P. & KIM M. CARTER	4-R17-23.1
16	RICHARD P. CARTER	4-R17-23.3
17	DAVID N. GAUDINO & ANN C. HOGE	6-T2J-2
18	ERICA D. & WARREN C. III WILCOX	6 T2 14
19	RODD A. & LISA R. FRANKE	6-T2-15.3
20	RODD A. & LISA R. FRANKE	6-T2-15.4
21	MICHAEL W. WILHELM	6 T2 15
22	CATHOLIC DIOCESE OF WHEELING CHARLESTON	6 T2 11
23	DONALD G. & BECKY J. VILLANOVA	6-T2-15.2
24	DONALD G. & BECKY J. VILLANOVA	6 T2 16
25	LUANN & ARTHUR W. Jr. DANCHART	6 T2 16.1
26	LUANN & ARTHUR W. Jr. DANCHART	6-T2-16.2
27	WHEELING PARK COMMISSION	6-T7-95
28	BOARD OF EDUCATION	10 W56 1
29	BOARD OF EDUCATION	10-W56-2
30	FRANCES L. BRADEN - IRREVOC TRUST	6-T7-97
31	KENNETH & STEPHANIE SPENCER	6-T7-67.6
32	JONATHAN BRUCE WHARTON	6-T7-97.3
33	KEITH A. & WENDY J. POOLE	6-T7-97.2
34	W. C. & K. D. HAUGHT	6-T7-67.14
35	FRANCES L. BRADEN	6-T7-67
36	THOMAS L. & DONNA LYNNE TOLMAR	6-T7-67.18
37	WILLIAM O. IV & CANDICE M. LEWIS	6-T7-67.19
38	TODD M. & JENNY S. SCHIRTZINGER	6-T7-67.17
39	CHAD W. & REBECCA L. BROADWATER	6-T7-67.16
40	JAMES D. Jr. & CAROLINE K. MILLER	6-T7-117.2
41	JAMES D. Jr. & CAROLINE K. MILLER	6 T7 117.1
42	JAMES D. Jr. & CAROLINE K. MILLER	6 T7 117.3
43	PETERS RUN LAND Co., INC	6-T7-119
44	JOHN BUCHANAN	6 T7 121
45	JAY A. & LISA P. POWELL	6 T7 157
46	JANET NOEL	6-T7-126.3

ADJOINING OWNERS TABLE

TRACT	SURFACE OWNER	TAX PARCEL
A	EARL P. HUFFNER	4-R17-24.1
B	JAMES R. MULL	4-R17-24
C	ROBERT W. MINCH, Jr. & HERBERT P. MINCH	4-R17-57
D	RUTH CARTER LEWIS, REVOCABLE TRUST	4-R17-23
E	NADA E. BENEKE	4-R17-22
F	THOMAS J. & MICHELLE N. JOHN	4-R17-20
G	CHARLES & DOLORES MONFRADI	4-R17-58
H	TIMMY B. & AMY L. MINCH	6-T2-18
I	WILLIAM A. & CYNTHIA ORUM	6-T7-178
J	DONALD A. & RHONDA L. BRADEN	6-T7-97.1
K	RALPH L., II & MELISSA E. FRITTER	6-T7-111
L	JAMES D., Jr. & CAROLINE K. MILLER	6-T7-112
M	JAMES D., Jr. & CAROLINE K. MILLER	6 T7 117
N	PETERS RUN LAND Co., INC.	6 T7 118
O	DANIEL F. OCH	6-T7-156

ADJOINING OWNERS TABLE

TRACT	SURFACE OWNER	TAX PARCEL
P	LUCKY FARMS, LLC	6 T12 5
Q	BDDE PROPERTIES, LLC	6-T12-4
R	PAIASA LIMITED LIABILITY Co.	6-T12-2.1
S	OHIO VALLEY REALTY COMPANY	6-T12B-13.1
T	OHIO VALLEY REALTY COMPANY	6 T12B 13
U	JOYCE A. TSORAS	6-T12B-12
V	MARK D. PANEPINTO	6-T12B-11
W	MICHAEL M. & CATHY McCULLEY	6 T12B 8
X	MARY L. QUIGLEY	6-T12B-7
Y	DENNIS THORN	6-T12B-6
Z	JEFFERY D. GIUSTINIANI & JAMACA S. DOTKA	6-T12B-4
A1	TABATHA WILSON	6 T12B 3
C3	DENNIS R. THORN, ET AL	6-T12B-1
D4	JEFFREY D. & FRANCES M. McKENZIE	6-T12B-1.1
E5	GRETA M. GATES & R. A. FOOSE	6-T7-133
F6	SCOTT R. STEWART & MICHELLE L. NICHOLSON	6-T7-132
G7	HAROLD H. & MARY K. BELL	6-T7-131
H8	CHRISTINA M. MARTIN	6 T7 130
I9	POPCORN PROPERTIES, LLC	6-T7-126.1
J10	ROGER L. KENT, Jr.	6-T7-129.1
K11	ROGER L. KENT, Jr.	6-T7-129
L12	CARL W. & CHRISTINE S. McCARDLE	6-T7-128
M13	CARL W. McCARDLE	6-T7-127
N14	JOSEPHINE L. TAGGART	6-T7-125
O15	CHRISTINE M. POWELL	6 T7 124
P16	JAYME F. TIMBERLAKE	6-T7-123
Q17	JOHN BUCHANAN	6-T7-122
R18	PETERS RUN LAND Co., INC.	6-T7-125.1
S19	JOSEPHINE L. TAGGART	6-T7-125
T20	JAMES D., Jr. & CAROLINE K. MILLER	6-T7-67.1
U21	JOHN P. & MEREDITH L. TRISCHLER	6 T7 75.4
V22	JOHN P. & MEREDITH L. TRISCHLER	6-T7-75.3
W23	JOHN P. & MEREDITH L. TRISCHLER	6-T7-75.2
X24	KEVIN L. & MICHELLE J. HEILMAN	6-T7-67.15
Y25	RYAN P. & MICHELLE M. HUNKER	6 T7 67.20
Z26	SCOTT L. & DEANNA L. NESTOR	6-T7-67.3
A27	GERALD & ROSETTA J. BISCHOF	6-T7-67-7
B28	DEEDRA DAVIS	6 T7 67.5
C29	RONALD A. & PATRICIA T. ZANDRON	6-T7-67.8
D30	DALE A. & CAROL ANN FORESTER	6-T7-67.9
E31	MARIO B. & LOIS R. JULIAN	6-T7-67.13
F32	BENJAMIN & DANIELLE ELLWOOD	6 T7 67.23
G33	CAYLA J. & MATTHEW D. BLACK	6-T7-67.10
H34	FRANCES L. BRADEN, IRREVOC TRUST	10 W56 3
I35	VINCENCT J. MAGNONE	6-T7-6
J36	BRIAN M. HINDERLITER	6-T7-6.4
K37	WHEELING PARK COMMISSION	6-T7-1
L38	WHEELING PARK COMMISSION	6 T2 17
M39	STEPHEN T. & MICHELLE L. VOGRIN	6-T2-13
N40	ROK 2 GROUP, LLC	6-T2-13.1
O41	CATHOLIC DIOCESE OF WHEELING CHARLESTON	6 T6 1
P42	WM & P.M. HESLOP	6-T2-8
Q43	D.A. & M.R. BECKER	6-T2-10
R44	CITY OF WHEELING	6-T2-11.1
S45	MARGUERITE M. CERRA TOD	6 T2 7
T46	KAREN A. & VARONE K.L. PACHUTA	6-T2-3
U47	ROBERT J. & TAMI L. SEEVERS, WESBANCO TRUST	6-T2-2
V48	ROY ROGER SMITH - TOD	6-T2J-4
W49	JAMES C. & MARY F. WRIGHT	6-T2B-8
X50	ROBERT B. & K.S. NELSON	6-T2J-5
Y51	MICHAEL J. & SUSAN J. BAKER	6 T2J 7
Z52	MICHAEL J. & SUSAN J. BAKER	4-R17-10
A53	ATTILA A. TENKEY	4-R17-10.1
B54	WHEELING PARK COMMISSION	6-T1-2
C55	WHEELING PARK COMMISSION	4-R17-6.1
D56	GACS LP	10-W2/A-1
E57	CITY OF WHEELING	4-R14-15
F58	SAM HINDBAUGH	4 R17 8.1
G59	KENDRA T. TAYLOR	4-R17-59.1
H60	DONALD R. & M.M. EDDY	4-R17-59.2

REVISIONS:

COMPANY:

SWN Production Company, LLC

SWN Production Company™

OPERATOR'S WELL #: SHANNON FIELDS OHI 210H

DISTRICT: RICHLAND | COUNTY: OHIO | STATE: WV

DATE: 01-26-2022

DRAWN BY: NBG

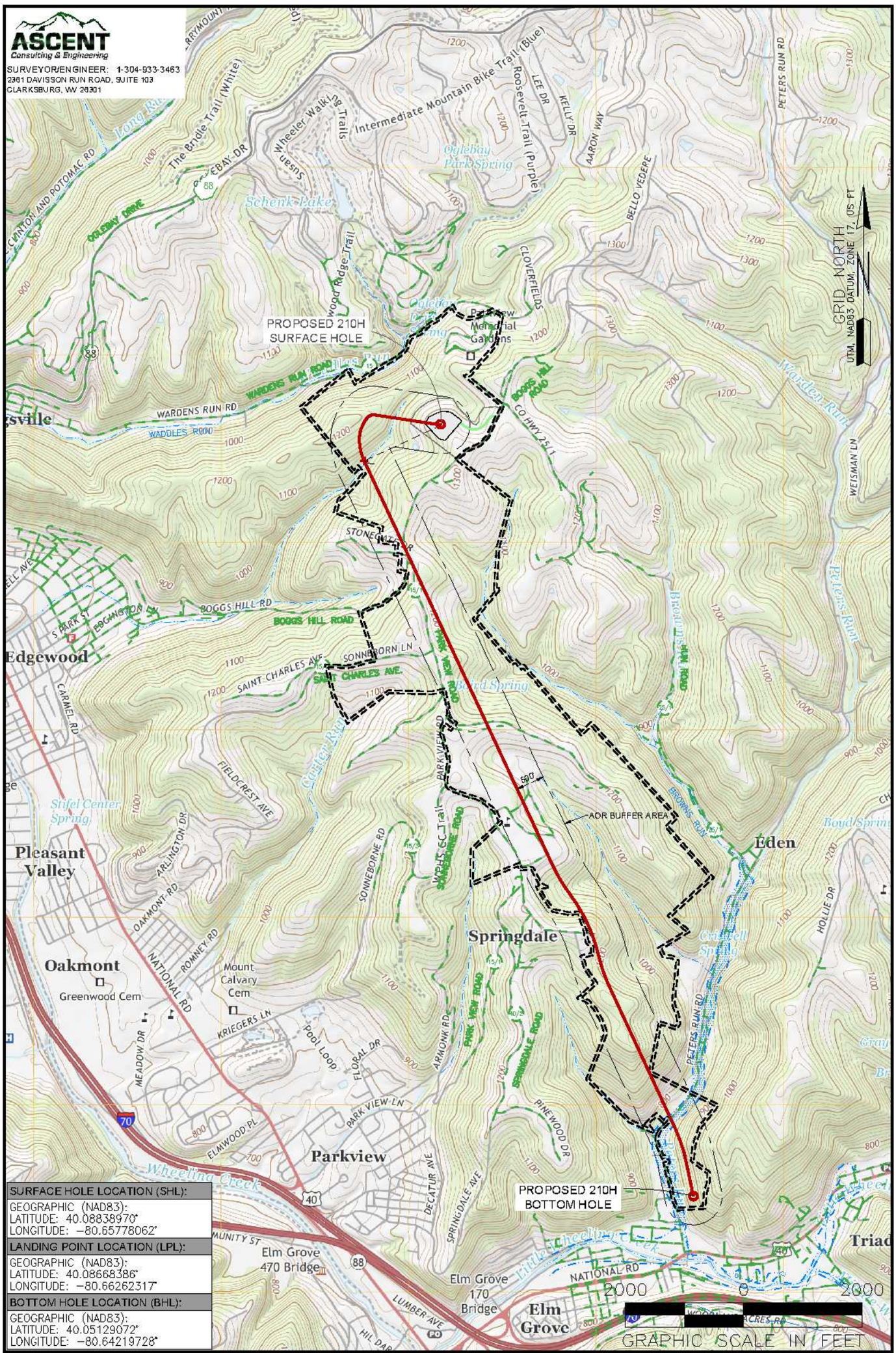
SCALE: N/A

DRAWING NO: ACE-2326

WELL LOCATION PLAT

O:\ASCENT\ACE-2326 SHANNON FIELDS WELL PLAT\SURVEY\DRAWINGS\HORIZONTAL WELL PLATS\SHANNON FIELDS OHI 210H\SHANNON FIELDS OHI 210H DRAFT.DWG

WEDNESDAY JANUARY 26 2022 12:17PM



SURFACE HOLE LOCATION (SHL):
GEOGRAPHIC (NAD83): LATITUDE: 40.08838970° LONGITUDE: −80.65778062°
LANDING POINT LOCATION (LPL):
GEOGRAPHIC (NAD83): LATITUDE: 40.08668386° LONGITUDE: −80.66262317°
BOTTOM HOLE LOCATION (BHL):
GEOGRAPHIC (NAD83): LATITUDE: 40.05129072° LONGITUDE: −80.64219728°

SURVEYOR/ENGINEER: 1-304-933-3463
2361 DAVISSON RUN ROAD, SUITE 103
CLARKSBURG, WV 26301

NOTES ON SURVEY

1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

LEGEND:

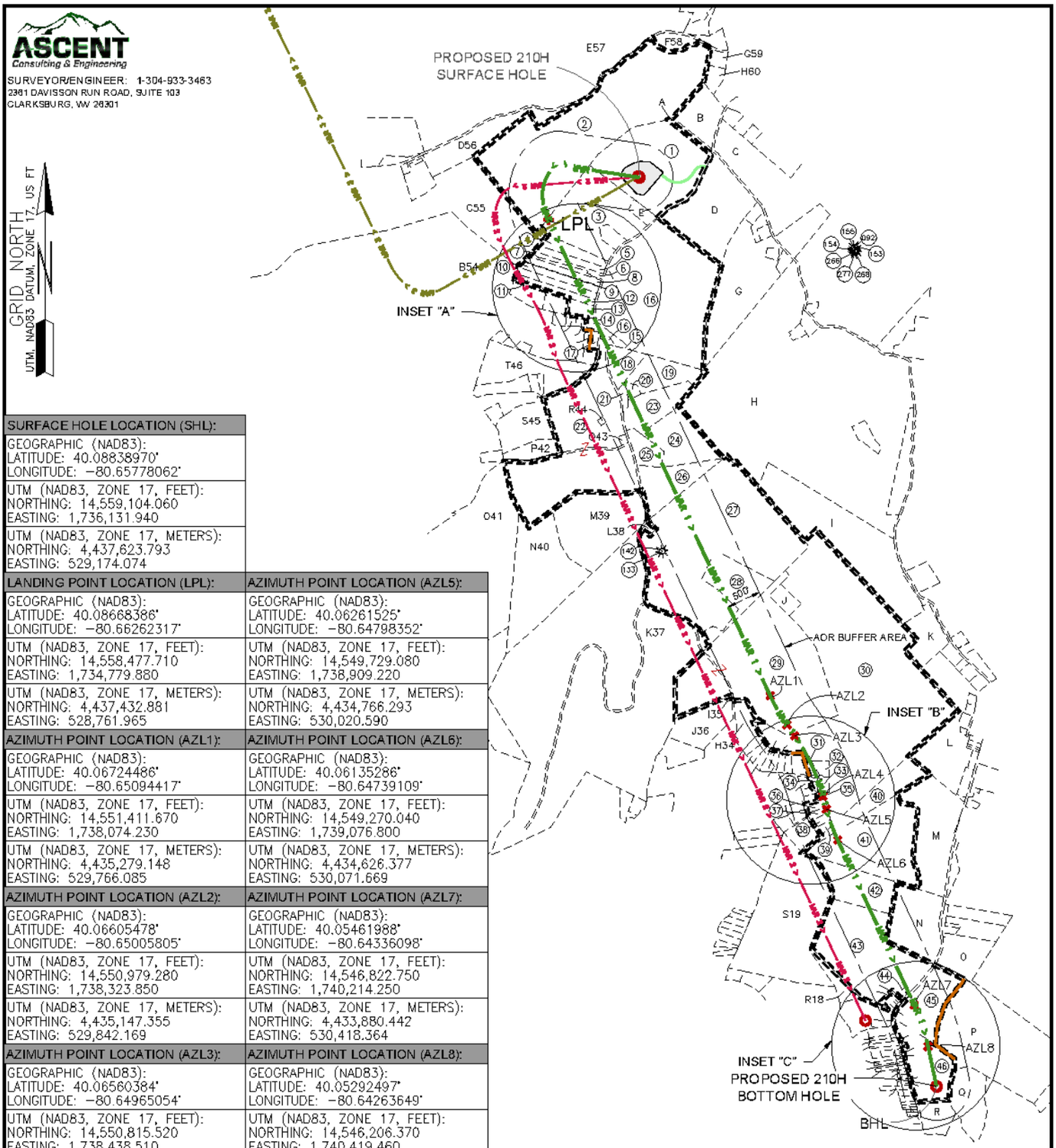
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- LPL LANDING POINT LOCATION
- FLOOD PLAIN
- ACCESS ROAD
- PUBLIC ROAD
- ACCESS ROAD TO PREV. SITE
- LEASE BOUNDARY
- PROPOSED PATH

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	WELL (FARM) NAME: SHANNON FIELDS OHI	WELL # 210H	SERIAL # XXXX
ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201	COUNTY – CODE OHIO – 35	DISTRICT: RICHLAND	
SURFACE OWNER: SHANNON FIELDS, LLC	USGS 7 1/2 QUADRANGLE MAP NAME WHEELING, WV		

O:\ASCENT\ACE-2326 SHANNON FIELDS WELL PLAT\SURVEY\DRAWINGS\HORIZONTAL WELL PLATS\SHANNON FIELDS OHI 210H\SHANNON FIELDS OHI 210H DRAFT.DWG
WEDNESDAY JANUARY 26 2022 12:18PM

PROPERTY NUMBER 2501189858
PAD ID 301189761

ASCENT
Consulting & Engineering
SURVEYOR/ENGINEER: 1-304-933-3463
2361 DAVISSON RUN ROAD, SUITE 103
CLARKSBURG, WV 26301

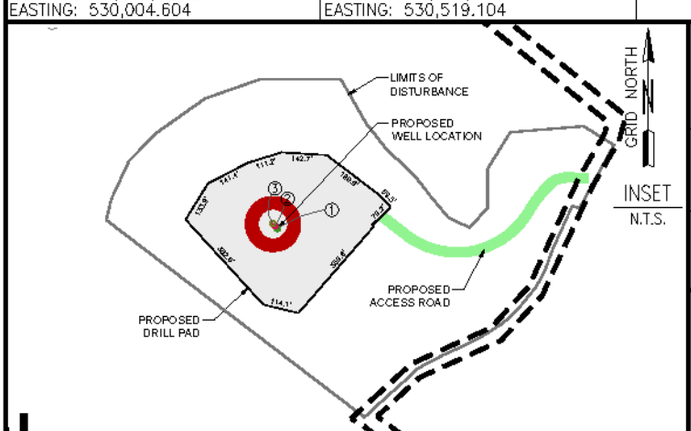


SURFACE HOLE LOCATION (SHL):
GEOGRAPHIC (NAD83): LATITUDE: 40.0883897° LONGITUDE: -80.65778062°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,559,104.060 EASTING: 1,736,131.940
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,437,623.793 EASTING: 529,174.074

LANDING POINT LOCATION (LPL):	AZIMUTH POINT LOCATION (AZL5):
GEOGRAPHIC (NAD83): LATITUDE: 40.08668386° LONGITUDE: -80.66262317°	GEOGRAPHIC (NAD83): LATITUDE: 40.06261525° LONGITUDE: -80.64798352°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,558,477.710 EASTING: 1,734,779.880	UTM (NAD83, ZONE 17, FEET): NORTHING: 14,549,729.080 EASTING: 1,738,909.220
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,437,432.881 EASTING: 528,761.965	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,434,766.293 EASTING: 530,020.590
AZIMUTH POINT LOCATION (AZL1):	**AZIMUTH POINT LOCATION (AZL6):**
GEOGRAPHIC (NAD83): LATITUDE: 40.06724486° LONGITUDE: -80.65094417°	GEOGRAPHIC (NAD83): LATITUDE: 40.06135286° LONGITUDE: -80.64739109°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,551,411.670 EASTING: 1,738,074.230	UTM (NAD83, ZONE 17, FEET): NORTHING: 14,549,270.040 EASTING: 1,739,076.800
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,435,279.148 EASTING: 529,766.085	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,434,626.377 EASTING: 530,071.669
AZIMUTH POINT LOCATION (AZL2):	**AZIMUTH POINT LOCATION (AZL7):**
GEOGRAPHIC (NAD83): LATITUDE: 40.06605478° LONGITUDE: -80.65005805°	GEOGRAPHIC (NAD83): LATITUDE: 40.05461988° LONGITUDE: -80.64336098°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,550,979.280 EASTING: 1,738,323.850	UTM (NAD83, ZONE 17, FEET): NORTHING: 14,546,822.750 EASTING: 1,740,214.250
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,435,147.355 EASTING: 529,842.169	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,433,880.442 EASTING: 530,418.364
AZIMUTH POINT LOCATION (AZL3):	**AZIMUTH POINT LOCATION (AZL8):**
GEOGRAPHIC (NAD83): LATITUDE: 40.06560384° LONGITUDE: -80.64965054°	GEOGRAPHIC (NAD83): LATITUDE: 40.05292497° LONGITUDE: -80.64263649°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,550,815.520 EASTING: 1,738,438.510	UTM (NAD83, ZONE 17, FEET): NORTHING: 14,546,206.370 EASTING: 1,740,419.460
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,435,097.441 EASTING: 529,877.118	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,433,692.569 EASTING: 530,480.912
AZIMUTH POINT LOCATION (AZL4):	**BOTTOM HOLE LOCATION (BHL):**
GEOGRAPHIC (NAD83): LATITUDE: 40.06314656° LONGITUDE: -80.64816824°	GEOGRAPHIC (NAD83): LATITUDE: 40.051290714° LONGITUDE: -80.642197288°
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,549,922.350 EASTING: 1,738,856.770	UTM (NAD83, ZONE 17, FEET): NORTHING: 14,545,611.760 EASTING: 1,740,544.760
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,434,825.202 EASTING: 530,004.604	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,433,511.331 EASTING: 530,519.104

NOTES ON SURVEY
1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

2000 0 2000
GRAPHIC SCALE IN FEET



NOTE: ANY UTILITIES OR IMPROVEMENTS SHOWN ON THIS PLAT ARE FROM REASONABLE VISUAL OBSERVATIONS. NO UTILITY COMPANIES WERE CONTACTED FOR UTILITY LINE LOCATIONS.

COMPANY: SWN Production Company, LLC / SWN Production Company™

OPERATOR'S WELL #: SHANNON FIELDS OHI 210H

DISTRICT:	COUNTY:	STATE:
RICHLAND	OHIO	WEST VIRGINIA

SWN PRODUCTION COMPANY, LLC
SURFACE HOLES
1. "SHANNON FIELDS-OHI 210H"
2. "SHANNON FIELDS-OHI 10H"
3. "SHANNON FIELDS-OHI 1H"

LEGEND:
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- ABANDONED WELL
- PLUGGED & ABANDONED WELL
- LPL LANDING POINT LOCATION
- DRILLING UNIT
- LEASE BOUNDARY
- HARDLINE BOUNDARY
- UPP 2 > UPPER POINT PLEASANT PATH
- MAR 2 > MARCELLUS PATH

REVISIONS:	DATE: 01-26-2022
	DRAWN BY: NBG
	SCALE: 1" = 2000'
	DRAWING NO: ACE-2326
	INTERNAL WELL PLAT

Exhibit "A"

Attached to and made a part of the certain Term Pipeline Option and Right of Way Agreement dated the 25th day of September, 2021 by C.J. Rotter and Grace A. Rotter, his wife, whose address is 2 Melrose Drive, Chillicothe, OH 45601 ("Grantor") and SWN Water Resources Company, LLC, ("SWN")

PARCEL: 03-0L11-0054-0000



The total footage of the Temporary Water Line is:
One Thousand, Five Hundred and 00/100 feet (1,500'), more or less.

GRANTOR:

Carl J Rotter
C. J. Rotter

Grace A. Rotter
Grace A. Rotter

SWN:

SWN WATER RESOURCES COMPANY, LLC
By: Robert L. Laine
Its: Land Manager

9L 7199 9991 7038 4155 9705

VIOLATION NO. 113-10
FORM VI-28
(Rev. 7-01)

DATE 11/15/2018
API NO. 47-085-10203

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FINDING OF IMMINENT DANGER AND CEASE OPERATIONS ORDER

LOCATION: FARM NAME Edwin D McAvoy et al
WELL NO. Stromsnider 3H
DISTRICT Clay
COUNTY Ritchie
TO: Antero Resources Corporation
DESIGNATED AGENT Terry and Dianna Stamper
ADDRESS 1625 Wynkoop Street
ADDRESS 5400 Big Tyler Rd.
Denver, CO 80202
Cross Lanes, WV 25313

Notice is hereby given that the undersigned, upon making an inspection of this well on November 15th, 20 18, found the existence of an imminent danger: X that may cause death or serious physical harm to persons or; _____ that a fresh water supply will be lost or contaminated; before the condition can be abated. The imminent danger is a violation of West Virginia Code 22-6-3 and may result in any or all actions available to the Office under West Virginia Code 22-6, including but not limited to assessment of civil penalties, filing of misdemeanor charges, and injunctive relief. In addition, this is a violation of West Virginia Code 22-6 _____ and/or 35CSR, Series 8, Section 8.5, of the Legislative rules of the Office of Oil and Gas of the Department of Environmental Protection, set forth in detail as follows: (Use additional sheets as necessary)

Finding: On November 15, 2018, Antero Resources Corporation encountered an incident that caused a fire on the Mulvay well pad. The wells were shut in by a truck driver using the ESD system and the fire was extinguished by the local fire departments. No contaminants appeared to have left the well pad.

Abatement and lifting of this cease operations order requires the following:

1. Gain Control of the activities applied to the listed API well on the Mulvay well pad.
2. Submit to OOG and Ritchie County Inspector, a report on or before 11 / 22 / 2018 that:
   A. Demonstrates a knowledge and understanding as to the cause of this incident.
   B. Demonstrates the ability to safely resume operations on the well pad.
   C. Explain future plans or SOP's that will safeguard personnel from similar future incidents.
   D. Confirm that any possible pollutants were confined to the site.

Accordingly, you are hereby ordered to cease further operations until the undersigned has determined that the imminent danger has been abated.

Copies of this order have been posted at the wellsite and sent by certified or registered mail to the Designated Agent named above.

An informal conference with the Oil and Gas Inspector should be arranged prior to the date set forth above for abatement of the violation.

In accordance with West Virginia Code 22-6-4, you, or a complaining coal operator, owner, or lessee may apply for a formal hearing concerning this order with 15 days of this order.

SIGNED Michael Goff
TITLE Oil and Gas Inspector
ADDRESS 1723 Auburn Rd.
Pullman, WV 26421

TELEPHONE 304-549-6823

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. Sonia R MSH 5H
Well Pad Name: Sonia R MSH

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	051-Marshal	7-Liberty	278-Cameron
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Sonia R MSH 5H Well Pad Name: Sonia R MSH

3) Farm Name/Surface Owner: John C. Richards ET UX Public Road Access: Reid Ridge Road

4) Elevation, current ground: 1531' Elevation, proposed post-construction: 1533'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep x
Horizontal _____

6) Existing Pad: Yes or No No

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.04.26 07:50:16 -04'00'

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Onondaga, Target Top TVD- 7411', Target Base TVD- 7510', Anticipated Thickness- 99', Associated Pressure- 4882'

8) Proposed Total Vertical Depth: 7510'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 7510'

11) Proposed Horizontal Leg Length: _____

12) Approximate Fresh Water Strata Depths: 337'

13) Method to Determine Fresh Water Depths: Nearby Stream Bottom (no well data within 1500' radius)

14) Approximate Saltwater Depths: 1399' Based on salt water depth from nearby well records

15) Approximate Coal Seam Depths: 1197' & 1247'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes x No _____

(a) If Yes, provide Mine Info: Name: Marshall county Coal Mine
Depth: 1197' & 1247'
Seam: Pittsburgh
Owner: Marshall County Coal Resources/American Consolidated Natural Resources

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. Sonia R MSH 5H
Well Pad Name: Sonia R MSH

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94#	126'	126'	CTS
Fresh Water	13 3/8"	New	H-40	48#	400'	400'	394 sx/CTS
Coal	See	Interm	Casing				
Intermediate	9 5/8"	New	J-55	36#	2930'	2930'	1161 sx/CTS
Production	5 1/2"	New	P-110 HP	20#	7510'	7510'	Tail 600sx/ 100' Inside Intermediate
Tubing							

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.04.26 07:50:48 -04'00'

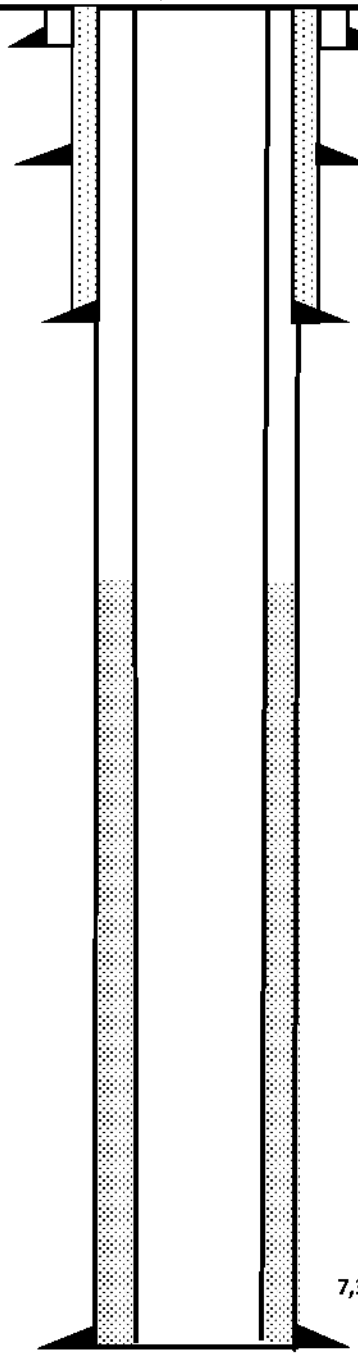
TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.20/30% Excess
Fresh Water	13 3/8"	17.5"	0.380	2730	633	Class A	1.20/30% Excess
Coal	See	Interm	Casing				
Intermediate	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/40% Excess
Production	5 1/2"	8 3/4"-8 1/2"	0.361	14360	10500	Class A	1.19/5% Excess
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

Southwestern Energy Company | Proposed Drilling Program

Well:	SONIA R MSH 5	**Re-entry Rig:**	TBD
Field:	VICTORY FIELD WET	**Prospect:**	Marcellus Shale
County:	MARSHALL	**State:**	WV
SHL:	39.7874 Latitude	-80.5684 Longitude	
BHL:	39.7874 Latitude	-80.5684 Longitude	
KB Elev:	1,557 ft MSL	KB: 26 ft AGL	**GL Elev:** 1,531 ft MSL



NO COAL VOID ANTICIPATED

GAS STORAGE INTERVEAL: 2189'-2718'

PROD TOC Tail @ 3,800 ' MD

TUBULAR DETAIL

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval From	Planned Interval To
Conductor	20	94.0 #	J-55	0 '	126 '
Surface	13.375	48.0 #	H-40	0 '	400 '
Inter/Coal	9.625	36.0 #	J-55	0 '	2,930 '
Production	5.5	20.0 #	P-110 HP	0 '	7,510 '

CEMENT DETAIL

	Sacks	Class	Density
Conductor:	151	A	19.3
Surface:	394	A	15.6
Intermediate:	1161	A	15.6-16.0
Production:	800	A	15.6-16.0

Freshwater Depth - 337 ' TVD
Coal Depth - 1197'TVD, 1247'TVD
Saltwater Depth - 1,399 ' TVD
TVD - 7,510 '
TMD - 7,510 '

126 ' to 420 '
Air/Mist

420 ' to 2,950 '
Air/Mist

10.5# Brine Mud

2,950 ' to 7,250 '
Air/Mist

7,250 ' to 7,510 '
12.0-12.5 ppg

TD @ 7,510 '
12.0-12.5 ppg

7,399 ' Target Center

Marcellus 7,375 ' MD
Onondaga 7,411 ' TVD
Well TD 7,510 ' TVD

Created by: C R Hall on 04/21/2022

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2022.04.26 07:51:07 -04'00'

WW-6B
(04/15)

API NO. 47- 051 - _____
OPERATOR WELL NO. Sonia R MSH 5H
Well Pad Name: Sonia R MSH

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	051-Marshal	7-Liberty	278-Cameron
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Sonia R MSH 5H Well Pad Name: Sonia R MSH

3) Farm Name/Surface Owner: John C. Richards ET UX Public Road Access: Reid Ridge Road

4) Elevation, current ground: 1531' Elevation, proposed post-construction: 1533'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep x
Horizontal _____

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Onondaga, Target Top TVD- 7411', Target Base TVD- 7510', Anticipated Thickness- 99', Associated Pressure- 4882'

8) Proposed Total Vertical Depth: 7510'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 7510'

11) Proposed Horizontal Leg Length: _____

12) Approximate Fresh Water Strata Depths: 337'

13) Method to Determine Fresh Water Depths: Nearby Stream Bottom (no well data within 1500' radius)

14) Approximate Saltwater Depths: 1399' Based on salt water depth from nearby well records

15) Approximate Coal Seam Depths: 1197' & 1247'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes x No _____

(a) If Yes, provide Mine Info: Name: Marshall county Coal Mine
Depth: 1197' & 1247'
Seam: Pittsburgh
Owner: Marshall County Coal Resources/American Consolidated Natural Resources

WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. Sonia R MSH 5H
Well Pad Name: Sonia R MSH

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94#	126'	126'	CTS
Fresh Water	13 3/8"	New	H-40	48#	400'	400'	394 sx/CTS
Coal	See	Interm	Casing				
Intermediate	9 5/8"	New	J-55	36#	2930'	2930'	1161 sx/CTS
Production	5 1/2"	New	P-110 HP	20#	7510'	7510'	Tail 600sx/ 100' Inside Intermediate
Tubing							

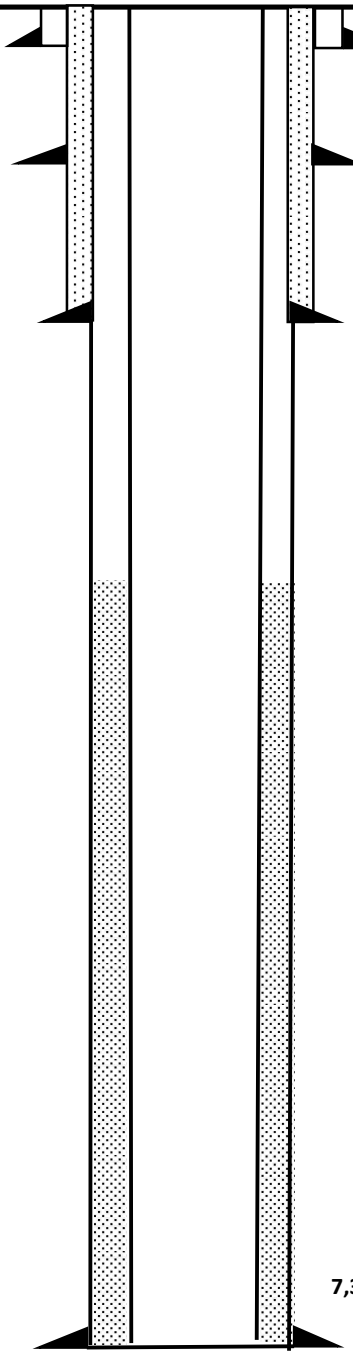
TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.20/30% Excess
Fresh Water	13 3/8"	17.5"	0.380	2730	633	Class A	1.20/30% Excess
Coal	See	Interm	Casing				
Intermediate	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/40% Excess
Production	5 1/2"	8 3/4"-8 1/2"	0.361	14360	10500	Class A	1.19/5% Excess
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

Southwestern Energy Company | Proposed Drilling Program

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Field:	VICTORY FIELD WET	**Prospect:**	Marcellus Shale
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GAS STORAGE INTERVEAL: 2189'-2718'

PROD TOC Tail @ 3,800 ' MD

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Marcellus 7,375 ' MD
Onondaga 7,411 ' TVD
Well TD 7,510 ' TVD

126 ' to 420 '
Air/Mist

420 ' to 2,950 '
Air/Mist

10.5# Brine Mud

2,950 ' to 7,250 '
Air/Mist

7,250 ' to 7,510 '
12.0-12.5 ppg

TD @ 7,510 '
12.0-12.5 ppg

Created by: C R Hall on 04/21/2022

Groundwater and Environmental Professionals Since 1891

Moody AND ASSOCIATES, INC.

April 27, 2022

Mr. Joshua Boyda
Senior Environmental Specialist
Southwestern Energy
1300 Fort Pierpont Drive
Suite 201
Morgantown, WV 26508

Re: ***Summary of Investigative Findings***
Thurman Speece Well Pad
Buffalo District, Brooke County, West Virginia

Dear Mr. Boyda:

Moody and Associates, Inc. (Moody) was retained by SWN Production Company, LLC (SWN) to conduct soil and water quality screening and sampling at the Thurman Speece well pad, located at 1242 Lazear Wilhelm Road, Wellsburg, West Virginia (*Figure 1*). The delineation and characterization efforts were conducted in response to a produced fluid release originating from a leaking valve on the GPU associated with Thurman Speece BRK 205H well. Approximately five barrels of produced fluid were reportedly released onto the pad surface on January 2, 2022, and the produced fluid migrated into the well pad drainage system along the northern and eastern edges of the well pad. The produced fluid migrated through the pad's underground drain system to an open drain located approximately 130 feet away from the leaking GPU valve. SWN representatives reported that the pad drains were promptly closed following the incident, however the drain was not functioning properly and allowed for the discharge of stormwater and produced fluids off pad. Therefore, interceptor trenches were immediately hand dug to limit the horizontal migration of the fluid. PVC caps were then glued onto the drain discharge pipe to stop the

flow of all fluids from the pad drain. These caps remained in place for the entire duration of the remediation to prevent potential off-site migration of contaminants. The constituents of concern (COCs) at the well pad consist of parameters associated with produced fluids, listed in *Table 1*.

Soil Screening and Sampling

During the period of January 3, 2022 through January 28, 2022, Moody mobilized to the site to delineate and characterize the extent of impacts from the release of produced fluid. Remediation was hindered by inclement weather and access issues due to buried utilities. Moody provided oversight for the excavation and removal of impacted materials using a Spectrum *Field Scout EC* meter to measure levels of soil conductivity. Moody relied on field screening measurements of elevated soil conductivity, visual and olfactory observations, as well as characterization and attainment sampling results to verify the lateral and vertical extents of impacted material on and off the well pad. A mini excavator, skid loader, and hand tools were used to excavate and remove impacted materials from both impacted areas on and off the well pad.

From January 10, 2022 through January 12, 2022, Moody delineated the impacted area located off the well pad (*Figure 2*) and directed excavation of impacted soils. The final excavation measured approximately 5,800 square feet with a maximum depth of approximately 34 inches. A grid-based field screening of soil conductivity at 42 locations was performed within the remediated area located off the well pad (*Table 2*). Moody collected 10 attainment soil samples from the remediated area using a random-grid sampling method. In addition to the attainment samples, Moody collected 10 background reference samples from locations upgradient of the remediated area, which were representative of the same soil type and not impacted by the release. The laboratory results for the off-pad attainment and reference soil samples are summarized on *Tables 3* and *4*, respectively, and the laboratory analytical reports are provided in *Appendix A*.

Between January 13, 2022 and January 27, 2022, Moody delineated the impacted area along the northern and eastern portions of the on-pad drainage system and directed removal of impacted soils from these areas (*Figure 3*). The final excavation measured approximately 3,300 square feet with a maximum depth of approximately 42 inches.

Following remediation activities, Moody conducted grid-based field screening of the soil conductivity at 28 locations within the on-pad area of remediation (*Table 5*). Moody collected 10 attainment soil samples from the remediated area of the well pad. In addition, 10 background reference samples were collected from an area on the well pad that was representative of the well pad material and was not impacted by the release. The laboratory results for the attainment and reference soil samples collected on the pad are summarized in *Tables 6* and *7*, respectively, and the laboratory analytical reports are provided in *Appendix A*.

Moody returned to the site on February 25, 2022, to collect an additional sample at SO-02 for synthetic precipitation leaching procedure analysis of chloride after laboratory analytical results indicated an elevated concentration of chloride at this location (1,260 mg/kg). The results, discussed in further detail below, indicate that soils at that location do not present the potential to impact surface water and/or groundwater.

All samples were properly preserved and submitted to Environmental Services Laboratories (ESL) in Indiana, Pennsylvania, for the analysis of produced fluid-related constituents.

Water Quality Screening and Sampling

Moody established surface water screening and sampling locations (SW-01 through SW-05) within an unnamed tributary to Stotts Run located south of the well pad drain (*Figure 1*). A temporary monitoring location was established at the well pad drain (SW-06) where the produced fluid migrated off the well pad. During the period of January 3, 2022 through April 8, 2022, Moody conducted twelve rounds of water quality screening at locations SW-01 through SW-05, and five rounds of water quality screening at SW-06, in order to monitor specific conductance and chloride (*Table 8* through *Table 13*).

Water quality samples were collected on January 3, 2022 at all surface water locations, and again on February 23, 2022 and April 8, 2022 at locations SW-01 through SW-05. The temporary monitoring location SW-06 was removed prior to February 23, 2022 due to remedial efforts on the well pad.

The water quality samples were properly preserved and submitted to ESL for analysis. The samples collected in January and February were analyzed for the constituents listed on *Table 1*. Because no elevated concentrations of volatile organic compounds (VOCs) and/or polycyclic aromatic hydrocarbons (PAHs) were identified during these sampling events, the samples collected in April were analyzed for chloride only. All field screening data and laboratory analytical data for the surface water locations are summarized in *Tables 8* through *13*, and the laboratory analytical results are included in *Appendix A*.

Discussion of Results

The laboratory analytical results for soil were conservatively evaluated in the context of the West Virginia Department of Environmental Protection (WVDEP) De Minimis standards based on residential use. Because there is currently no De Minimis standard for chloride in soil, concentrations were compared to the Soil Action Level established under the West Virginia Corrective Action Guidance Document (CAGD) for Leaking Aboveground Storage Tanks (ASTs) and Underground Storage Tanks (USTs).

All chloride concentrations measured in the attainment soil samples collected from the area off the well pad were below the Soil Action Level of 1,000 mg/kg, with the exception of SO-02 (1,260 mg/kg). However, the SPLP chloride concentration at that location (2.86 mg/L), is well below the US EPA secondary maximum contaminant level (SMCL) of 250 mg/L in groundwater. In addition, no VOCs or PAHs were detected in any of the attainment soil samples collected off of the well pad. The chloride concentrations for all of the background samples collected for the off-pad area were below the Soil Action Level of 1,000 mg/kg and no VOCs or PAHs were detected in any of the background soil samples.

All laboratory analyzed chloride concentrations for the soil attainment samples collected from the on-pad area were below the Soil Action Level of 1,000 mg/kg. In addition, all chloride SPLP concentrations were below the SMCL of 250 mg/L. The laboratory analytical results indicate that trace amounts of VOCs and PAHs were detected in the attainment soil samples and the background samples associated with the well pad. However, all VOC and PAH concentrations in these samples were below their respective De Minimis standards.

The laboratory analytical results for surface water were evaluated in the context of the West Virginia Surface Water Standards. Trace amounts of VOCs were detected at SW-06, located at the well pad drain; however, no VOCs were detected at any of the surface water monitoring points located off-pad. In addition, no PAHs were detected in any of the water quality samples collected at the Site. Immediately following the release, elevated chloride concentrations were measured at surface water locations SW-02, SW-04, SW-05, and SW-06. Specific conductance and chloride concentrations continued to substantially decrease in SW-02, SW-04, and SW-05 following the removal of impacted material from the Site (see *Figure 4*).

A temporary increase in chloride concentration was observed at SW-04 and SW-05 during the April 6, 2022 monitoring event. It should be noted that this monitoring occurred during a significant precipitation event resulting in approximately 1.4 inches of rain (KWVBETHA1). Because elevated chloride concentrations were observed, soil and water quality screening proximal to SW-05 were conducted on April 7, 2022. Soil conductivities in the area between the off-pad remediation and SW-05 were all measured to be less than 2 mS/cm, and no evidence of a residual contamination source was identified. Additionally, the chloride concentration at SW-05 had decreased significantly from the measurements obtained during the April 6, 2022 monitoring event, and was below the West Virginia surface water standard of 230 mg/L for chronic exposure for aquatic life.

Confirmation water quality samples were collected on April 8, 2022 at surface water locations SW-01 through SW-05. Chloride concentrations at all locations were below the West Virginia surface water standards.

Conclusions

Laboratory analysis of the confirmatory soil samples indicate that the impacted soils have been successfully remediated. All VOCs and PAHs analyzed were either not detected or present at levels well below their respective WVDEP De Minimis screening criteria. Chloride concentrations at all but one soil sampling location were below the alternative Soil of Action Level of 1,000 mg/kg; the SPLP chloride concentration at that location was well below the US EPA SMCL of 250 mg/L.

Based on laboratory results, chloride concentrations immediately downgradient of the confluence of the unnamed tributary and Stotts Run (SW-01) are comparable to the concentrations measured upgradient of this confluence (SW-03). As previously noted, significant decreases in chloride concentration were observed at SW-02, SW-04, and SW-05 after the conclusion of remediation efforts. In addition, chloride concentrations analyzed in the confirmatory water quality samples were below applicable West Virginia surface water standards for aquatic life.

If you have any questions or need additional information regarding the information provided in this report, please call our office at (724) 746-5200.

Sincerely,
MOODY AND ASSOCIATES, INC.

Jona Stoskey
Geoscientist III

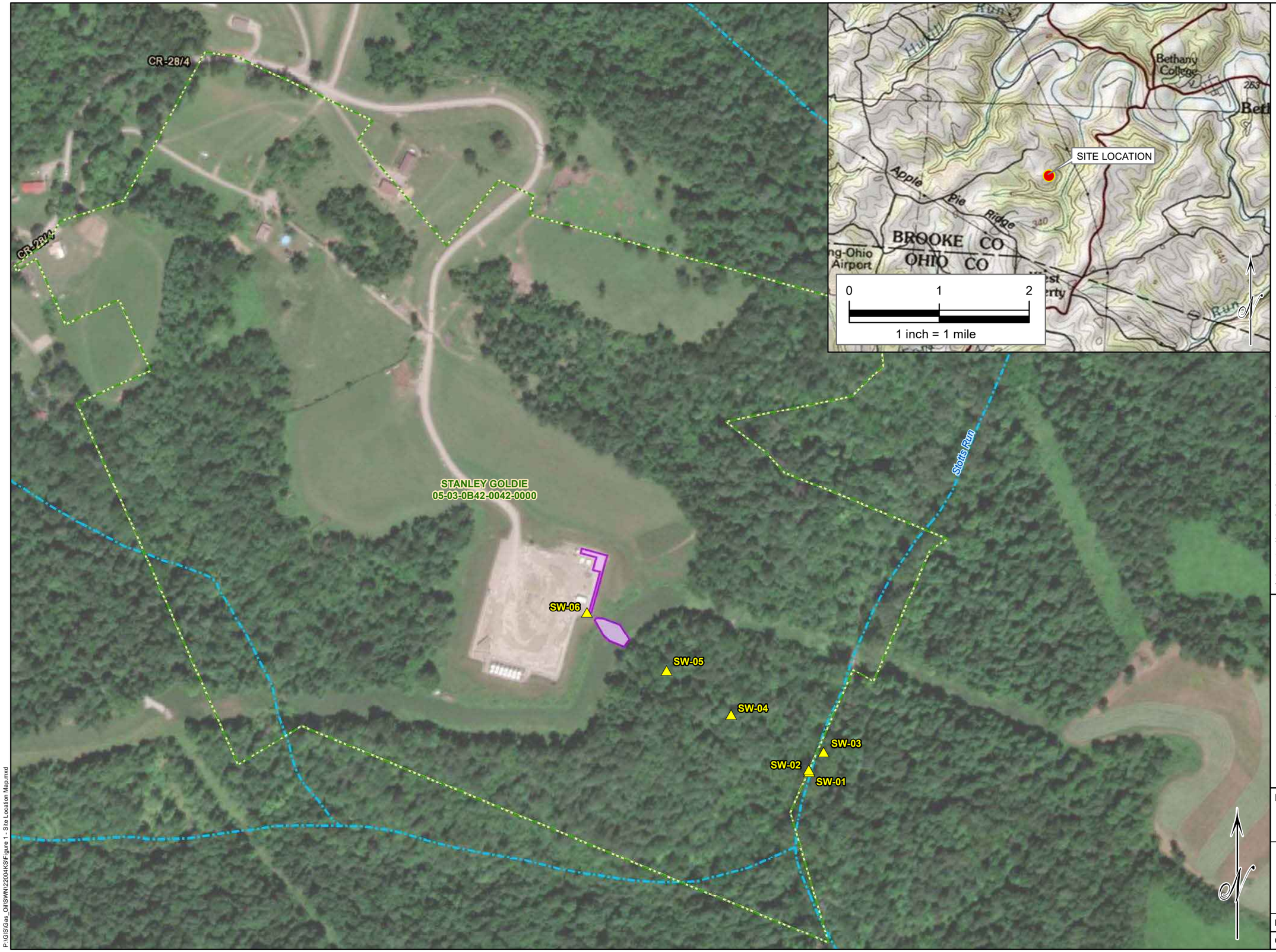


Jessie Bobrzynski, PG, LRS
Senior Geologist

Attachments:

Figure 1: Site Location Map
Figure 2: Soil Screening and Sampling Locations Map – Off Pad Area
Figure 3: Soil Screening and Sampling Locations Map – On Pad Area
Figure 4: Field Conductivity Concentrations
Table 1: List of Sampling Parameters
Table 2: Summary of Soil Screening Results – Off Pad Area
Table 3: Summary of Attainment Soil Sampling Results – Off Pad Area
Table 4: Summary of Background Soil Sampling Results – Off Pad Area
Table 5: Summary of Soil Screening Results – On Pad Area
Table 6: Summary of Attainment Soil Sampling Results – On Pad Area
Table 7: Summary of Background Soil Sampling Results – On Pad Area
Table 8: Summary of SW-01 Water Quality Monitoring and Sampling Results
Table 9: Summary of SW-02 Water Quality Monitoring and Sampling Results
Table 10: Summary of SW-03 Water Quality Monitoring and Sampling Results
Table 11: Summary of SW-04 Water Quality Monitoring and Sampling Results
Table 12: Summary of SW-05 Water Quality Monitoring and Sampling Results
Table 13: Summary of SW-06 Water Quality Monitoring and Sampling Results
Appendix A: Laboratory Analytical Reports

FIGURES



LEGEND

- Thurman Speece Gas Well Pad
- Surface Water Screening and Sampling Locations
- Remediated Area
- Parcel Boundary
- Streams

Scale:

0 — 310 — 620

1 inch = 300 feet

Map References:

- Site boundaries and surface water sampling locations collected and analyzed by Moody and Associates, Inc.
- Parcel boundary retrieved from WVGIS Technical Center. Brooke County Parcels Q2 2021.
- 7½- minute quadrangle: Bethany, WV
- Base topography retrieved from WVGIS Technical Center. 10 ft. interval contours.
- Base inset topography retrieved from ESRI online database. USA Topo Maps.
- Base aerial imagery retrieved from ESRI online database. World Imagery with World Transportation overlay.

Notes:

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FIGURE 1:
SITE LOCATION MAP

Thurman Speece Well Pad

Buffalo District,
Brooke County, WV

Project #: 22-004-KS

Prepared for : SWN Production Company

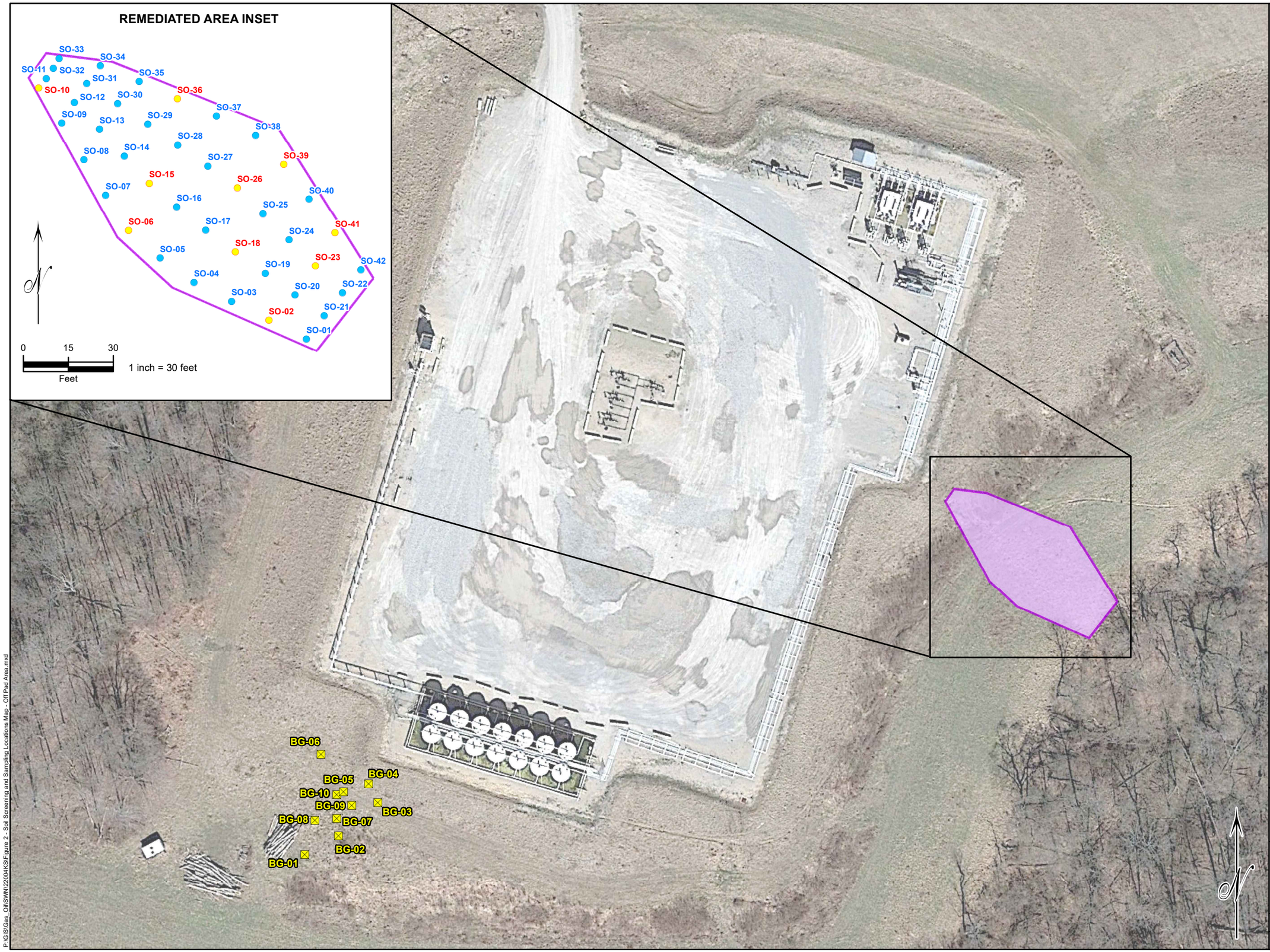
1720 Washington Rd.
Suite 100
Washington, PA 15301
Office: (724) 746-5200
Fax: (724) 746-5603
www.moody-s.com

Moody and Associates, Inc.

Drawn by:	MPS	Date:	3/18/22
Checked by:	JLB	Revision:	

P:\GIS\Gas_Oil\SWN\22004KS\Figure 1 - Site Location Map.mxd

REMEDIATED AREA INSET



LEGEND

- Soil Sampling Locations
- Soil Screening Locations
- Background Soil Sampling Locations
- Off Pad Remediated Area

Scale:

0 60 120

1 inch = 60 feet

Map References:

- Soil screening and sampling locations and background soil sampling locations collected and analyzed by Moody and Associates, Inc.
- Remediated area drawn in by Moody and Associates, Inc. based on collected field data.
- 7½- minute quadrangle: Bethany, WV
- Base aerial imagery referenced in by Moody and Associates, Inc via Google Earth. Date of imagery: 3/21/2021

Notes:

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FIGURE 2:

SOIL SCREENING AND SAMPLING LOCATIONS MAP - OFF PAD AREA

Thurman Speece Well Pad

Buffalo District,
Brooke County, WV

Project #: 22-004-KS

Prepared for : SWN Production Company™

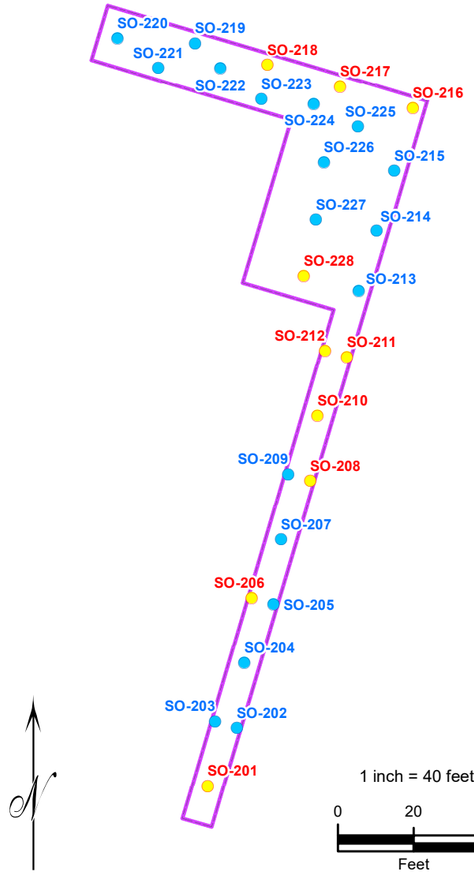
1720 Washington Rd.
Suite 100
Washington, PA 15301
Office: (724) 746-5200
Fax: (724) 746-5603
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Moody and Associates, Inc.

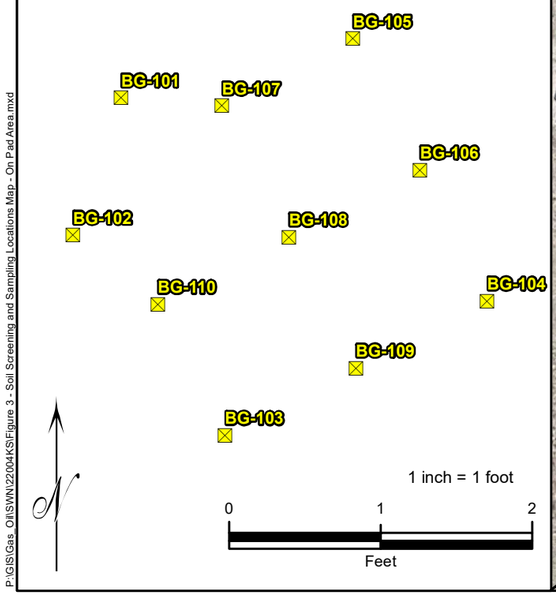
Drawn by:	MPS	Date:	3/16/2022
Checked by:	JLB	Revision:	

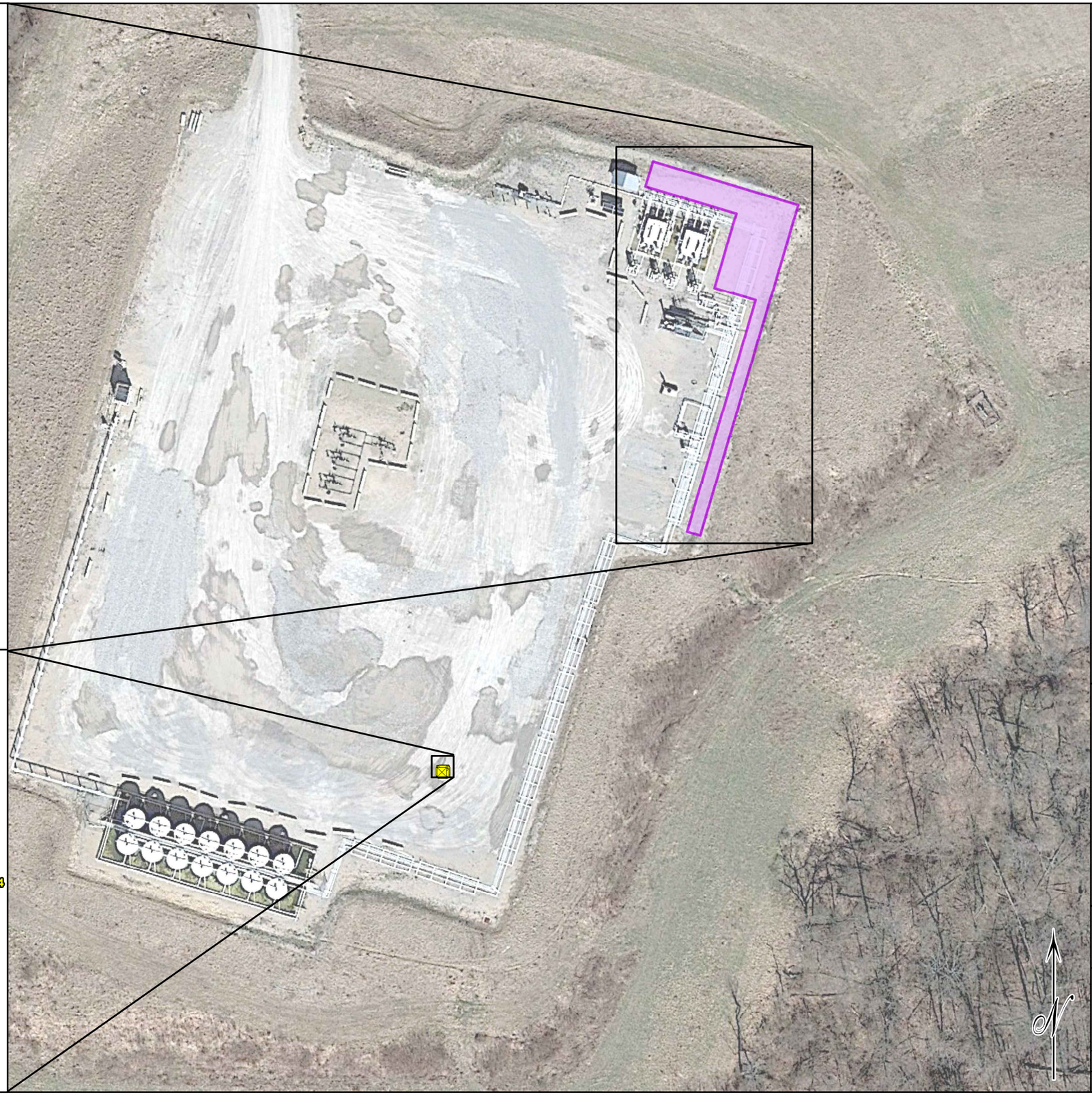
P:\GIS\Gas_Oil\SWN\22004KS\Figure 2 - Soil Screening and Sampling Locations Map - Off Pad Area.mxd

REMEDIATED AREA INSET



BACKGROUND SOIL SAMPLING INSET





LEGEND

- Soil Sampling Locations
- Soil Screening Locations
- Background Soil Sampling Locations
- On Pad Remediated Area

Scale:

0 60 120

1 inch = 60 feet

Map References:

- Soil screening and sampling locations collected and analyzed by Moody and Associates, Inc.
- Remediated area drawn in by Moody and Associates, Inc. based on collected field data.
- 7½- minute quadrangle: Bethany, WV
- Base aerial imagery referenced in by Moody and Associates, Inc via Google Earth. Date of imagery: 3/21/2021

Notes:

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FIGURE 3:
SOIL SCREENING AND SAMPLING LOCATIONS MAP - ON PAD AREA

Thurman Speece Well Pad

Buffalo District,
Brooke County, WV

Project #: 22-004-KS

Prepared for : SWN Production Company™

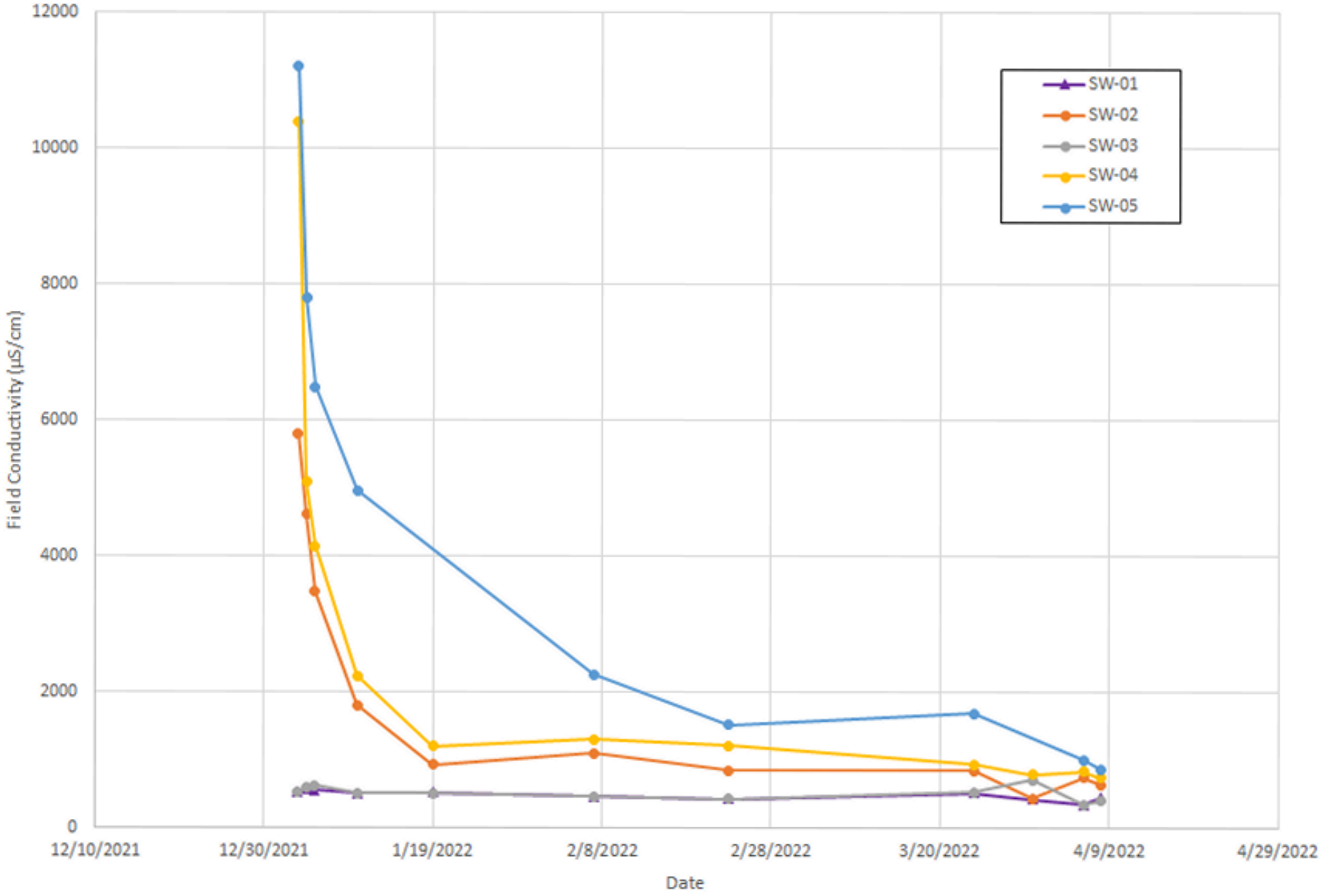
1720 Washington Rd.
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Fax: (724) 746-5603
www.moody-s.com

Moody and Associates, Inc.

Drawn by:	MPS	Date:	3/16/2022
Checked by:	JLB	Revision:	

P:\GIS\Gas_Oil\SWN\22004KS\Figure 3 - Soil Screening and Sampling Locations Map - On Pad Area.mxd

Figure 4
Field Conductivity Concentrations



TABLES

Table 1
List of Sampling Parameters
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

Parameters
General Chemistry
Chloride
Volatile Organic Compounds
Benzene
Toluene
Ethylbenzene
m,p-Xylenes
o-Xylene
Xylenes (Total)
Polycyclic Aromatic Hydrocarbons
Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Chrysene
Dibenz(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene

Table 2

Summary of Soil Screening Results - Off Pad Area

Thurman Speece Well Pad

SWN Production Company, LLC

Buffalo District, Brooke County, West Virginia

Screening Location	Conductivity (mS/cm)	Sample ID/ Laboratory ID
SO-01	0.02	
SO-02	0.07	SO-02/2011184-10
SO-03	0.28	
SO-04	0.69	
SO-05	0.57	
SO-06	0.15	SO-06/2011184-01
SO-07	0.12	
SO-08	0.09	
SO-09	0.41	
SO-10	0.13	SO-10/2011184-04
SO-11	0.11	
SO-12	0.47	
SO-13	0.33	
SO-14	0.39	
SO-15	0.27	SO-15/2011184-02
SO-16	0.45	
SO-17	0.46	
SO-18	0.45	SO-18/2011184-08
SO-19	0.85	
SO-20	2.4	
SO-21	1.66	
SO-22	12.99	
SO-23	1.01	SO-23/2011184-03
SO-24	1.17	
SO-25	1.97	
SO-26	1.64	SO-26/2011184-06
SO-27	0.84	
SO-28	0.12	
SO-29	0.22	
SO-30	0.52	

Screening Location	Conductivity (mS/cm)	Sample ID/ Laboratory ID
SO-31	0.46	
SO-32	0.09	
SO-33	1.49	
SO-34	0.09	
SO-35	0.21	
SO-36	0.17	SO-36/2011184-07
SO-37	0.36	
SO-38	0.52	
SO-39	0.17	SO-39/2011184-09
SO-40	2.03	
SO-41	0.19	SO-41/2011184-05
SO-42	0.57	

Notes:

mS/cm: millisiemens per centimeter

Table 3
Summary of Attainment Soil Sampling Results - Off Pad Area
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SAMPLE/LABORATORY ID											Soil Screening Criteria (1)	Soil Action Levels 2
		SO-02	SO-02	SO-06	SO-10	SO-15	SO-18	SO-23	SO-26	SO-36	SO-39	SO-41		
		2011184-10	2022298-01	2011184-01	2011184-04	2011184-02	2011184-08	2011184-03	2011184-06	2011184-07	2011184-09	2011184-05		
		1/12/2022	2/25/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022		
General Chemistry	**Units**													
Chloride	mg/kg	**1,260**	---	481	252	153	173	541	523	53.0	192	75.3	NA	1,000
Chloride SPLP	mg/L	---	2.86	---	---	---	---	---	---	---	---	---	250 3	NA
% Solids	%	71.0	---	81.6	83.1	79.7	82.7	76.0	78.0	80.3	77.6	77.2	NA	NA
Volatile Organic Compounds	**Units**													
Benzene	mg/kg	< 0.256	---	< 0.201	< 0.198	< 0.192	< 0.184	< 0.201	< 0.221	< 0.214	< 0.220	< 0.238	1.2	0.130
Toluene	mg/kg	< 0.256	---	< 0.201	< 0.198	< 0.192	< 0.184	< 0.201	< 0.221	< 0.214	< 0.220	< 0.238	820	44
Ethylbenzene	mg/kg	< 0.256	---	< 0.201	< 0.198	< 0.192	< 0.184	< 0.201	< 0.221	< 0.214	< 0.220	< 0.238	6.2	2.0
m,p-Xylenes	mg/kg	< 0.512	---	< 0.402	< 0.396	< 0.385	< 0.368	< 0.402	< 0.441	< 0.427	< 0.439	< 0.476	NA	NA
o-Xylene	mg/kg	< 0.256	---	< 0.201	< 0.198	< 0.192	< 0.184	< 0.201	< 0.221	< 0.214	< 0.220	< 0.238	NA	NA
Xylenes (Total)	mg/kg	< 0.256	---	< 0.201	< 0.198	< 0.192	< 0.184	< 0.201	< 0.221	< 0.214	< 0.220	< 0.238	260	5.2
Polycyclic Aromatic Hydrocarbons	**Units**													
Acenaphthene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	4,100	4,100
Acenaphthylene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	4,200	4,200
Anthracene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	23,000	23,000
Benzo(a)anthracene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	1.5	1
Benzo(a)pyrene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	0.11	1
Benzo(b)fluoranthene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	1.1	1
Benzo(g,h,i)perylene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	1,800	1,800
Benzo(k)fluoranthene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	11	1
Chrysene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	110	1
Dibenz(a,h)anthracene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	0.11	1
Fluoranthene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	2,400	2,400
Fluorene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	2,900	2,900
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	1.1	1
Naphthalene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	2.4	4.1
Phenanthrene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	23,000	23,000
Pyrene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	2,300	2,300

Notes:

(1) Values obtained fro the WVDEP De Minimus Table for residential soil

(2) Value reflects Tier 1 Soil Action Level obtained from Table 5 of the West Virginia CAGD for Leaking ASTs and USTs

(3) There are no WV De Minimus standards or USEPA Regional Screening levels available for chloride, therefore the chloride SPLP value was compared to the secondary maximumm contaminant level of 250 mg/L in groundwater

Table 4
Summary of Background Soil Sampling Results - Off Pad Area
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SAMPLE/LABORATORY ID										Soil Screening Criteria (1)	Soil Action Levels 2
		BG-01	BG-02	BG-03	BG-04	BG-05	BG-06	BG-07	BG-08	BG-09	BG-10		
		2011183-01	2011183-02	2011183-03	2011183-04	2011183-05	2011183-06	2011183-07	2011183-08	2011183-09	2011183-10		
		1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022		
General Chemistry	**Units**												
Chloride	mg/kg	83.7	245	323	96.0	706	847	74.7	38.2	175	156	NA	1,000
% Solids	%	69.3	70.6	63.4	73.4	76.6	72.9	57.6	63.0	62.4	65.9	NA	NA
Volatile Organic Compounds	**Units**												
Benzene	mg/kg	< 0.192	< 0.171	< 0.176	< 0.172	< 0.159	< 0.189	< 0.151	< 0.194	< 0.143	< 0.135	1.2	0.130
Toluene	mg/kg	< 0.192	< 0.171	< 0.176	< 0.172	< 0.159	< 0.189	< 0.151	< 0.194	< 0.143	< 0.135	820	44
Ethylbenzene	mg/kg	< 0.192	< 0.171	< 0.176	< 0.172	< 0.159	< 0.189	< 0.151	< 0.194	< 0.143	< 0.135	6.2	2.0
m,p-Xylenes	mg/kg	< 0.383	< 0.342	< 0.351	< 0.344	< 0.317	< 0.378	< 0.302	< 0.388	< 0.287	< 0.270	NA	NA
o-Xylene	mg/kg	< 0.192	< 0.171	< 0.176	< 0.172	< 0.159	< 0.189	< 0.151	< 0.194	< 0.143	< 0.135	NA	NA
Xylenes (Total)	mg/kg	< 0.192	< 0.171	< 0.176	< 0.172	< 0.159	< 0.189	< 0.151	< 0.194	< 0.143	< 0.135	260	5.2
Polycyclic Aromatic Hydrocarbons	**Units**												
Acenaphthene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	4,100	4,100
Acenaphthylene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	4,200	4,200
Anthracene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	23,000	23,000
Benzo(a)anthracene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	1.5	1
Benzo(a)pyrene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	0.11	1
Benzo(b)fluoranthene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	1.1	1
Benzo(g,h,i)perylene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	1,800	1,800
Benzo(k)fluoranthene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	11	1
Chrysene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	110	1
Dibenz(a,h)anthracene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	0.11	1
Fluoranthene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	2,400	2,400
Fluorene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	2,900	2,900
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	1.1	1
Naphthalene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	2.4	4.1
Phenanthrene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	23,000	23,000
Pyrene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	2,300	2,300

Notes:

(1) Values obtained fro the WVDEP De Minimus Table for residential soil

(2) Value reflects Tier 1 Soil Action Level obtained from Table 5 of the West Virginia CAGD for Leaking ASTs and USTs

(3) There are no WV De Minimus standards or USEPA Regional Screening levels available for chloride, therefore the chloride SPLP value was compared to the secondary maximumm contaminant level of 250 mg/L in groundwater

Table 5

Summary of Soil Screening Results - On Pad Area

Thurman Speece Well Pad

SWN Production Company, LLC

Buffalo District, Brooke County, West Virginia

Screening Location	Conductivity (mS/cm)	Sample ID/ Laboratory ID
SO-201	0.16	SO-201 / 2012410-01
SO-202	0.39	
SO-203	0.42	
SO-204	0.25	
SO-205	0.26	
SO-206	0.26	SO-206 / 2012410-03
SO-207	0.12	
SO-208	0.37	SO-208 / 2012410-05
SO-209	0.55	
SO-210	1.01	SO-210 / 2012410-07
SO-211	0.03	SO-211 / 2012410-09
SO-212	0.13	SO-212 / 2012410-11
SO-213	0.02	
SO-214	0.11	
SO-215	0.02	
SO-216	0.02	SO-216 / 2012410-13
SO-217	0.02	SO-217 / 2012410-15
SO-218	0.02	SO-218 / 2012410-17
SO-219	1.03	
SO-220	0.2	
SO-221	0.09	
SO-222	0.11	
SO-223	0.36	
SO-224	0.48	
SO-225	0.52	
SO-226	0.46	
SO-227	0.19	
SO-228	0.32	SO-228 / 2012410-19

Notes:

mS/cm: millisiemens per centimeter

Table 6
Summary of Attainment Soil Sampling Results - On Pad Area
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SAMPLE/LABORATORY ID										Soil Screening Criteria (1)	Soil Action Levels 2
		SO-201	SO-206	SO-208	SO-210	SO-211	SO-212	SO-216	SO-217	SO-218	SO-228		
		2012410-01	2012410-03	2012410-05	2012410-07	2012410-09	2012410-11	2012410-13	2012410-15	2012410-17	2012410-19		
		1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022		
General Chemistry	**Units**												
Chloride	mg/kg	51.0	39.0	111	193	93.0	167	19.3	811	104	51.5	NA	1,000
Chloride SPLP	mg/L	0.417	1.29	1.76	3.26	1.29	1.03	1.26	0.846	0.942	0.984	250 3	NA
% Solids	%	80.2	83.4	70.2	68.9	66.9	74.8	74.5	70.5	75.2	68.5	NA	NA
Volatile Organic Compounds	**Units**												
Benzene	mg/kg	< 0.200	< 0.189	< 0.244	< 0.276	< 0.297	< 0.222	< 0.316	< 0.271	< 0.288	< 0.263	1.2	0.130
Toluene	mg/kg	< 0.200	< 0.189	< 0.244	< 0.276	< 0.297	< 0.222	< 0.316	< 0.271	< 0.288	< 0.263	820	44
Ethylbenzene	mg/kg	< 0.200	< 0.189	< 0.244	< 0.276	< 0.297	< 0.222	< 0.316	< 0.271	< 0.288	< 0.263	6.2	2.0
m,p-Xylenes	mg/kg	< 0.400	< 0.378	< 0.489	< 0.553	< 0.594	< 0.443	< 0.632	< 0.542	< 0.577	< 0.527	NA	NA
o-Xylene	mg/kg	< 0.200	< 0.189	< 0.244	< 0.276	< 0.297	< 0.222	< 0.316	< 0.271	< 0.288	< 0.263	NA	NA
Xylenes (Total)	mg/kg	< 0.200	< 0.189	< 0.244	< 0.276	< 0.297	< 0.222	< 0.316	< 0.271	< 0.288	< 0.263	260	5.2
Polycyclic Aromatic Hydrocarbons	**Units**												
Acenaphthene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	< 0.0089	< 0.0088	< 0.0092	4,100	4,100
Acenaphthylene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	< 0.0089	< 0.0088	< 0.0092	4,200	4,200
Anthracene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	< 0.0089	0.0118	< 0.0092	23,000	23,000
Benzo(a)anthracene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	0.0173	0.0296	0.102	< 0.0092	1.5	1
Benzo(a)pyrene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	< 0.0089	0.0570	< 0.0092	0.11	1
Benzo(b)fluoranthene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	0.0266	0.122	0.197	0.424	0.0907	1.1	1
Benzo(g,h,i)perylene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	0.0094	0.0232	< 0.0092	1,800	1,800
Benzo(k)fluoranthene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	0.0267	0.122	0.197	0.425	0.0909	11	1
Chrysene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	0.0844	0.142	0.294	0.0403	110	1
Dibenz(a,h)anthracene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	< 0.0089	0.0167	< 0.0092	0.11	1
Fluoranthene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	0.0416	0.0859	0.205	0.0124	2,400	2,400
Fluorene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	< 0.0089	< 0.0088	< 0.0092	2,900	2,900
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	0.0102	0.0249	< 0.0092	1.1	1
Naphthalene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	0.0187	0.0160	0.852	0.0121	2.4	4.1
Phenanthrene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	0.0916	0.393	1.310	0.0286	23,000	23,000
Pyrene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	0.0418	0.0878	0.620	0.0135	2,300	2,300

Notes:

(1) Values obtained fro the WVDEP De Minimus Table for residential soil

(2) Value reflects Tier 1 Soil Action Level obtained from Table 5 of the West Virginia CAGD for Leaking ASTs and USTs

(3) There are no WV De Minimus standards or USEPA Regional Screening levels available for chloride, therefore the chloride SPLP value was compared to the secondary maximumm contaminant level of 250 mg/L in groundwater

Table 7
Summary of Background Soil Sampling Results - On Pad Area
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SAMPLE/LABORATORY ID										Soil Screening Criteria (1)	Soil Action Levels 2
		BG-01	BG-02	BG-03	BG-04	BG-05	BG-06	BG-07	BG-08	BG-09	BG-10		
		2012415-01	2012415-03	2012415-05	2012415-07	2012415-09	2012415-11	2012415-13	2012415-15	2012415-17	2012415-19		
		1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022		
General Chemistry	**Units**												
Chloride	mg/kg	58.0	11.2	45.7	42.4	16.1	13.9	16.4	32.3	39.8	15.0	NA	1,000
Chloride SPLP	mg/L	3.42	1.02	2.76	1.98	2.22	5.61	1.31	22.5	2.55	2.25	250 3	NA
% Solids	%	75.0	68.0	75.8	71.1	67.8	68.2	71.0	68.9	69.5	71.8	NA	NA
Volatile Organic Compounds	**Units**												
Benzene	mg/kg	< 0.258	< 0.305	< 0.250	< 0.273	< 0.350	< 0.324	< 0.336	< 0.320	< 0.311	< 0.293	1.2	0.130
Toluene	mg/kg	< 0.258	< 0.305	< 0.250	< 0.273	< 0.350	< 0.324	< 0.336	< 0.320	< 0.311	< 0.293	820	44
Ethylbenzene	mg/kg	< 0.258	< 0.305	< 0.250	< 0.273	< 0.350	< 0.324	< 0.336	< 0.320	< 0.311	< 0.293	6.2	2.0
m,p-Xylenes	mg/kg	< 0.516	< 0.610	< 0.500	< 0.545	< 0.701	< 0.648	< 0.672	< 0.639	< 0.623	< 0.587	NA	NA
o-Xylene	mg/kg	< 0.258	< 0.305	< 0.250	< 0.273	< 0.350	< 0.324	< 0.336	< 0.320	< 0.311	< 0.293	NA	NA
Xylenes (Total)	mg/kg	< 0.258	< 0.305	< 0.250	< 0.273	< 0.350	< 0.324	< 0.336	< 0.320	< 0.311	< 0.293	260	5.2
Polycyclic Aromatic Hydrocarbons	**Units**												
Acenaphthene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	4,100	4,100
Acenaphthylene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	4,200	4,200
Anthracene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	23,000	23,000
Benzo(a)anthracene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	1.5	1
Benzo(a)pyrene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	0.11	1
Benzo(b)fluoranthene	mg/kg	0.0452	0.0538	0.0280	0.0392	0.0377	0.0385	0.0564	0.0767	0.0790	0.0421	1.1	1
Benzo(g,h,i)perylene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	1,800	1,800
Benzo(k)fluoranthene	mg/kg	0.0453	0.0539	0.0281	0.0393	0.0378	0.0386	0.0569	0.0768	0.0792	0.0422	11	1
Chrysene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	0.0111	0.0149	0.0128	< 0.0090	110	1
Dibenz(a,h)anthracene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	0.11	1
Fluoranthene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	2,400	2,400
Fluorene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	2,900	2,900
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	1.1	1
Naphthalene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	0.0152	< 0.0094	0.0262	< 0.0092	< 0.0090	2.4	4.1
Phenanthrene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	0.0133	< 0.0094	0.0232	< 0.0092	< 0.0090	23,000	23,000
Pyrene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	2,300	2,300

Notes:

(1) Values obtained fro the WVDEP De Minimus Table for residential soil

(2) Value reflects Tier 1 Soil Action Level obtained from Table 5 of the West Virginia CAGD for Leaking ASTs and USTs

(3) There are no WV De Minimus standards or USEPA Regional Screening levels available for chloride, therefore the chloride SPLP value was compared to the secondary maximumm contaminant level of 250 mg/L in groundwater

Table 8
Summary of SW-01 Water Quality Monitoring and Sampling Results
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SW-01												Aquatic Life *				Human Health *		All Other Uses *
														B1,B4		B2		B2		
		1/3/2022	1/4/2022	1/5/2022	1/10/2022	1/19/2022	2/7/2022	2/23/2022	3/18/2022	3/24/2022	3/31/2022	4/6/2022	4/8/2022	Acute[1]	Chronic[2]	Acute[1]	Chronic[2]	C[3]	A[4]	
Field Parameters	**Units**																			
Temperature	**(°C)**	8.62	9.03	9.08	3.22	4.94	4.11	6.82	---	13.39	16.86	9.31	16.53	NA	NA	NA	NA	NA	NA	NA
pH	**(SU)**	6.77	6.68	7.22	7.78	7.30	8.09	8.06	---	7.63	7.65	7.98	6.77	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0
ORP	**(mV)**	265	525	318	109	108	173	84	---	258	52	191	338	NA	NA	NA	NA	NA	NA	NA
Specific Conductance	**(µS/cm)**	532	579	552	515	517	463	434	---	525	434	353	459	NA	NA	NA	NA	NA	NA	NA
Turbidity	**(NTU)**	0.0	0.0	0.0	15.5	N/A	0.0	0.0	---	15.1	1.4	---	---	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	**(mg/L)**	340	370	354	329	331	301	282	---	336	282	229	299	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	**(mg/L)**	8.30	8.46	8.35	12.65	10.70	12.49	9.53	---	9.52	10.20	6.00	9.66	NA	NA	NA	NA	NA	NA	NA
Chloride	**(mg/L)**	81	< 32	< 32	---	---	28	< 28	< 29	< 29	40	< 29	34	860	230	860	230	250	250	NA
General Chemistry	**Units**																			
Chloride	**(mg/L)**	37.4	---	---	---	---	---	8.1	---	---	---	---	7.05	860	230	860	230	250	250	NA
Volatile Organic Compounds	**Units**																			
Benzene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.410	---	---	---	---	---	NA	NA	NA	NA	51	0.66	NA
Toluene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.370	---	---	---	---	---	NA	NA	NA	NA	200,000	6,800	NA
Ethylbenzene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.420	---	---	---	---	---	NA	NA	NA	NA	29,000	3,100	NA
m,p-Xylenes	**(µg/L)**	< 2.0	---	---	---	---	---	< 1.05	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
o-Xylene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.450	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Xylenes (Total)	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.450	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons	**Units**																			
Acenaphthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	990	670	NA
Acenaphthylene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	40,000	8,300	NA
Benzo(a)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(a)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(b)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(g,h,i)perylene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Chrysene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Dibenz(a,h)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	370	300	NA
Fluorene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	5,300	1,100	NA
Indeno(1,2,3-cd)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Naphthalene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Pyrene	**(mg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	4,000	830	NA

Notes:

*: West Virginia Surface Water Standards obtained from 47CSR2 - Appendix E, Table 1
B1: Warm water fishery use subcategory of Aquatic life use category
B2: Trout waters use subcategory of Aquatic life use category
B4: Wetlands use subcategory of Aquatic life use category
C: Water contact recreation use subcategory of Human health use category
A: Public water use subcategory of Human health use category
1: One hour average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
2: Four-day average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
3: These criteria have been calculated to protect human health from toxic effects through fish consumption, unless otherwise noted
4: These criteria have been calculated to protect human health from toxic and/or organoleptic effects through drinking water and fish consumption, unless otherwise noted
5: Criteria based on a surface water hardness value of 100 mg/L CaCO3

°C: degrees Celsius
mV: millivolts
NA: not applicable
NTU: nephelometric turbidity units
ORP: oxidation-reduction potential
SMCL: secondary maximum contaminant level
SU: standard pH units
µS/cm: microsiemens per centimeter
---: not measured

Table 9
Summary of SW-02 Water Quality Monitoring and Sampling Results
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SW-02												Aquatic Life *				Human Health *		All Other Uses *
														B1,B4		B2		B2		
		1/3/2022	1/4/2022	1/5/2022	1/10/2022	1/19/2022	2/7/2022	2/23/2022	3/18/2022	3/24/2022	3/31/2022	4/6/2022	4/8/2022	Acute[1]	Chronic[2]	Acute[1]	Chronic[2]	C[3]	A[4]	
Field Parameters	**Units**																			
Temperature	**(°C)**	7.92	8.33	8.34	7.16	7.94	5.42	6.21	---	13.42	16.13	9.90	15.98	NA	NA	NA	NA	NA	NA	NA
pH	**(SU)**	7.26	6.97	7.39	7.12	7.01	7.71	7.88	---	7.73	8.02	7.80	7.31	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0
ORP	**(mV)**	273	315	332	127	129	174	101	---	262	56	203	266	NA	NA	NA	NA	NA	NA	NA
Specific Conductance	**(µS/cm)**	5,810	4,610	3,480	1,810	928	1,100	854	---	857	444	745	649	NA	NA	NA	NA	NA	NA	NA
Turbidity	**(NTU)**	0.0	8.7	2.7	10.2	N/A	0.0	26.9	---	120.0	0.0	---	---	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	**(mg/L)**	3,660	2,950	2,230	1,160	594	705	546	---	549	289	477	416	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	**(mg/L)**	8.17	8.67	8.10	13.66	29.54	4.47	9.99	---	9.23	9.10	7.86	9.70	NA	NA	NA	NA	NA	NA	NA
Chloride	**(mg/L)**	**424**	**667**	**612**	**---**	**---**	190	98	70	61	54	< 29	61	860	230	860	230	250	250	NA
General Chemistry	**Units**																			
Chloride	**(mg/L)**	**1,620**	**---**	**---**	**---**	**---**	**---**	118	**---**	**---**	**---**	**---**	65.3	860	230	860	230	250	250	NA
Volatile Organic Compounds	**Units**																			
Benzene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.410	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	51	0.66	NA
Toluene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.370	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	200,000	6,800	NA
Ethylbenzene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.420	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	29,000	3,100	NA
m,p-Xylenes	**(µg/L)**	< 2.0	**---**	**---**	**---**	**---**	**---**	< 1.05	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
o-Xylene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.450	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Xylenes (Total)	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.450	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons	**Units**																			
Acenaphthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	990	670	NA
Acenaphthylene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Anthracene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	40,000	8,300	NA
Benzo(a)anthracene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(a)pyrene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(b)fluoranthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(g,h,i)perylene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Chrysene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Dibenz(a,h)anthracene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Fluoranthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	370	300	NA
Fluorene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	5,300	1,100	NA
Indeno(1,2,3-cd)pyrene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Naphthalene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Pyrene	**(mg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	4,000	830	NA

Notes:

*: West Virginia Surface Water Standards obtained from 47CSR2 - Appendix E, Table 1
B1: Warm water fishery use subcategory of Aquatic life use category
B2: Trout waters use subcategory of Aquatic life use category
B4: Wetlands use subcategory of Aquatic life use category
C: Water contact recreation use subcategory of Human health use category
A: Public water use subcategory of Human health use category
1: One hour average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
2: Four-day average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
3: These criteria have been calculated to protect human health from toxic effects through fish consumption, unless otherwise noted
4: These criteria have been calculated to protect human health from toxic and/or organoleptic effects through drinking water and fish consumption, unless otherwise noted

5: Criteria based on a surface water hardness value of 100 mg/L CaCO3

°C: degrees Celsius
mV: millivolts
NA: not applicable
NTU: nephelometric turbidity units
ORP: oxidation-reduction potential
SMCL: secondary maximum contaminant level
SU: standard pH units
µS/cm: microsiemens per centimeter
---: not measured

Table 10
Summary of SW-03 Water Quality Monitoring and Sampling Results
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SW-03												Aquatic Life *				Human Health *		All Other Uses *
														B1,B4		B2		B2		
		1/3/2022	1/4/2022	1/5/2022	1/10/2022	1/19/2022	2/7/2022	2/23/2022	3/18/2022	3/24/2022	3/31/2022	4/6/2022	4/8/2022	Acute[1]	Chronic[2]	Acute[1]	Chronic[2]	C[3]	A[4]	
Field Parameters	**Units**																			
Temperature	**(°C)**	4.83	6.30	6.54	2.11	3.85	6.03	5.90	---	13.54	16.70	9.72	15.43	NA	NA	NA	NA	NA	NA	NA
pH	**(SU)**	8.04	7.71	7.93	7.64	7.40	8.42	8.06	---	8.02	8.06	7.93	7.34	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0
ORP	**(mV)**	245	256	293	124	91	130	107	---	250	60	124	259	NA	NA	NA	NA	NA	NA	NA
Specific Conductance	**(µS/cm)**	533	607	623	515	513	460	428	---	532	711	356	405	NA	NA	NA	NA	NA	NA	NA
Turbidity	**(NTU)**	0.0	0.0	1.1	8.7	N/A	0.0	0.0	---	42.6	17.8	---	---	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	**(mg/L)**	341	389	394	330	328	300	278	---	341	455	232	263	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	**(mg/L)**	8.96	8.39	8.64	10.37	11.53	12.58	9.20	---	10.02	8.31	5.75	7.95	NA	NA	NA	NA	NA	NA	NA
Chloride	**(mg/L)**	91	< 32	< 32	---	---	< 28	< 28	< 29	< 29	< 29	< 29	< 29	860	230	860	230	250	250	NA
General Chemistry	**Units**																			
Chloride	**(mg/L)**	8.58	---	---	---	---	---	8.70	---	---	---	---	7.41	860	230	860	230	250	250	NA
Volatile Organic Compounds	**Units**																			
Benzene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.410	---	---	---	---	---	NA	NA	NA	NA	51	0.66	NA
Toluene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.370	---	---	---	---	---	NA	NA	NA	NA	200,000	6,800	NA
Ethylbenzene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.420	---	---	---	---	---	NA	NA	NA	NA	29,000	3,100	NA
m,p-Xylenes	**(µg/L)**	< 2.0	---	---	---	---	---	< 1.05	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
o-Xylene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.450	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Xylenes (Total)	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.450	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons	**Units**																			
Acenaphthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	990	670	NA
Acenaphthylene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	40,000	8,300	NA
Benzo(a)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(a)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(b)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(g,h,i)perylene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Chrysene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Dibenz(a,h)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	370	300	NA
Fluorene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	5,300	1,100	NA
Indeno(1,2,3-cd)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Naphthalene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Pyrene	**(mg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	4,000	830	NA

Notes:

*: West Virginia Surface Water Standards obtained from 47CSR2 - Appendix E, Table 1
B1: Warm water fishery use subcategory of Aquatic life use category
B2: Trout waters use subcategory of Aquatic life use category
B4: Wetlands use subcategory of Aquatic life use category
C: Water contact recreation use subcategory of Human health use category
A: Public water use subcategory of Human health use category
1: One hour average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
2: Four-day average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
3: These criteria have been calculated to protect human health from toxic effects through fish consumption, unless otherwise noted
4: These criteria have been calculated to protect human health from toxic and/or organoleptic effects through drinking water and fish consumption, unless otherwise noted
5: Criteria based on a surface water hardness value of 100 mg/L CaCO3

°C: degrees Celsius
mV: millivolts
NA: not applicable
NTU: nephelometric turbidity units
ORP: oxidation-reduction potential
SMCL: secondary maximum contaminant level
SU: standard pH units
µS/cm: microsiemens per centimeter
---: not measured

Table 11
Summary of SW-04 Water Quality Monitoring and Sampling Results
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SW-04												Aquatic Life *				Human Health *		All Other Uses *
														B1,B4		B2		B2		
		1/3/2022	1/4/2022	1/5/2022	1/10/2022	1/19/2022	2/7/2022	2/23/2022	3/18/2022	3/24/2022	3/31/2022	4/6/2022	4/8/2022	Acute[1]	Chronic[2]	Acute[1]	Chronic[2]	C[3]	A[4]	
Field Parameters	**Units**																			
Temperature	**(°C)**	5.37	9.45	9.36	10.81	11.39	10.02	7.5	---	12.37	12.78	10.27	14.27	NA	NA	NA	NA	NA	NA	NA
pH	**(SU)**	7.23	7.04	7.17	6.69	6.20	7.11	7.29	---	6.71	7.77	6.99	7.39	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0
ORP	**(mV)**	286	270	252	136	240	168	95	---	280	80	244	272	NA	NA	NA	NA	NA	NA	NA
Specific Conductance	**(µS/cm)**	10,400	5,090	4,150	2,240	1,200	1,310	1,220	---	938	797	839	751	NA	NA	NA	NA	NA	NA	NA
Turbidity	**(NTU)**	0.0	89.6	28.2	210	N/A	0.0	10.2	---	46.5	2.5	126.0	---	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	**(mg/L)**	6,420	3,210	2,660	1,440	768	838	784	---	600	510	537	481	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	**(mg/L)**	8.55	7.72	8.07	11.28	19.12	11.12	9.77	---	9.31	9.01	6.75	9.09	NA	NA	NA	NA	NA	NA	NA
Chloride	**(mg/L)**	**3,235**	**612**	**561**	**---**	**---**	**238**	**255**	88	61	47	**261**	122	860	230	860	230	250	250	NA
General Chemistry	**Units**																			
Chloride	**(mg/L)**	**3,020**	**---**	**---**	**---**	**---**	**---**	**249**	**---**	**---**	**---**	**---**	135	860	230	860	230	250	250	NA
Volatile Organic Compounds	**Units**																			
Benzene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.410	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	51	0.66	NA
Toluene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.370	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	200,000	6,800	NA
Ethylbenzene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.420	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	29,000	3,100	NA
m,p-Xylenes	**(µg/L)**	< 2.0	**---**	**---**	**---**	**---**	**---**	< 1.05	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
o-Xylene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.450	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Xylenes (Total)	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.450	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons	**Units**																			
Acenaphthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	990	670	NA
Acenaphthylene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Anthracene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	40,000	8,300	NA
Benzo(a)anthracene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(a)pyrene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(b)fluoranthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(g,h,i)perylene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Chrysene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Dibenz(a,h)anthracene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Fluoranthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	370	300	NA
Fluorene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	5,300	1,100	NA
Indeno(1,2,3-cd)pyrene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Naphthalene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Pyrene	**(mg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	4,000	830	NA

Notes:

*: West Virginia Surface Water Standards obtained from 47CSR2 - Appendix E, Table 1
B1: Warm water fishery use subcategory of Aquatic life use category
B2: Trout waters use subcategory of Aquatic life use category
B4: Wetlands use subcategory of Aquatic life use category
C: Water contact recreation use subcategory of Human health use category
A: Public water use subcategory of Human health use category
1: One hour average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
2: Four-day average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
3: These criteria have been calculated to protect human health from toxic effects through fish consumption, unless otherwise noted
4: These criteria have been calculated to protect human health from toxic and/or organoleptic effects through drinking water and fish consumption, unless otherwise noted
5: Criteria based on a surface water hardness value of 100 mg/L CaCO3

°C: degrees Celsius
mV: millivolts
NA: not applicable
NTU: nephelometric turbidity units
ORP: oxidation-reduction potential
SMCL: secondary maximum contaminant level
SU: standard pH units
µS/cm: microsiemens per centimeter
---: not measured

Table 12
Summary of SW-05 Water Quality Monitoring and Sampling Results
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SW-05													Aquatic Life *				Human Health *		All Other Uses *
															B1,B4		B2		B2		
		1/3/2022	1/4/2022	1/5/2022	1/10/2022	1/19/2022	2/7/2022	2/23/2022	3/18/2022	3/24/2022	3/31/2022	4/6/2022	4/7/2022	4/8/2022	Acute[1]	Chronic[2]	Acute[1]	Chronic[2]	C[3]	A[4]	
Field Parameters	**Units**																				
Temperature	**(°C)**	8.07	9.61	9.79	11.80		12.38	10.04	---	14.18		11.56	---	15.27	NA	NA	NA	NA	NA	NA	NA
pH	**(SU)**	6.71	6.76	6.86	6.48		6.55	6.36	---	5.83		6.04	---	7.13	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0
ORP	**(mV)**	299	252	284	167		285	192	---	311		291	---	280	NA	NA	NA	NA	NA	NA	NA
Specific Conductance	**(µS/cm)**	11,200	7,800	6,490	4,960	No Flow	2,260	1,520	---	1,690	No flow	1,010	---	869	NA	NA	NA	NA	NA	NA	NA
Turbidity	**(NTU)**	4.0	0.0	0.0	0.0		6.4	0.0	---	37.9		80.3	---	---	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	**(mg/L)**	6,920	4,910	4,080	3,170		1,460	977	---	1,080		644	---	556	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	**(mg/L)**	6.87	7.01	6.96	8.47		9.93	11.19	---	11.54		12.51	---	8.66	NA	NA	NA	NA	NA	NA	NA
Chloride	**(mg/L)**	**1,487**	---	**1,531**	---		**616**	225	**323**	**323**		**1,065**	148	148	860	230	860	230	250	250	NA
General Chemistry	**Units**																				
Chloride	**(mg/L)**	**3,300**	---	---	---	---	---	**348**	---	---		---	---	166	860	230	860	230	250	250	NA
Volatile Organic Compounds	**Units**																				
Benzene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.410	---	---		---	---	---	NA	NA	NA	NA	51	0.66	NA
Toluene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.370	---	---		---	---	---	NA	NA	NA	NA	200,000	6,800	NA
Ethylbenzene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.420	---	---		---	---	---	NA	NA	NA	NA	29,000	3,100	NA
m,p-Xylenes	**(µg/L)**	< 2.0	---	---	---	---	---	< 1.05	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
o-Xylene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.450	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
Xylenes (Total)	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.450	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons	**Units**																				
Acenaphthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	990	670	NA
Acenaphthylene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
Anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	40,000	8,300	NA
Benzo(a)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(a)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(b)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(g,h,i)perylene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Chrysene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Dibenz(a,h)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	370	300	NA
Fluorene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	5,300	1,100	NA
Indeno(1,2,3-cd)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Naphthalene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
Pyrene	**(mg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	4,000	830	NA

Notes:

*: West Virginia Surface Water Standards obtained from 47CSR2 - Appendix E, Table 1
B1: Warm water fishery use subcategory of Aquatic life use category
B2: Trout waters use subcategory of Aquatic life use category
B4: Wetlands use subcategory of Aquatic life use category
C: Water contact recreation use subcategory of Human health use category
A: Public water use subcategory of Human health use category
1: One hour average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
2: Four-day average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
3: These criteria have been calculated to protect human health from toxic effects through fish consumption, unless otherwise noted
4: These criteria have been calculated to protect human health from toxic and/or organoleptic effects through drinking water and fish consumption, unless otherwise noted
5: Criteria based on a surface water hardness value of 100 mg/L CaCO3

°C: degrees Celsius
mV: millivolts
NA: not applicable
NTU: nephelometric turbidity units
ORP: oxidation-reduction potential
SMCL: secondary maximum contaminant level
SU: standard pH units
µS/cm: microsiemens per centimeter
---: not measured

Table 13
Summary of SW-06 Water Quality Monitoring and Sampling Results
Thurman Speece Site
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SW-06						Aquatic Life *				Human Health *		All Other Uses *
								B1,B4		B2		B2		
		1/3/2022	1/4/2022	1/5/2022	1/10/2022	1/19/2022	2/7/2022	Acute[1]	Chronic[2]	Acute[1]	Chronic[2]	C[3]	A[4]	
Field Parameters	**Units**													
Temperature	**(°C)**	7.29	7.44	6.69	Frozen	Frozen	Pipe Has Been Removed	NA	NA	NA	NA	NA	NA	NA
pH	**(SU)**	6.98	6.94	7.05				6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0
ORP	**(mV)**	253	242	292				NA	NA	NA	NA	NA	NA	NA
Specific Conductance	**(µS/cm)**	22,600	30,000	19,600				NA	NA	NA	NA	NA	NA	NA
Turbidity	**(NTU)**	9.9	0.0	0.0				NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	**(mg/L)**	14,000	18,300	12,200				NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	**(mg/L)**	7.54	6.42	7.11				NA	NA	NA	NA	NA	NA	NA
Chloride	**(mg/L)**	**5,641**	**6,454**	**2,256**				860	230	860	230	250	250	NA
General Chemistry	**Units**													
Chloride	**(mg/L)**	**9,530**	---	---	---	---	---	860	230	860	230	250	250	NA
Volatile Organic Compounds	**Units**													
Benzene	**(µg/L)**	6.54	---	---	---	---	---	NA	NA	NA	NA	51	0.66	NA
Toluene	**(µg/L)**	20.3	---	---	---	---	---	NA	NA	NA	NA	200,000	6,800	NA
Ethylbenzene	**(µg/L)**	2.22	---	---	---	---	---	NA	NA	NA	NA	29,000	3,100	NA
m,p-Xylenes	**(µg/L)**	22.9	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
o-Xylene	**(µg/L)**	4.99	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Xylenes (Total)	**(µg/L)**	27.9	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons	**Units**													
Acenaphthene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	990	670	NA
Acenaphthylene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	40,000	8,300	NA
Benzo(a)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(a)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(b)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(g,h,i)perylene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Chrysene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Dibenz(a,h)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	370	300	NA
Fluorene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	5,300	1,100	NA
Indeno(1,2,3-cd)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Naphthalene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Pyrene	**(mg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	4,000	830	NA

Notes:

*: West Virginia Surface Water Standards obtained from 47CSR2 - Appendix E, Table 1
B1: Warm water fishery use subcategory of Aquatic life use category
B2: Trout waters use subcategory of Aquatic life use category
B4: Wetlands use subcategory of Aquatic life use category
C: Water contact recreation use subcategory of Human health use category
A: Public water use subcategory of Human health use category
1: One hour average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
2: Four-day average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
3: These criteria have been calculated to protect human health from toxic effects through fish consumption, unless otherwise noted
4: These criteria have been calculated to protect human health from toxic and/or organoleptic effects through drinking water and fish consumption, unless otherwise noted
5: Criteria based on a surface water hardness value of 100 mg/L CaCO3

°C: degrees Celsius
mV: millivolts
NA: not applicable
NTU: nephelometric turbidity units
ORP: oxidation-reduction potential
SMCL: secondary maximum contaminant level
SU: standard pH units
µS/cm: microsiemens per centimeter
---: not measured

APPENDIX A

Laboratory Analytical Reports

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
P: (724) 463-8378
F: (724) 465-4209
PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
P: (570) 321-9002
F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

12 January 2022

Moody & Associates, Inc. (Washington Office)
Attn: Joshua Boyda
1720 Washington Road
Washington, PA 15301

Work Order: 2010229
Project: SWN WV Thurman Spece Stream Sampling

Report of Analysis

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received	Sample Notes
SW-01	2010229-01	Water	01/03/2022 16:40	01/04/2022 18:00	
SW-02	2010229-02	Water	01/03/2022 16:45	01/04/2022 18:00	
SW-03	2010229-03	Water	01/03/2022 17:00	01/04/2022 18:00	
SW-04	2010229-04	Water	01/03/2022 17:25	01/04/2022 18:00	
SW-05	2010229-05	Water	01/03/2022 17:45	01/04/2022 18:00	
SW-06	2010229-06	Water	01/03/2022 17:55	01/04/2022 18:00	
Trip Blank	2010229-07	Water	01/03/2022 00:00	01/04/2022 18:00	

Report Narrative

The results contained in this report are only representative of the samples received. Environmental Service Laboratories, Inc. is not responsible for use or interpretation of the data included herein.

Definitions

RL Reporting Limit
CFU Colony Forming Units

Certifications

Analyses performed by Environmental Service Laboratories, Inc., Indiana PA unless otherwise specified.

Environmental Service Laboratories, Inc., Indiana, West Virginia DEP Certificate # 392

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PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Approved By

Lucas Winner
Project Manager

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-01
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-01

Sample Date: 01/03/2022 16:40
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	37.4	mg/L		0.303	2.00	EPA300.0 2.1	TLL	01/11/22 04:03
Volatile Organics								
Benzene	<1.00	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 17:21
Toluene	<1.00	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 17:21
Ethyl Benzene	<1.00	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 17:21
m,p-Xylenes	<2.00	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 17:21
o-Xylene	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 17:21
Total Xylenes	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 17:21
Surrogate: 1,2-Dichloroethane-d4	*105 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 17:21*
Surrogate: Toluene-d8	*99 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 17:21*
Surrogate: 4-Bromofluorobenzene	*95 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 17:21*

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PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-02
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-02

Sample Date: 01/03/2022 16:45
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	1620	mg/L		15.2	100	EPA300.0 2.1	TLL	01/11/22 11:31
Volatile Organics								
Benzene	<1.00	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 17:46
Toluene	<1.00	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 17:46
Ethyl Benzene	<1.00	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 17:46
m,p-Xylenes	<2.00	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 17:46
o-Xylene	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 17:46
Total Xylenes	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 17:46
Surrogate: 1,2-Dichloroethane-d4	*108 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 17:46*
Surrogate: Toluene-d8	*99 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 17:46*
Surrogate: 4-Bromofluorobenzene	*96 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 17:46*

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PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-03
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-03

Sample Date: 01/03/2022 17:00
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	8.58	mg/L		0.303	2.00	EPA300.0 2.1	TLL	01/11/22 04:40
Volatile Organics								
Benzene	<1.00	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 18:12
Toluene	<1.00	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 18:12
Ethyl Benzene	<1.00	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 18:12
m,p-Xylenes	<2.00	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 18:12
o-Xylene	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 18:12
Total Xylenes	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 18:12
Surrogate: 1,2-Dichloroethane-d4	*106 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 18:12*
Surrogate: Toluene-d8	*99 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 18:12*
Surrogate: 4-Bromofluorobenzene	*93 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 18:12*

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Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-04
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-04

Sample Date: 01/03/2022 17:25
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	3020	mg/L		15.2	100	EPA300.0 2.1	TLL	01/11/22 12:00
Volatile Organics								
Benzene	<1.00	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 18:37
Toluene	<1.00	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 18:37
Ethyl Benzene	<1.00	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 18:37
m,p-Xylenes	<2.00	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 18:37
o-Xylene	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 18:37
Total Xylenes	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 18:37
Surrogate: 1,2-Dichloroethane-d4	*105 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 18:37*
Surrogate: Toluene-d8	*99 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 18:37*
Surrogate: 4-Bromofluorobenzene	*94 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 18:37*

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PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-05
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-05

Sample Date: 01/03/2022 17:45
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	3300	mg/L		15.2	100	EPA300.0 2.1	TLL	01/11/22 12:18
Volatile Organics								
Benzene	<1.00	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 19:02
Toluene	<1.00	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 19:02
Ethyl Benzene	<1.00	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 19:02
m,p-Xylenes	<2.00	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 19:02
o-Xylene	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 19:02
Total Xylenes	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 19:02
Surrogate: 1,2-Dichloroethane-d4	*107 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 19:02*
Surrogate: Toluene-d8	*100 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 19:02*
Surrogate: 4-Bromofluorobenzene	*94 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 19:02*

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-06
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-06

Sample Date: 01/03/2022 17:55
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	9530	mg/L		30.3	200	EPA300.0 2.1	TLL	01/11/22 12:46
Volatile Organics								
Benzene	6.54	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 19:27
Toluene	20.3	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 19:27
Ethyl Benzene	2.22	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 19:27
m,p-Xylenes	22.9	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 19:27
o-Xylene	4.99	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 19:27
Total Xylenes	27.9	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 19:27
Surrogate: 1,2-Dichloroethane-d4	*102 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 19:27*
Surrogate: Toluene-d8	*97 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 19:27*
Surrogate: 4-Bromofluorobenzene	*101 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 19:27*

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PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-07
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: Trip Blank

Sample Date: 01/03/2022 00:00
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
Volatile Organics								
Benzene	<1.00	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 19:52
Toluene	0.810	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 19:52
Ethyl Benzene	<1.00	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 19:52
m,p-Xylenes	<2.00	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 19:52
o-Xylene	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 19:52
Total Xylenes	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 19:52
Surrogate: 1,2-Dichloroethane-d4	*107 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 19:52*
Surrogate: Toluene-d8	*99 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 19:52*
Surrogate: 4-Bromofluorobenzene	*95 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 19:52*

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE 1 OF 4

HEADQUARTERS
1803 Philadelphia St.
Indiana, PA 15701
(724) 463-TEST
FAX: (724) 465-4209

SOUTHERN DIVISION
1276 Bentleyville Road
Van Voorhis, PA 15366
(724) 258-TEST
FAX: (724) 258-8376

THWEST DIVISION
lain Street
sville, PA 16150
463-TEST
FAX: (724) 465-4209

2010229

PUSH!

Requested TAT:
Rush 48hr days [X]
Standard [ ]

FOR INTERNAL LABORATORY USE ONLY

Sample Identification	ESL# 2016229	Sample Type: Composite Date on/off	Composite Time on/off	Grab Date	Grab Time	Matrix	# of Containers	Container Type / Preservative	Analysis Requested
SU-01	01			1/3/22	1640	W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS
Trip Blank	07					W	3	VOA Vial 40mL HCl	BTEX

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

	Date/ Time		Date/ Time
Sampled By: (Signature)	1/3/22 1800		
Relinquished By: (Signature)	1/4/22 0900	Received By: (Signature)	1/4/22 0900
Relinquished By: (Signature)	1/4/22 0950	Received By: (Signature)	1/4/22 0950
Relinquished By: (Signature)	1/4/22 1037	Received By: (Signature)	
Relinquished By: (Signature)	1-4-22 1510	Received By: (Signature)	1-4-22 1315

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

spm (00382) 1/4/22 1800

Project Notes:

Thurman Spece Stream Sampling

Please direct bill SWN (Josh Boyda)

Company/Name:	**Moody & Associates (Washington, PA)**
Address:	1720 Washington Road, Suite 100
	Washington, PA 15301
Contact Person:	Katie Sasala
Phone Number:	724-749-4606
Email Address:	Ksasala@moody-s.com
State of Collection:	WV

Moody Project No.: 22-002-KS

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE 2 OF 4

2010229

HERN DIVISION
entleyville Road
orhis, PA 15366
58-TEST
FAX: (724) 258-8376

X

NORTHERN DIVISION
435 Broad Street
Montoursville, PA 17754
(570) 321-9003
FAX: (570) 321-1957

PUSH!

NORTHWEST DIVISION
950 Main Street
Sharpsville, PA 16150
(724) 463-TEST
FAX: (724) 465-4209

Requested TAT:
Rush ASAP days X
Standard

FOR INTERNAL LABORATORY USE ONLY

Sample Identification	ESL#	Sample Type: Composite Date on/off	Composite Time on/off	Grab Date	Grab Time	Matrix	# of Containers	Container Type / Preservative	Analysis Requested
SW-02	02			1/3/22	1645	W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS
SW-03	03			1/3/22	1700	W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Project Notes:

Thurman Spece Stream Sampling

Please direct bill SWN (Josh Boyda)

Sampled By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
[signature]	1/3/22 1800	[signature]	1/4/22 0900
Relinquished By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
[signature]	1/4/22 0900	[signature]	1/4/22 0950
Relinquished By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
[signature]	1/4/22 1037	[signature]	1-4-22 1315
Relinquished By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
[signature]	1-4-22 1510	SPM (CCS382)	1/4/22 1800

Company/Name: **Moody & Associates (Washington, PA)**
Address: 1720 Washington Road, Suite 100
Washington, PA 15301
Contact Person: Katie Sasala
Phone Number: 724-749-4606
Email Address: Ksasala@moody-s.com
State of Collection: WV

Moody Project No.: 22-002-KS

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE 3 OF 4

2010229

SOUTHERN DIVISION
176 Bentleyville Road
Voorhis, PA 15366
(724) 258-TEST
FAX: (724) 258-8376

X

NORTHERN DIVISION
435 Broad Street
Montoursville, PA 17754
(570) 321-9003
FAX: (570) 321-1957

PUSH!

NORTHWEST DIVISION
950 Main Street
Sharpsville, PA 16150
(724) 463-TEST
FAX: (724) 465-4209

Requested TAT:
Rush ASAP days ☒
Standard ☐

FOR INTERNAL LABORATORY USE ONLY

Sample Identification	ESL#	Sample Type: Composite Date on/off	Composite Time on/off	Grab Date	Grab Time	Matrix	# of Containers	Container Type / Preservative	Analysis Requested
SW-04	04			1/3/22	1725	W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS
SW-05	05			1/3/22	1745	W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

	Date/ Time		Date/ Time
Sampled By: (Signature)	1/3/22 1800		
Relinquished By: (Signature)	1/4/22 0900	Received By: (Signature)	1/4/22 0900
Relinquished By: (Signature)	1/4/22 0950	Received By: (Signature)	1/4/22 0950
Relinquished By: (Signature)	1/4/22 1037	Received By: (Signature)	1-4-22 1315
Relinquished By: (Signature)	1-4-22 1510	Received By: (Signature)	1/4/21 1500

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

Project Notes:

Thurman Spece Stream Sampling

Please direct bill SWN (Josh Boyda)

Company/Name:	**Moody & Associates (Washington, PA)**
Address:	1720 Washington Road, Suite 100
	Washington, PA 15301
Contact Person:	Katie Sasala
Phone Number:	724-749-4606
Email Address:	Ksasala@moody-s.com
State of Collection:	WV

Moody Project No.: 22-002-KS

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE 4 OF 4

2010229

SOUTHERN DIVISION
176 Bentleyville Road
n Voorhis, PA 15366
(4) 258-TEST
AX: (724) 258-8376

NORTHERN DIVISION
435 Broad Street
Montoursville, PA 17754
(570) 321-9003
FAX: (570) 321-1957

NORTHWEST DIVISION
950 Main Street
Sharpsville, PA 16150
(724) 463-TEST
FAX: (724) 465-4209

PUSH!!

Requested TAT:
Rush ASAP days [X]
Standard [ ]

FOR INTERNAL LABORATORY USE ONLY

Sample Identification	ESL# 2010227	Sample Type: Composite Date on/off	Composite Time on/off	Grab Date	Grab Time	Matrix	# of Containers	Container Type / Preservative	Analysis Requested
SW-06	06			1/3/22	1755	W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS
	6					W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

	Date/ Time		Date/ Time
Sampled By: (Signature)	1/3/22 1800		
Relinquished By: (Signature)	1/4/22 0900	Received By: (Signature)	1/4/22 0900
Relinquished By: (Signature)	1/4/22 0950	Received By: (Signature)	1/4/22 0950
Relinquished By: (Signature)	1/4/22 1637	Received By: (Signature)	1-4-22 1315
Relinquished By: (Signature)	1-4-22 1510	Received By: (Signature)	1/4/22 1800

Correct Preservations Y / N / NA Correct Containers Y / N / NA Receipt Temperature _____

Project Notes:

Thurman Spece Stream Sampling

Please direct bill SWN (Josh Boyda)

Company/Name:	**Moody & Associates (Washington, PA)**
Address:	1720 Washington Road, Suite 100
	Washington, PA 15301
Contact Person:	Katie Sasala
Phone Number:	724-749-4606
Email Address:	Ksasala@moody-s.com
State of Collection:	WV

Moody Project No.: 22-002-KS

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE RECEIPT AND RE[illegible]

2010229

Client: Moody	Work Order:

PART A: GENERAL INFORMATION- SATELLITE LABORATORY

Received by/Lab ID:	Date/Time Received: / /
Method of Delivery: Client Drop-Off ESL Courier Other: _____	Received on Ice? YES NO
Sample Receipt Temperature: _____ °C	IR Gun ID:
Containers Removed by Satellite Lab for Analysis of: FECAL TC/EC TC MPN EC MPN TC/EC MPN N/A	

PART B: GENERAL INFORMATION- INDIANA LABORATORY

Received by/Lab ID: SPM (00382)	Samples Received on Ice? (YES) NO
Date/Time Received: 1/4/22 1800	Date Sampled: 1/3/22
Method of Delivery: FedEx UPS Client Drop off (ESL courier) Other: _____	
Sample Receipt Temperature: 3.0 °C	IR Gun ID: 3
Sample State of Collection: (PA) NY OH WV Other: _____ SPM 1/4/21	PWSID Compliance Drinking Water Samples: YES (NO)

PART C: Receipt Details

Completed (if different from above): _____ / / _____
Signature Date Time

Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)
Chain of custody documents included with samples?	(YES) NO	Comments:
COC form is properly signed in relinquished/received sections?	YES NO	Comments:
Sample containers intact and sealed?	YES NO	Circle Applicable: Damaged Container Leaking Container Custody Seal Broken Other: _____
Number of containers received matches number indicated on COC?	YES NO	Sample IDs and Containers Affected:
Sample IDs on COC match IDs on bottles?	YES NO	Sample IDs and Containers Affected:
Date and time on COC match date and time on bottles?	YES NO	Sample IDs and Containers Affected:
Samples received within holding time?	YES NO	Sample IDs and Containers Affected:
Samples received at appropriate pH for analysis requested?	YES NO	Sample IDs and Containers Affected and Observed pH:
Samples requiring thermal preservation within 0 ≤ 6°C? Microbiology within 0 ≤ 10°C?	YES NO	For non-WV samples outside of thermal preservation range sampled same day and received on ice are considered acceptable as long as the cooling process has begun.
Adequate sample volume received?	YES NO	Analyses Affected:
VOA vials free of headspace (defined as < 6 mm bubble)?	YES (NO)	Sample IDs and Containers Affected:
Other Comments: SPM 1/4/22		**Deficiency Log Created:** YES (NO)

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

January 11, 2022

Mr Richard Rodriguez
Environmental Service Laboratories, Inc.
1803 Philadelphia Street
Indiana, PA 15701

RE: Project: 2010229
Pace Project No.: 30458214

Dear Mr Rodriguez:

Enclosed are the analytical results for sample(s) received by the laboratory on January 05, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Megan A Rager

Megan A. Rager
megan.rager@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Sierra Grguric, Environmental Service Laboratories, Inc.

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 2010229
Pace Project No.: 30458214

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: 2010229
Pace Project No.: 30458214

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30458214001	**2010229-01**	Water	01/03/22 16:40	01/05/22 16:45
30458214002	**2010229-02**	Water	01/03/22 16:45	01/05/22 16:45
30458214003	**2010229-03**	Water	01/03/22 17:00	01/05/22 16:45
30458214004	**2010229-04**	Water	01/03/22 17:25	01/05/22 16:45
30458214005	**2010229-05**	Water	01/03/22 17:45	01/05/22 16:45
30458214006	**2010229-06**	Water	01/03/22 17:55	01/05/22 16:45

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 2010229
Pace Project No.: 30458214

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30458214001	**2010229-01**	EPA 8270D by SIM	DSC	18	PASI-PA
30458214002	**2010229-02**	EPA 8270D by SIM	DSC	18	PASI-PA
30458214003	**2010229-03**	EPA 8270D by SIM	DSC	18	PASI-PA
30458214004	**2010229-04**	EPA 8270D by SIM	DSC	18	PASI-PA
30458214005	**2010229-05**	EPA 8270D by SIM	DSC	18	PASI-PA
30458214006	**2010229-06**	EPA 8270D by SIM	DSC	18	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 2010229
Pace Project No.: 30458214

Sample: 2010229-01 **Lab ID: 30458214001** Collected: 01/03/22 16:40 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Acenaphthene	**0.10 U**	ug/L	0.10	0.023	1	01/07/22 09:00	01/10/22 14:33	83-32-9	1c
Acenaphthylene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 14:33	208-96-8	1c
Anthracene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 14:33	120-12-7	1c
Benzo(a)anthracene	**0.10 U**	ug/L	0.10	0.081	1	01/07/22 09:00	01/10/22 14:33	56-55-3	1c
Benzo(a)pyrene	**0.10 U**	ug/L	0.10	0.026	1	01/07/22 09:00	01/10/22 14:33	50-32-8	1c
Benzo(b)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 14:33	205-99-2	1c
Benzo(g,h,i)perylene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 14:33	191-24-2	1c
Benzo(k)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 14:33	207-08-9	1c
Chrysene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 14:33	218-01-9	1c
Dibenz(a,h)anthracene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 14:33	53-70-3	1c
Fluoranthene	**0.10 U**	ug/L	0.10	0.020	1	01/07/22 09:00	01/10/22 14:33	206-44-0	1c
Fluorene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 14:33	86-73-7	1c
Indeno(1,2,3-cd)pyrene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 14:33	193-39-5	1c
Naphthalene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 14:33	91-20-3	1c
Phenanthrene	**0.10 U**	ug/L	0.10	0.027	1	01/07/22 09:00	01/10/22 14:33	85-01-8	1c
Pyrene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 14:33	129-00-0	1c,L1
Surrogates									
2-Fluorobiphenyl (S)	82	%.	19-92		1	01/07/22 09:00	01/10/22 14:33	321-60-8	
Terphenyl-d14 (S)	176	%.	55-109		1	01/07/22 09:00	01/10/22 14:33	1718-51-0	ST

Sample: 2010229-02 **Lab ID: 30458214002** Collected: 01/03/22 16:45 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Acenaphthene	**0.10 U**	ug/L	0.10	0.023	1	01/07/22 09:00	01/10/22 14:50	83-32-9	1c
Acenaphthylene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 14:50	208-96-8	1c
Anthracene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 14:50	120-12-7	1c
Benzo(a)anthracene	**0.10 U**	ug/L	0.10	0.081	1	01/07/22 09:00	01/10/22 14:50	56-55-3	1c
Benzo(a)pyrene	**0.10 U**	ug/L	0.10	0.026	1	01/07/22 09:00	01/10/22 14:50	50-32-8	1c
Benzo(b)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 14:50	205-99-2	1c
Benzo(g,h,i)perylene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 14:50	191-24-2	1c
Benzo(k)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 14:50	207-08-9	1c
Chrysene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 14:50	218-01-9	1c
Dibenz(a,h)anthracene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 14:50	53-70-3	1c
Fluoranthene	**0.10 U**	ug/L	0.10	0.020	1	01/07/22 09:00	01/10/22 14:50	206-44-0	1c
Fluorene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 14:50	86-73-7	1c
Indeno(1,2,3-cd)pyrene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 14:50	193-39-5	1c
Naphthalene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 14:50	91-20-3	1c
Phenanthrene	**0.10 U**	ug/L	0.10	0.027	1	01/07/22 09:00	01/10/22 14:50	85-01-8	1c
Pyrene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 14:50	129-00-0	1c,L1
Surrogates									
2-Fluorobiphenyl (S)	79	%.	19-92		1	01/07/22 09:00	01/10/22 14:50	321-60-8	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 2010229
Pace Project No.: 30458214

Sample: 2010229-02 **Lab ID: 30458214002** Collected: 01/03/22 16:45 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Surrogates									
Terphenyl-d14 (S)	162	%.	55-109		1	01/07/22 09:00	01/10/22 14:50	1718-51-0	ST

Sample: 2010229-03 **Lab ID: 30458214003** Collected: 01/03/22 17:00 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Acenaphthene	**0.10 U**	ug/L	0.10	0.023	1	01/07/22 09:00	01/10/22 15:07	83-32-9	1c
Acenaphthylene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:07	208-96-8	1c
Anthracene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:07	120-12-7	1c
Benzo(a)anthracene	**0.10 U**	ug/L	0.10	0.081	1	01/07/22 09:00	01/10/22 15:07	56-55-3	1c
Benzo(a)pyrene	**0.10 U**	ug/L	0.10	0.026	1	01/07/22 09:00	01/10/22 15:07	50-32-8	1c
Benzo(b)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:07	205-99-2	1c
Benzo(g,h,i)perylene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:07	191-24-2	1c
Benzo(k)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:07	207-08-9	1c
Chrysene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:07	218-01-9	1c
Dibenz(a,h)anthracene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:07	53-70-3	1c
Fluoranthene	**0.10 U**	ug/L	0.10	0.020	1	01/07/22 09:00	01/10/22 15:07	206-44-0	1c
Fluorene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:07	86-73-7	1c
Indeno(1,2,3-cd)pyrene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:07	193-39-5	1c
Naphthalene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:07	91-20-3	1c
Phenanthrene	**0.10 U**	ug/L	0.10	0.027	1	01/07/22 09:00	01/10/22 15:07	85-01-8	1c
Pyrene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:07	129-00-0	1c,L1
Surrogates									
2-Fluorobiphenyl (S)	76	%.	19-92		1	01/07/22 09:00	01/10/22 15:07	321-60-8	
Terphenyl-d14 (S)	162	%.	55-109		1	01/07/22 09:00	01/10/22 15:07	1718-51-0	ST

Sample: 2010229-04 **Lab ID: 30458214004** Collected: 01/03/22 17:25 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Acenaphthene	**0.10 U**	ug/L	0.10	0.023	1	01/07/22 09:00	01/10/22 15:23	83-32-9	1c
Acenaphthylene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:23	208-96-8	1c
Anthracene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:23	120-12-7	1c
Benzo(a)anthracene	**0.10 U**	ug/L	0.10	0.081	1	01/07/22 09:00	01/10/22 15:23	56-55-3	1c
Benzo(a)pyrene	**0.10 U**	ug/L	0.10	0.026	1	01/07/22 09:00	01/10/22 15:23	50-32-8	1c
Benzo(b)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:23	205-99-2	1c
Benzo(g,h,i)perylene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:23	191-24-2	1c

REPORT OF LABORATORY ANALYSIS

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(724)850-5600

ANALYTICAL RESULTS

Project: 2010229
Pace Project No.: 30458214

Sample: 2010229-04 **Lab ID: 30458214004** Collected: 01/03/22 17:25 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Benzo(k)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:23	207-08-9	1c
Chrysene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:23	218-01-9	1c
Dibenz(a,h)anthracene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:23	53-70-3	1c
Fluoranthene	**0.10 U**	ug/L	0.10	0.020	1	01/07/22 09:00	01/10/22 15:23	206-44-0	1c
Fluorene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:23	86-73-7	1c
Indeno(1,2,3-cd)pyrene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:23	193-39-5	1c
Naphthalene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:23	91-20-3	1c
Phenanthrene	**0.10 U**	ug/L	0.10	0.027	1	01/07/22 09:00	01/10/22 15:23	85-01-8	1c
Pyrene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:23	129-00-0	1c,L1
Surrogates									
2-Fluorobiphenyl (S)	74	%.	19-92		1	01/07/22 09:00	01/10/22 15:23	321-60-8	
Terphenyl-d14 (S)	168	%.	55-109		1	01/07/22 09:00	01/10/22 15:23	1718-51-0	ST

Sample: 2010229-05 **Lab ID: 30458214005** Collected: 01/03/22 17:45 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Acenaphthene	**0.10 U**	ug/L	0.10	0.023	1	01/07/22 09:00	01/10/22 15:40	83-32-9	1c
Acenaphthylene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:40	208-96-8	1c
Anthracene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:40	120-12-7	1c,IS
Benzo(a)anthracene	**0.10 U**	ug/L	0.10	0.081	1	01/07/22 09:00	01/10/22 15:40	56-55-3	1c
Benzo(a)pyrene	**0.10 U**	ug/L	0.10	0.026	1	01/07/22 09:00	01/10/22 15:40	50-32-8	1c
Benzo(b)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:40	205-99-2	1c
Benzo(g,h,i)perylene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:40	191-24-2	1c
Benzo(k)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:40	207-08-9	1c
Chrysene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:40	218-01-9	1c
Dibenz(a,h)anthracene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:40	53-70-3	1c
Fluoranthene	**0.10 U**	ug/L	0.10	0.020	1	01/07/22 09:00	01/10/22 15:40	206-44-0	1c,IS
Fluorene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:40	86-73-7	1c
Indeno(1,2,3-cd)pyrene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:40	193-39-5	1c
Naphthalene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:40	91-20-3	1c
Phenanthrene	**0.10 U**	ug/L	0.10	0.027	1	01/07/22 09:00	01/10/22 15:40	85-01-8	1c,IS
Pyrene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:40	129-00-0	1c,IS,L1
Surrogates									
2-Fluorobiphenyl (S)	78	%.	19-92		1	01/07/22 09:00	01/10/22 15:40	321-60-8	
Terphenyl-d14 (S)	242	%.	55-109		1	01/07/22 09:00	01/10/22 15:40	1718-51-0	IS,ST

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2010229
Pace Project No.: 30458214

Sample: 2010229-06 **Lab ID: 30458214006** Collected: 01/03/22 17:55 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Acenaphthene	**0.10 U**	ug/L	0.10	0.023	1	01/07/22 09:00	01/10/22 15:56	83-32-9	1c
Acenaphthylene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:56	208-96-8	1c
Anthracene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:56	120-12-7	1c
Benzo(a)anthracene	**0.10 U**	ug/L	0.10	0.081	1	01/07/22 09:00	01/10/22 15:56	56-55-3	1c
Benzo(a)pyrene	**0.10 U**	ug/L	0.10	0.026	1	01/07/22 09:00	01/10/22 15:56	50-32-8	1c
Benzo(b)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:56	205-99-2	1c
Benzo(g,h,i)perylene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:56	191-24-2	1c
Benzo(k)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:56	207-08-9	1c
Chrysene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:56	218-01-9	1c
Dibenz(a,h)anthracene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:56	53-70-3	1c
Fluoranthene	**0.10 U**	ug/L	0.10	0.020	1	01/07/22 09:00	01/10/22 15:56	206-44-0	1c
Fluorene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:56	86-73-7	1c
Indeno(1,2,3-cd)pyrene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:56	193-39-5	1c
Naphthalene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:56	91-20-3	1c
Phenanthrene	**0.10 U**	ug/L	0.10	0.027	1	01/07/22 09:00	01/10/22 15:56	85-01-8	1c
Pyrene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:56	129-00-0	1c,L1
Surrogates									
2-Fluorobiphenyl (S)	77	%.	19-92		1	01/07/22 09:00	01/10/22 15:56	321-60-8	
Terphenyl-d14 (S)	181	%.	55-109		1	01/07/22 09:00	01/10/22 15:56	1718-51-0	ST

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QUALITY CONTROL DATA

Project: 2010229
Pace Project No.: 30458214

QC Batch: 478788
QC Batch Method: EPA 3510C
Analysis Method: EPA 8270D by SIM
Analysis Description: 8270D PAH by SIM RV MSSV
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30458214001, 30458214002, 30458214003, 30458214004, 30458214005, 30458214006

METHOD BLANK: 2313418 Matrix: Water
Associated Lab Samples: 30458214001, 30458214002, 30458214003, 30458214004, 30458214005, 30458214006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Acenaphthene	ug/L	0.10 U	0.10	0.023	01/10/22 12:54	
Acenaphthylene	ug/L	0.10 U	0.10	0.021	01/10/22 12:54	
Anthracene	ug/L	0.10 U	0.10	0.022	01/10/22 12:54	
Benzo(a)anthracene	ug/L	0.10 U	0.10	0.081	01/10/22 12:54	
Benzo(a)pyrene	ug/L	0.10 U	0.10	0.026	01/10/22 12:54	
Benzo(b)fluoranthene	ug/L	0.10 U	0.10	0.042	01/10/22 12:54	
Benzo(g,h,i)perylene	ug/L	0.10 U	0.10	0.031	01/10/22 12:54	
Benzo(k)fluoranthene	ug/L	0.10 U	0.10	0.042	01/10/22 12:54	
Chrysene	ug/L	0.10 U	0.10	0.033	01/10/22 12:54	
Dibenz(a,h)anthracene	ug/L	0.10 U	0.10	0.031	01/10/22 12:54	
Fluoranthene	ug/L	0.10 U	0.10	0.020	01/10/22 12:54	
Fluorene	ug/L	0.10 U	0.10	0.022	01/10/22 12:54	
Indeno(1,2,3-cd)pyrene	ug/L	0.10 U	0.10	0.033	01/10/22 12:54	
Naphthalene	ug/L	0.10 U	0.10	0.042	01/10/22 12:54	
Phenanthrene	ug/L	0.10 U	0.10	0.027	01/10/22 12:54	
Pyrene	ug/L	0.10 U	0.10	0.021	01/10/22 12:54	
2-Fluorobiphenyl (S)	%.	80	19-92		01/10/22 12:54	
Terphenyl-d14 (S)	%.	102	55-109		01/10/22 12:54	

LABORATORY CONTROL SAMPLE: 2313419

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/L	2	1.8	88	29-110	
Acenaphthylene	ug/L	2	1.9	93	28-121	
Anthracene	ug/L	2	2.2	110	40-115	
Benzo(a)anthracene	ug/L	2	2.2	109	63-119	
Benzo(a)pyrene	ug/L	2	1.8	90	56-121	
Benzo(b)fluoranthene	ug/L	2	2.1	106	61-126	
Benzo(g,h,i)perylene	ug/L	2	1.9	95	53-123	
Benzo(k)fluoranthene	ug/L	2	2.1	103	57-121	
Chrysene	ug/L	2	2.0	98	62-109	
Dibenz(a,h)anthracene	ug/L	2	2.0	102	55-125	
Fluoranthene	ug/L	2	2.4	121	55-121	
Fluorene	ug/L	2	1.8	91	30-119	
Indeno(1,2,3-cd)pyrene	ug/L	2	2.1	107	56-124	
Naphthalene	ug/L	2	1.7	83	26-104	
Phenanthrene	ug/L	2	2.1	107	38-112	
Pyrene	ug/L	2	2.4	122	56-119	L1
2-Fluorobiphenyl (S)	%.			74	19-92	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 2010229
Pace Project No.: 30458214

LABORATORY CONTROL SAMPLE: 2313419

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Terphenyl-d14 (S)	%.			110	55-109	ST

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 2010229
Pace Project No.: 30458214

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 478788

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1c	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
IS	The internal standard response is below criteria. Results may be biased high.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
ST	Surrogate recovery was above laboratory control limits. Results may be biased high.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2010229
Pace Project No.: 30458214

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30458214001	**2010229-01**	EPA 3510C	478788	EPA 8270D by SIM	478870
30458214002	**2010229-02**	EPA 3510C	478788	EPA 8270D by SIM	478870
30458214003	**2010229-03**	EPA 3510C	478788	EPA 8270D by SIM	478870
30458214004	**2010229-04**	EPA 3510C	478788	EPA 8270D by SIM	478870
30458214005	**2010229-05**	EPA 3510C	478788	EPA 8270D by SIM	478870
30458214006	**2010229-06**	EPA 3510C	478788	EPA 8270D by SIM	478870

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CONTRACT ORDER

al Service Laboratories, Inc.

2010229

eports@envlabs.com. Contact ESL with any questions.

SENDING LABORATORY:

Environmental Service Laboratories, Inc.
1803 Philadelphia Street
Indiana, PA 15701
Phone: 724-463-8378
Fax: 724-465-4209
Project Manager: Lucas Winner

RECEIVING LABORATORY:

Pace Analytical Services, LLC.
1638 Roseytown Road - Suites 2, 3, 4
Greensburg, PA 15601
Phone :(724) 850-5600
Fax: (724) 850-5601

State of Origin: PA

Analysis	Due	Expires	Comments
Sample ID: 2010229-01			
Matrix: Water **Sampled: 01/03/2022 16:40** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	01/11/2022 23:00	02/02/2022 16:40	WV
Containers Supplied:			
Amber Glass, 250mL (E) Amber Glass, 250mL (F) Amber Glass, 250mL (G) Amber Glass, 250mL (H)			
Sample ID: 2010229-02			
Matrix: Water **Sampled: 01/03/2022 16:45** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	01/11/2022 23:00	02/02/2022 16:45	WV
Containers Supplied:			
Amber Glass, 250mL (E) Amber Glass, 250mL (F) Amber Glass, 250mL (G) Amber Glass, 250mL (H)			
Sample ID: 2010229-03			
Matrix: Water **Sampled: 01/03/2022 17:00** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	01/11/2022 23:00	02/02/2022 17:00	WV
Containers Supplied:			
Amber Glass, 1000mL (E)			
Sample ID: 2010229-04			
Matrix: Water **Sampled: 01/03/2022 17:25** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	01/11/2022 23:00	02/02/2022 17:25	WV
Containers Supplied:			
Amber Glass, 1000mL (E)			
Sample ID: 2010229-05			
Matrix: Water **Sampled: 01/03/2022 17:45** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	01/11/2022 23:00	02/02/2022 17:45	WV
Containers Supplied:			
Amber Glass, 1000mL (E)			
Sample ID: 2010229-06			
Matrix: Water **Sampled: 01/03/2022 17:55** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	01/11/2022 23:00	02/02/2022 17:55	WV
Containers Supplied:			
Amber Glass, 1000mL (E)			

SPM	1/5/22	Bill Graham	1/5/22 1210
Released By	Date	Received By	Date
Bill Graham	1/5/22 1645		1-5-22 1645
Released By	Date	Received By	Date

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: ESL Project #

WO# : 30458214

PM: MAR Due Date: 01/10/22

CLIENT: ESL

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other

Label

Tracking #: —

LIMS Login

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Thermometer Used 14 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 2.3 °C Correction Factor: 0 °C Final Temp: 2.3 °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot# (CD)841	Date and Initials of person examining contents: PL 1-6-22
Chain of Custody Present:	–			1.	
Chain of Custody Filled Out:	–			2.	
Chain of Custody Relinquished:	–			3.	
Sampler Name & Signature on COC:		–		4.	
Sample Labels match COC: -Includes date/time/ID Matrix: WA	–			5.	
Samples Arrived within Hold Time:	–			6.	
Short Hold Time Analysis (<72hr remaining):		–		7.	
Rush Turn Around Time Requested:		–		8.	
Sufficient Volume:	–			9.	
Correct Containers Used: -Pace Containers Used:	–	–		10.	
Containers Intact:	–			11.	
Orthophosphate field filtered			–	12.	
Hex Cr Aqueous sample field filtered			–	13.	
Organic Samples checked for dechlorination:	–			14.	
Filtered volume received for Dissolved tests			–	15.	
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	–			16.	
All containers meet method preservation requirements.	–			Initial when completed: PL	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			–	17.	
Trip Blank Present:			–	18.	
Trip Blank Custody Seals Present			–		
Rad Samples Screened < 0.5 mrem/hr			–	Initial when completed: PL	Date: Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Pace Analytical®

Pace Greensburg Lab -Sample Container Count

Client _____ Profile Number 8266

Site 201029 Notes _____

Sample Line Item	Matrix	AG1H	AG1S	AG1T	AG2U	AG3S	AG3U	AG5U	AG5T	BG1U	BG2U	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	GCUB	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC	AG4U
1	WT				4																								
2					4																								
3																													1
4																													1
5																													1
6	↓																												1
7																													
8																													
9																													
10																													
11																													
12																													

Container Codes

Glass

GJN	1 Gallon Jug with HNO3	DG9S	40mL amber VOA vial H2SO4
AG5U	100mL amber glass unprserved	VG9U	40mL clear VOA vial
AG5T	100mL amber glass Na Thiosulfate	VG9T	40mL clear VOA vial Na Thiosul
GJN	1 Gallon Jug	VG9H	40mL clear VOA vial HCl
AG1S	1L amber glass H2SO4	JGFU	4oz amber wide jar
AG1H	1L amber glass HCl	WGFU	4oz wide jar unpreserved
AG1T	1L amber glass Na Thiosulfate	BG2U	500mL clear glass unpreserved
BG1U	1L clear glass unpreserved	AG2U	500mL amber glass unpreserve
AG3S	250mL amber glass H2SO4	WGKU	8oz wide jar unpreserved
AG3U	250mL amber glass unpreserved		

Plastic / Misc.

GCUB	1 Gallon Cubitainer
12GN	1/2 Gallon Cubitainer
SP5T	120mL Coliform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250ml plastic NAOH
BP2S	500mL plastic H2SO4
2U	500mL plastic unpreserved

EZI	5g Encore
VOAK	Kit for Volatile Solid
I	Wipe/Swab
ZPLC	Ziploc Bag

WT	Water
SL	Solid
OL	Non-aqueous liquid
WP	Wipe

WO#: 30458214

PM: MAR Due Date: 01/10/22

CLIENT: ESL

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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21 February 2022

Moody & Associates, Inc. (Washington Office)
Attn: Katie Sasala
1720 Washington Road
Washington, PA 15301

Work Order: 2012410
Project: 22-004-KS Speece Sampling

Report of Analysis

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received	Sample Notes
SO-201	2012410-01	Solid	01/28/2022 17:05	1/31/22 15:40	
SO-201 TCLP	2012410-02	Solid	01/28/2022 17:05	1/31/22 15:40	
SO-206	2012410-03	Solid	01/28/2022 17:05	1/31/22 15:40	
SO-206 TCLP	2012410-04	Solid	01/28/2022 17:05	1/31/22 15:40	
SO-208	2012410-05	Solid	01/28/2022 17:15	1/31/22 15:40	
SO-208 TCLP	2012410-06	Solid	01/28/2022 17:15	1/31/22 15:40	
SO-210	2012410-07	Solid	01/28/2022 17:40	1/31/22 15:40	
SO-210 TCLP	2012410-08	Solid	01/28/2022 17:40	1/31/22 15:40	
SO-211	2012410-09	Solid	01/28/2022 17:15	1/31/22 15:40	
SO-211 TCLP	2012410-10	Solid	01/28/2022 17:15	1/31/22 15:40	
SO-212	2012410-11	Solid	01/28/2022 17:17	1/31/22 15:40	
SO-212 TCLP	2012410-12	Solid	01/28/2022 17:17	1/31/22 15:40	
SO-216	2012410-13	Solid	01/28/2022 17:25	1/31/22 15:40	
SO-216 TCLP	2012410-14	Solid	01/28/2022 17:25	1/31/22 15:40	
SO-217	2012410-15	Solid	01/28/2022 17:35	1/31/22 15:40	
SO-217 TCLP	2012410-16	Solid	01/28/2022 17:35	1/31/22 15:40	
SO-218	2012410-17	Solid	01/28/2022 17:30	1/31/22 15:40	
SO-218 TCLP	2012410-18	Solid	01/28/2022 17:30	1/31/22 15:40	
SO-228	2012410-19	Solid	01/28/2022 17:25	1/31/22 15:40	
SO-228 TCLP	2012410-20	Solid	01/28/2022 17:25	1/31/22 15:40	

Report Narrative

The results contained in this report are only representative of the samples received. Environmental Service Laboratories, Inc. is not responsible for use or interpretation of the data included herein.

Definitions

DM Dilution required due to Matrix interference.
RL Reporting Limit

Certifications

Analyses performed by Environmental Service Laboratories, Inc., Indiana PA unless otherwise specified.

Environmental Service Laboratories, Inc., Indiana, PA/TNI Certification #32-00382

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Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/21/2022 16:12

Approved By

Alicia N Johnston

Alicia Johnston
Project Manager

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1720 Washington Road
Washington, PA 15301

Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-01
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-201

Sample Date: 01/28/2022 17:05
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	51.0	mg/kg dry		11.9	TLL	02/17/22 20:55	02/17/22 20:55
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	80.2	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<200	ug/kg dry		200	MJK	02/03/22 15:41	02/03/22 15:41
Toluene	<200	ug/kg dry		200	MJK	02/03/22 15:41	02/03/22 15:41
Ethyl Benzene	<200	ug/kg dry		200	MJK	02/03/22 15:41	02/03/22 15:41
m,p-Xylenes	<400	ug/kg dry		400	MJK	02/03/22 15:41	02/03/22 15:41
o-Xylene	<200	ug/kg dry		200	MJK	02/03/22 15:41	02/03/22 15:41
Total Xylenes	<200	ug/kg dry		200	MJK	02/03/22 15:41	02/03/22 15:41
Surrogate: 1,2-Dichloroethane-d4	*85 %*		*80-120*		*MJK*	*02/03/22 15:41*	*02/03/22 15:41*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/03/22 15:41*	*02/03/22 15:41*
Surrogate: 4-Bromofluorobenzene	*107 %*		*86-115*		*MJK*	*02/03/22 15:41*	*02/03/22 15:41*

Lab Sample ID#: 2012410-02
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-201 TCLP

Sample Date: 01/28/2022 17:05
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	0.417	mg/L		2.00	TLL	02/10/22 01:11	02/10/22 01:11

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Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-03
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-206

Sample Date: 01/28/2022 17:05
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	39.0	mg/kg dry		11.6	TLL	02/17/22 21:13	02/17/22 21:13
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	83.4	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<189	ug/kg dry		189	MJK	02/03/22 16:06	02/03/22 16:06
Toluene	<189	ug/kg dry		189	MJK	02/03/22 16:06	02/03/22 16:06
Ethyl Benzene	<189	ug/kg dry		189	MJK	02/03/22 16:06	02/03/22 16:06
m,p-Xylenes	<378	ug/kg dry		378	MJK	02/03/22 16:06	02/03/22 16:06
o-Xylene	<189	ug/kg dry		189	MJK	02/03/22 16:06	02/03/22 16:06
Total Xylenes	<189	ug/kg dry		189	MJK	02/03/22 16:06	02/03/22 16:06
Surrogate: 1,2-Dichloroethane-d4	*86 %*		*80-120*		*MJK*	*02/03/22 16:06*	*02/03/22 16:06*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/03/22 16:06*	*02/03/22 16:06*
Surrogate: 4-Bromofluorobenzene	*107 %*		*86-115*		*MJK*	*02/03/22 16:06*	*02/03/22 16:06*

Lab Sample ID#: 2012410-04
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-206 TCLP

Sample Date: 01/28/2022 17:05
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.29	mg/L	DM	4.00	TLL	02/10/22 01:30	02/10/22 01:30

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Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-05
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-208

Sample Date: 01/28/2022 17:15
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	111	mg/kg dry		13.8	TLL	02/17/22 21:31	02/17/22 21:31
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	70.2	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<244	ug/kg dry		244	MJK	02/03/22 16:32	02/03/22 16:32
Toluene	<244	ug/kg dry		244	MJK	02/03/22 16:32	02/03/22 16:32
Ethyl Benzene	<244	ug/kg dry		244	MJK	02/03/22 16:32	02/03/22 16:32
m,p-Xylenes	<489	ug/kg dry		489	MJK	02/03/22 16:32	02/03/22 16:32
o-Xylene	<244	ug/kg dry		244	MJK	02/03/22 16:32	02/03/22 16:32
Total Xylenes	<244	ug/kg dry		244	MJK	02/03/22 16:32	02/03/22 16:32
Surrogate: 1,2-Dichloroethane-d4	*84 %*		*80-120*		*MJK*	*02/03/22 16:32*	*02/03/22 16:32*
Surrogate: Toluene-d8	*98 %*		*88-110*		*MJK*	*02/03/22 16:32*	*02/03/22 16:32*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/03/22 16:32*	*02/03/22 16:32*

Lab Sample ID#: 2012410-06
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-208 TCLP

Sample Date: 01/28/2022 17:15
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.76	mg/L		2.00	TLL	02/10/22 01:49	02/10/22 01:49

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Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-07
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-210

Sample Date: 01/28/2022 17:40
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	193	mg/kg dry		14.2	TLL	02/17/22 21:49	02/17/22 21:49
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	68.9	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<276	ug/kg dry		276	MJK	02/03/22 16:57	02/03/22 16:57
Toluene	<276	ug/kg dry		276	MJK	02/03/22 16:57	02/03/22 16:57
Ethyl Benzene	<276	ug/kg dry		276	MJK	02/03/22 16:57	02/03/22 16:57
m,p-Xylenes	<553	ug/kg dry		553	MJK	02/03/22 16:57	02/03/22 16:57
o-Xylene	<276	ug/kg dry		276	MJK	02/03/22 16:57	02/03/22 16:57
Total Xylenes	<276	ug/kg dry		276	MJK	02/03/22 16:57	02/03/22 16:57
Surrogate: 1,2-Dichloroethane-d4	*82 %*		*80-120*		*MJK*	*02/03/22 16:57*	*02/03/22 16:57*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/03/22 16:57*	*02/03/22 16:57*
Surrogate: 4-Bromofluorobenzene	*108 %*		*86-115*		*MJK*	*02/03/22 16:57*	*02/03/22 16:57*

Lab Sample ID#: 2012410-08
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-210 TCLP

Sample Date: 01/28/2022 17:40
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	3.26	mg/L		2.00	TLL	02/10/22 02:08	02/10/22 02:08

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Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-09
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-211

Sample Date: 01/28/2022 17:15
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	93.0	mg/kg dry		14.2	TLL	02/17/22 22:07	02/17/22 22:07
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	66.9	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<297	ug/kg dry		297	MJK	02/03/22 17:23	02/03/22 17:23
Toluene	<297	ug/kg dry		297	MJK	02/03/22 17:23	02/03/22 17:23
Ethyl Benzene	<297	ug/kg dry		297	MJK	02/03/22 17:23	02/03/22 17:23
m,p-Xylenes	<594	ug/kg dry		594	MJK	02/03/22 17:23	02/03/22 17:23
o-Xylene	<297	ug/kg dry		297	MJK	02/03/22 17:23	02/03/22 17:23
Total Xylenes	<297	ug/kg dry		297	MJK	02/03/22 17:23	02/03/22 17:23
Surrogate: 1,2-Dichloroethane-d4	*85 %*		*80-120*		*MJK*	*02/03/22 17:23*	*02/03/22 17:23*
Surrogate: Toluene-d8	*99 %*		*88-110*		*MJK*	*02/03/22 17:23*	*02/03/22 17:23*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/03/22 17:23*	*02/03/22 17:23*

Lab Sample ID#: 2012410-10
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-211 TCLP

Sample Date: 01/28/2022 17:15
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.29	mg/L	DM	4.00	TLL	02/10/22 02:27	02/10/22 02:27

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Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-11
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-212

Sample Date: 01/28/2022 17:17
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	167	mg/kg dry		13.3	TLL	02/17/22 23:01	02/17/22 23:01
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	74.8	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<222	ug/kg dry		222	MJK	02/03/22 17:48	02/03/22 17:48
Toluene	<222	ug/kg dry		222	MJK	02/03/22 17:48	02/03/22 17:48
Ethyl Benzene	<222	ug/kg dry		222	MJK	02/03/22 17:48	02/03/22 17:48
m,p-Xylenes	<443	ug/kg dry		443	MJK	02/03/22 17:48	02/03/22 17:48
o-Xylene	<222	ug/kg dry		222	MJK	02/03/22 17:48	02/03/22 17:48
Total Xylenes	<222	ug/kg dry		222	MJK	02/03/22 17:48	02/03/22 17:48
Surrogate: 1,2-Dichloroethane-d4	*84 %*		*80-120*		*MJK*	*02/03/22 17:48*	*02/03/22 17:48*
Surrogate: Toluene-d8	*100 %*		*88-110*		*MJK*	*02/03/22 17:48*	*02/03/22 17:48*
Surrogate: 4-Bromofluorobenzene	*109 %*		*86-115*		*MJK*	*02/03/22 17:48*	*02/03/22 17:48*

Lab Sample ID#: 2012410-12
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-212 TCLP

Sample Date: 01/28/2022 17:17
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.03	mg/L	DM	4.00	TLL	02/10/22 03:24	02/10/22 03:24

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
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Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-13
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-216

Sample Date: 01/28/2022 17:25
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	19.3	mg/kg dry		13.4	TLL	02/17/22 23:19	02/17/22 23:19
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	74.5	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<316	ug/kg dry		316	MJK	02/03/22 18:13	02/03/22 18:13
Toluene	<316	ug/kg dry		316	MJK	02/03/22 18:13	02/03/22 18:13
Ethyl Benzene	<316	ug/kg dry		316	MJK	02/03/22 18:13	02/03/22 18:13
m,p-Xylenes	<632	ug/kg dry		632	MJK	02/03/22 18:13	02/03/22 18:13
o-Xylene	<316	ug/kg dry		316	MJK	02/03/22 18:13	02/03/22 18:13
Total Xylenes	<316	ug/kg dry		316	MJK	02/03/22 18:13	02/03/22 18:13
Surrogate: 1,2-Dichloroethane-d4	*85 %*		*80-120*		*MJK*	*02/03/22 18:13*	*02/03/22 18:13*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/03/22 18:13*	*02/03/22 18:13*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/03/22 18:13*	*02/03/22 18:13*

Lab Sample ID#: 2012410-14
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-216 TCLP

Sample Date: 01/28/2022 17:25
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.26	mg/L	DM	4.00	TLL	02/10/22 03:43	02/10/22 03:43

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Washington, PA 15301

Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-15
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-217

Sample Date: 01/28/2022 17:35
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	511	mg/kg dry		13.5	TLL	02/17/22 23:37	02/17/22 23:37
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	70.5	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<271	ug/kg dry		271	MJK	02/03/22 18:38	02/03/22 18:38
Toluene	<271	ug/kg dry		271	MJK	02/03/22 18:38	02/03/22 18:38
Ethyl Benzene	<271	ug/kg dry		271	MJK	02/03/22 18:38	02/03/22 18:38
m,p-Xylenes	<542	ug/kg dry		542	MJK	02/03/22 18:38	02/03/22 18:38
o-Xylene	<271	ug/kg dry		271	MJK	02/03/22 18:38	02/03/22 18:38
Total Xylenes	<271	ug/kg dry		271	MJK	02/03/22 18:38	02/03/22 18:38
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/03/22 18:38*	*02/03/22 18:38*
Surrogate: Toluene-d8	*98 %*		*88-110*		*MJK*	*02/03/22 18:38*	*02/03/22 18:38*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/03/22 18:38*	*02/03/22 18:38*

Lab Sample ID#: 2012410-16
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-217 TCLP

Sample Date: 01/28/2022 17:35
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	0.846	mg/L	DM	4.00	TLL	02/10/22 04:02	02/10/22 04:02

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PADEP: 41-04880

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Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-17
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-218

Sample Date: 01/28/2022 17:30
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	104	mg/kg dry		12.9	TLL	02/17/22 23:55	02/17/22 23:55
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	75.2	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<288	ug/kg dry		288	MJK	02/03/22 19:04	02/03/22 19:04
Toluene	<288	ug/kg dry		288	MJK	02/03/22 19:04	02/03/22 19:04
Ethyl Benzene	<288	ug/kg dry		288	MJK	02/03/22 19:04	02/03/22 19:04
m,p-Xylenes	<577	ug/kg dry		577	MJK	02/03/22 19:04	02/03/22 19:04
o-Xylene	<288	ug/kg dry		288	MJK	02/03/22 19:04	02/03/22 19:04
Total Xylenes	<288	ug/kg dry		288	MJK	02/03/22 19:04	02/03/22 19:04
Surrogate: 1,2-Dichloroethane-d4	*84 %*		*80-120*		*MJK*	*02/03/22 19:04*	*02/03/22 19:04*
Surrogate: Toluene-d8	*98 %*		*88-110*		*MJK*	*02/03/22 19:04*	*02/03/22 19:04*
Surrogate: 4-Bromofluorobenzene	*108 %*		*86-115*		*MJK*	*02/03/22 19:04*	*02/03/22 19:04*

Lab Sample ID#: 2012410-18
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-218 TCLP

Sample Date: 01/28/2022 17:30
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	0.942	mg/L	DM	4.00	TLL	02/10/22 04:21	02/10/22 04:21

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PADEP: 63-04247

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F: (570) 321-1957
PADEP: 41-04880

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F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-19
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-228

Sample Date: 01/28/2022 17:25
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	51.5	mg/kg dry		14.3	TLL	02/18/22 00:13	02/18/22 00:13
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	68.5	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<263	ug/kg dry		263	MJK	02/03/22 19:29	02/03/22 19:29
Toluene	<263	ug/kg dry		263	MJK	02/03/22 19:29	02/03/22 19:29
Ethyl Benzene	<263	ug/kg dry		263	MJK	02/03/22 19:29	02/03/22 19:29
m,p-Xylenes	<527	ug/kg dry		527	MJK	02/03/22 19:29	02/03/22 19:29
o-Xylene	<263	ug/kg dry		263	MJK	02/03/22 19:29	02/03/22 19:29
Total Xylenes	<263	ug/kg dry		263	MJK	02/03/22 19:29	02/03/22 19:29
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/03/22 19:29*	*02/03/22 19:29*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/03/22 19:29*	*02/03/22 19:29*
Surrogate: 4-Bromofluorobenzene	*107 %*		*86-115*		*MJK*	*02/03/22 19:29*	*02/03/22 19:29*

Lab Sample ID#: 2012410-20
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-228 TCLP

Sample Date: 01/28/2022 17:25
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	0.984	mg/L	DM	4.00	TLL	02/10/22 04:40	02/10/22 04:40

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Indiana, PA 15701
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F: 724-465-4209

1276 Bentleyville Rd.
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F: 724-258-8376

2012410

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE ___1___ OF __3___

Chain of Custody

(Updated July 2016)

Sample Identification	2012410 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
SO-201	01/02	1/28/2022	1705	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-206	05/04	1/28/2022	1705	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-208	05/06	1/28/2022	1715	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-210	07/08	1/28/2022	1740	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	**Matrix:**	**Container Type:**	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD

1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Sampled By: (Signature) Jona M Stoskey /Moody	Date/Time 1/31/22 1145	Received By: (Signature) Tom Mel	Date/Time 1-31-22 11:45
Relinquished By: (Signature) Tom Mel	Date/Time 1-31-22 11:55	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 1536	Received By: (Signature)	Date/Time 1/31/22 1540

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampler: Marisa Michalski and Jona Stoskey

Project #: 22-004-KS

Project Name: Speece Sampling

Project Manager: Katie Sasala

Invoice to: Bill Directly to SWN c/o Joshua Boyda

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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1276 Bentleyville Rd.
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F: 724-258-8376

1200 River Avenue
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P:
F

2012410

SAMPLE REQUEST & CHAIN OF CUSTODY

Chain of Custody
(Updated July 2016)

Sample Identification	2012410 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
SO-211	09A0	1/28/2022	1715	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-212	11A2	1/28/2022	1717	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-216	13A4	1/28/2022	1725	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-217	15A6	1/28/2022	1735	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	Matrix:	Container Type:	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampled By: (Signature) Tom M Moody / Moody	Date/Time 1/31/22 1145	Received By: (Signature) Tom Mck	Date/Time 1-31-22 11:45
Relinquished By: (Signature) Tom Mck	Date/Time 1-31-22 1135	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 1530	Received By: (Signature)	Date/Time 1/31/22 1540 IWEN

Sampler: Marisa Michalski and Jona Stoskey

Project #: 22-004-KS

Project Name: Speece Sampling

Project Manager: Katie Sasala

Invoice to: Bill Directly to SWN c/o Joshua Boyda

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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F: 724-465-4209

1276 Bentleyville Rd.
Van Voorhis, PA 15366
P: 724-258-TEST
F: 724-258-8376

1200 Rive
Williamsp
P: 570-3
F: 570-3

2012410

SAMPLE REQUEST & CHAIN OF CUSTODY

Chain of Custody

(Updated July 2016)

Sample Identification	ESL# (2012410)	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
SO-218	17/8	1/28/2022	1730	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-228	19/20	1/28/2022	1725	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:
G = Grab
C = Composite
D = Discharge
O = Other

Matrix:
AQ = Water
SO = Soil
SL = Sludge
O = Other (list)

Container Type:
P = Plastic
G = Glass
AG = Amber glass
VV = VOA Vial

Other: list

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampled By: (Signature)	Date/Time 1/31/22 1145	Received By: (Signature)	Date/Time 1-31-22 11:45
Relinquished By: (Signature)	Date/Time 1-31-22 1155	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 1530	Received By: (Signature)	Date/Time 1/31/22 1540

Sampler: Marisa Michalski and Jona Stoskey

Project #: 22-004-KS

Project Name: Speece Sampling

Project Manager: Katie Sasala

Invoice to: Bill Directly to SWN c/o Joshua Boyda

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE RECEIPT AND REVIEW FORM

Client: Moody	Work Orde 2012410

PART A: GENERAL INFORMATION- SATELLITE LABORATORY

Received by/Lab ID:	**Date/Time Received:** / / _____
Method of Delivery: Client Drop-Off ESL Courier Other: _____	**Received on Ice?** YES NO
Sample Receipt Temperature: _____ °C	**IR Gun ID:**
Containers Removed by Satellite Lab for Analysis of: FECAL TC/EC TC MPN EC MPN TC/EC MPN N/A	

PART B: GENERAL INFORMATION- INDIANA LABORATORY

Received by/Lab ID: SM (00382)	**Samples Received on Ice?** (YES) NO
Date/Time Received: 1/31/22 1540	**Date Sampled:** 1/25/22
Method of Delivery: FedEx UPS Client Drop off (ESL courier) Other: _____	
Sample Receipt Temperature: 4.0 °C	**IR Gun ID:** 3
Sample State of Collection: (PA) NY OH WV Other: _____	**PWSID Compliance Drinking Water Samples:** YES (NO)

PART C: Receipt Details

Completed (if different from above): _____ / / _____
Signature Date Time

Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)
Chain of custody documents included with samples?	(YES) NO	Comments:
COC form is properly signed in relinquished/received sections?	(YES) NO	Comments:
Sample containers intact and sealed?	(YES) NO	Circle Applicable: Damaged Container Leaking Container Custody Seal Broken Other: _____
Number of containers received matches number indicated on COC?	(YES) NO	Sample IDs and Containers Affected:
Sample IDs on COC match IDs on bottles?	(YES) NO	Sample IDs and Containers Affected:
Date and time on COC match date and time on bottles?	(YES) NO	Sample IDs and Containers Affected:
Samples received within holding time?	(YES) NO	Sample IDs and Containers Affected:
Samples received at appropriate pH for analysis requested?	(YES) NO	Sample IDs and Containers Affected and Observed pH:
Samples requiring thermal preservation within 0 ≤ 6°C? Microbiology within 0 ≤ 10°C?	(YES) NO	For non-WV samples outside of thermal preservation range sampled same day and received on ice are considered acceptable as long as the cooling process has begun.
Adequate sample volume received?	(YES) NO	Analyses Affected:
VOA vials free of headspace (defined as < 6 mm bubble)?	YES (NO)	Sample IDs and Containers Affected:
Other Comments:		**Deficiency Log Created:** YES (NO)

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia St.
Indiana, PA 15701
P: 724-463-TEST
F: 724-465-4209

1276 Bentle
Van Voorhis
P: 724-258-
F: 724-258-

2012410

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE ___1___ OF __3___

Chain of Custody

(Updated July 2016)

Sample Identification	2012415 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
BG-01	01102	1/28/2022	1800	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-02	03104	1/28/2022	1805	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-03	03105	1/28/2022	1810	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-04	03106	1/28/2022	1815	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	Matrix:	Container Type:	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD

1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Sampled By: (Signature) James M Stanley / Moody	Date/Time 1/31/22 1145	Received By: (Signature) Tom McC	Date/Time 1-31-22 11:45
Relinquished By: (Signature) Tom McC	Date/Time 1-31-22 1155	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature) 1/31/22	Date/Time 1530	Received By: (Signature) 1/31/22	Date/Time 1540

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampler: Marisa Michalski and Jona Stoskey

Project #:	22-004-KS
Project Name:	Speece Sampling
Project Manager:	Katie Sasala
Invoice to:	Bill Directly to SWN c/o Joshua Boyda

ENVIRONMENTAL SERVICE LABORATORIES, INC

1803 Philadelphia St.
Indiana, PA 15701
P: 724-463-TEST
F: 724-465-4209

1276 Bentleyville Rd.
Van Voorhis, PA 15366
P: 724-258-TEST
F: 724-258-8376

1200 River A
Williamspor
P: 570-321-
F: 570-321-

2012410

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE 2 OF 3

Chain of Custody

(Updated July 2016)

Sample Identification	2012415 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
BG-05	0910	1/28/2022	1820	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-06	1112	1/28/2022	1825	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-07	1314	1/28/2022	1830	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-08	1516	1/28/2022	1835	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	Matrix:	Container Type:	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Sampled By: (Signature) Jona Stoskey / Moody	Date/Time 1/31/22 1145	Received By: (Signature) Jim Mc	Date/Time 1/31/22 11:45
Relinquished By: (Signature) Jim Mc	Date/Time 1-31-22 11:55	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 1830	Received By: (Signature)	Date/Time 1/31/22 1510 IONJEN

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampler: Marisa Michalski and Jona Stoskey

Project #:	22-004-KS
Project Name:	Speece Sampling
Project Manager:	Katie Sasala
Invoice to:	Bill Directly to SWN c/o Joshua Boyda

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia St.
Indiana, PA 15701
P: 724-463-TEST
F: 724-465-4209

1276 Bentleyville Rd.
Van Voorhis, PA 15366
P: 724-258-TEST
F: 724-258-8376

1200 River Avenue
Williamsport, PA
P: 570-321-9002
F: 570-321-1957

2012410

SAMPLE REQUEST & CHAIN OF CUSTODY

Chain of Custody

(Updated July 2016)

Sample Identification	2012415 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
BG-09	17/8	1/28/2022	1840	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-10	19/20	1/28/2022	1845	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:
G = Grab
C = Composite
D = Discharge
O = Other

Matrix:
AQ = Water
SO = Soil
SL = Sludge
O = Other (list)

Container Type:
P = Plastic
G = Glass
AG = Amber glass
VV = VOA Vial

Other: list

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampled By: (Signature) / Moody	Date/Time 1/31/22 1145	Received By: (Signature)	Date/Time 1-31-22 11:45
Relinquished By: (Signature)	Date/Time 1-31-22 11:55	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 15:30	Received By: (Signature) CD	Date/Time 1/31/22 15:40

Sampler: Marisa Michalski and Jona Stoskey

Project #:	22-004-KS
Project Name:	Speece Sampling
Project Manager:	Katie Sasala
Invoice to:	Bill Directly to SWN c/o Joshua Boyda

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE RECEIPT AND REVIEW FORM

Client: Moody	Work Orc 2012410

PART A: GENERAL INFORMATION- SATELLITE LABORATORY

Received by/Lab ID:	**Date/Time Received:** / / _____
Method of Delivery: Client Drop-Off ESL Courier Other: _____	Received on Ice? YES NO
Sample Receipt Temperature: _____ °C	IR Gun ID:
Containers Removed by Satellite Lab for Analysis of: FECAL TC/EC TC MPN EC MPN TC/EC MPN N/A	

PART B: GENERAL INFORMATION- INDIANA LABORATORY

Received by/Lab ID: ~~JW~~ (005382)	**Samples Received on Ice?** (YES) NO
Date/Time Received: 1/31/22 1540	**Date Sampled:** 1/28/22
Method of Delivery: FedEx UPS Client Drop off (ESL courier) Other: _____	
Sample Receipt Temperature: 4.0 °C	IR Gun ID: 3
Sample State of Collection: (PA) NY OH WV Other: _____	PWSID Compliance Drinking Water Samples: YES (NO)

PART C: Receipt Details

Completed (if different from above): _____ / / _____
Signature Date Time

Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)
Chain of custody documents included with samples?	(YES) NO	Comments:
COC form is properly signed in relinquished/received sections?	(YES) NO	Comments:
Sample containers intact and sealed?	(YES) NO	Circle Applicable: Damaged Container Leaking Container Custody Seal Broken Other: _____
Number of containers received matches number indicated on COC?	(YES) NO	Sample IDs and Containers Affected:
Sample IDs on COC match IDs on bottles?	(YES) NO	Sample IDs and Containers Affected:
Date and time on COC match date and time on bottles?	(YES) NO	Sample IDs and Containers Affected:
Samples received within holding time?	(YES) NO	Sample IDs and Containers Affected:
Samples received at appropriate pH for analysis requested?	(YES) NO	Sample IDs and Containers Affected and Observed pH:
Samples requiring thermal preservation within 0 ≤ 6°C? Microbiology within 0 ≤ 10°C?	(YES) NO	For non-WV samples outside of thermal preservation range sampled same day and received on ice are considered acceptable as long as the cooling process has begun.
Adequate sample volume received?	(YES) NO	Analyses Affected:
VOA vials free of headspace (defined as < 6 mm bubble)?	YES (NO)	Sample IDs and Containers Affected:
Other Comments:		Deficiency Log Created: YES (NO)

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

February 11, 2022

Mr Richard Rodriguez
Environmental Service Laboratories, Inc.
1803 Philadelphia Street
Indiana, PA 15701

RE: Project: 2012410
Pace Project No.: 30461754

Dear Mr Rodriguez:

Enclosed are the analytical results for sample(s) received by the laboratory on February 01, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Megan A Rager

Megan A. Rager
megan.rager@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Sierra Grguric, Environmental Service Laboratories, Inc.

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 2012410
Pace Project No.: 30461754

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Florida: Cert E871149 SEKS WET
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: 2012410
Pace Project No.: 30461754

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30461754001	**2012410-01**	Solid	01/28/22 17:05	02/01/22 15:30
30461754002	**2012410-03**	Solid	01/28/22 17:05	02/01/22 15:30
30461754003	**2012410-05**	Solid	01/28/22 17:15	02/01/22 15:30
30461754004	**2012410-07**	Solid	01/28/22 17:40	02/01/22 15:30
30461754005	**2012410-09**	Solid	01/28/22 17:15	02/01/22 15:30
30461754006	**2012410-11**	Solid	01/28/22 17:17	02/01/22 15:30
30461754007	**2012410-13**	Solid	01/28/22 17:25	02/01/22 15:30
30461754008	**2012410-15**	Solid	01/28/22 17:35	02/01/22 15:30
30461754009	**2012410-17**	Solid	01/28/22 17:30	02/01/22 15:30
30461754010	**2012410-19**	Solid	01/28/22 17:25	02/01/22 15:30

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 2012410
Pace Project No.: 30461754

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30461754001	**2012410-01**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754002	**2012410-03**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754003	**2012410-05**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754004	**2012410-07**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754005	**2012410-09**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754006	**2012410-11**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754007	**2012410-13**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754008	**2012410-15**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754009	**2012410-17**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754010	**2012410-19**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-01 **Lab ID: 30461754001** Collected: 01/28/22 17:05 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	83-32-9	
Acenaphthylene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	208-96-8	
Anthracene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	120-12-7	
Benzo(a)anthracene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	56-55-3	
Benzo(a)pyrene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	207-08-9	
Chrysene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	53-70-3	
Fluoranthene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	206-44-0	
Fluorene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	193-39-5	
Naphthalene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	91-20-3	
Phenanthrene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	85-01-8	
Pyrene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	37-88	1	02/10/22 08:58	02/10/22 21:34	321-60-8	
Terphenyl-d14 (S)	81	%.	10-128	1	02/10/22 08:58	02/10/22 21:34	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**16.6**	%	0.10	1		02/03/22 10:44		

Sample: 2012410-03 **Lab ID: 30461754002** Collected: 01/28/22 17:05 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	83-32-9	
Acenaphthylene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	208-96-8	
Anthracene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	120-12-7	
Benzo(a)anthracene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	56-55-3	
Benzo(a)pyrene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	207-08-9	
Chrysene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	53-70-3	
Fluoranthene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	206-44-0	
Fluorene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	193-39-5	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-03 **Lab ID: 30461754002** Collected: 01/28/22 17:05 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Naphthalene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	91-20-3	
Phenanthrene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	85-01-8	
Pyrene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	37-88	1	02/10/22 08:58	02/10/22 21:54	321-60-8	
Terphenyl-d14 (S)	81	%.	10-128	1	02/10/22 08:58	02/10/22 21:54	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**20.3**	%	0.10	1		02/03/22 10:44		

Sample: 2012410-05 **Lab ID: 30461754003** Collected: 01/28/22 17:15 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	83-32-9	
Acenaphthylene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	208-96-8	
Anthracene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	207-08-9	
Chrysene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	53-70-3	
Fluoranthene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	206-44-0	
Fluorene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	193-39-5	
Naphthalene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	91-20-3	
Phenanthrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	85-01-8	
Pyrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	77	%.	37-88	1	02/10/22 08:58	02/10/22 22:14	321-60-8	
Terphenyl-d14 (S)	79	%.	10-128	1	02/10/22 08:58	02/10/22 22:14	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**29.2**	%	0.10	1		02/03/22 10:44		

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ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-07 **Lab ID: 30461754004** Collected: 01/28/22 17:40 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	83-32-9	
Acenaphthylene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	208-96-8	
Anthracene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	120-12-7	
Benzo(a)anthracene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	56-55-3	
Benzo(a)pyrene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	207-08-9	
Chrysene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	53-70-3	
Fluoranthene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	206-44-0	
Fluorene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	193-39-5	
Naphthalene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	91-20-3	
Phenanthrene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	85-01-8	
Pyrene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	76	%.	37-88	1	02/10/22 08:58	02/10/22 22:33	321-60-8	
Terphenyl-d14 (S)	78	%.	10-128	1	02/10/22 08:58	02/10/22 22:33	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**34.7**	%	0.10	1		02/03/22 10:44		

Sample: 2012410-09 **Lab ID: 30461754005** Collected: 01/28/22 17:15 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	83-32-9	
Acenaphthylene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	208-96-8	
Anthracene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	207-08-9	
Chrysene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	53-70-3	
Fluoranthene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	206-44-0	
Fluorene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	193-39-5	

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ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-09 **Lab ID: 30461754005** Collected: 01/28/22 17:15 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Naphthalene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	91-20-3	
Phenanthrene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	85-01-8	
Pyrene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	37-88	1	02/10/22 08:58	02/10/22 22:53	321-60-8	
Terphenyl-d14 (S)	78	%.	10-128	1	02/10/22 08:58	02/10/22 22:53	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**34.2**	%	0.10	1		02/03/22 10:44		

Sample: 2012410-11 **Lab ID: 30461754006** Collected: 01/28/22 17:17 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	83-32-9	
Acenaphthylene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	208-96-8	
Anthracene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	120-12-7	
Benzo(a)anthracene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	56-55-3	
Benzo(a)pyrene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	50-32-8	
Benzo(b)fluoranthene	**26.6**	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	191-24-2	
Benzo(k)fluoranthene	**26.7**	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	207-08-9	lp
Chrysene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	53-70-3	
Fluoranthene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	206-44-0	
Fluorene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	193-39-5	
Naphthalene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	91-20-3	
Phenanthrene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	85-01-8	
Pyrene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	37-88	1	02/10/22 08:58	02/10/22 23:13	321-60-8	
Terphenyl-d14 (S)	79	%.	10-128	1	02/10/22 08:58	02/10/22 23:13	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**23.1**	%	0.10	1		02/03/22 10:41		

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ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-13 **Lab ID: 30461754007** Collected: 01/28/22 17:25 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	83-32-9	
Acenaphthylene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	208-96-8	
Anthracene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	120-12-7	
Benzo(a)anthracene	**17.3**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	50-32-8	IS
Benzo(b)fluoranthene	**122**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	205-99-2	IS,lp
Benzo(g,h,i)perylene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	191-24-2	IS
Benzo(k)fluoranthene	**122**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	207-08-9	IS,lp
Chrysene	**84.4**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	53-70-3	IS
Fluoranthene	**41.6**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	206-44-0	
Fluorene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	193-39-5	IS
Naphthalene	**18.7**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	91-20-3	
Phenanthrene	**91.6**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	85-01-8	
Pyrene	**41.8**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	81	%.	37-88	1	02/10/22 08:58	02/10/22 23:32	321-60-8	
Terphenyl-d14 (S)	79	%.	10-128	1	02/10/22 08:58	02/10/22 23:32	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**31.6**	%	0.10	1		02/03/22 10:41		

Sample: 2012410-15 **Lab ID: 30461754008** Collected: 01/28/22 17:35 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	83-32-9	
Acenaphthylene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	208-96-8	
Anthracene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	120-12-7	
Benzo(a)anthracene	**29.6**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	56-55-3	
Benzo(a)pyrene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	50-32-8	IS
Benzo(b)fluoranthene	**197**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	205-99-2	IS,lp
Benzo(g,h,i)perylene	**9.4**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	191-24-2	IS
Benzo(k)fluoranthene	**197**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	207-08-9	IS,lp
Chrysene	**142**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	53-70-3	IS
Fluoranthene	**85.9**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	206-44-0	
Fluorene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	86-73-7	
Indeno(1,2,3-cd)pyrene	**10.2**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	193-39-5	IS

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ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-15 **Lab ID: 30461754008** Collected: 01/28/22 17:35 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Naphthalene	**16.0**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	91-20-3	
Phenanthrene	**393**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	85-01-8	
Pyrene	**87.8**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	83	%.	37-88	1	02/10/22 08:58	02/10/22 23:52	321-60-8	
Terphenyl-d14 (S)	79	%.	10-128	1	02/10/22 08:58	02/10/22 23:52	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**25.7**	%	0.10	1		02/03/22 10:41		

Sample: 2012410-17 **Lab ID: 30461754009** Collected: 01/28/22 17:30 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	83-32-9	
Acenaphthylene	ND	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	208-96-8	
Anthracene	**11.8**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	120-12-7	
Benzo(a)anthracene	**102**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	56-55-3	
Benzo(a)pyrene	**57.0**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	50-32-8	IS
Benzo(b)fluoranthene	**424**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	205-99-2	IS,lp
Benzo(g,h,i)perylene	**23.2**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	191-24-2	IS
Benzo(k)fluoranthene	**425**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	207-08-9	IS,lp
Chrysene	**294**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	218-01-9	
Dibenz(a,h)anthracene	**16.7**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	53-70-3	IS
Fluoranthene	**205**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	206-44-0	
Fluorene	ND	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	86-73-7	
Indeno(1,2,3-cd)pyrene	**24.9**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	193-39-5	IS
Naphthalene	**852**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	91-20-3	
Phenanthrene	**1310**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	85-01-8	
Pyrene	**620**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	81	%.	37-88	1	02/10/22 08:58	02/11/22 00:12	321-60-8	
Terphenyl-d14 (S)	76	%.	10-128	1	02/10/22 08:58	02/11/22 00:12	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**24.9**	%	0.10	1		02/03/22 10:41		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-19 **Lab ID: 30461754010** Collected: 01/28/22 17:25 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	83-32-9	
Acenaphthylene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	208-96-8	
Anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	50-32-8	
Benzo(b)fluoranthene	**90.7**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	191-24-2	
Benzo(k)fluoranthene	**90.9**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	207-08-9	lp
Chrysene	**40.3**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	53-70-3	
Fluoranthene	**12.4**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	206-44-0	
Fluorene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	193-39-5	
Naphthalene	**12.1**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	91-20-3	
Phenanthrene	**28.6**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	85-01-8	
Pyrene	**13.5**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	74	%.	37-88	1	02/10/22 08:58	02/11/22 00:31	321-60-8	
Terphenyl-d14 (S)	67	%.	10-128	1	02/10/22 08:58	02/11/22 00:31	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**29.2**	%	0.10	1		02/03/22 10:41		

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 2012410
Pace Project No.: 30461754

QC Batch: 482841
QC Batch Method: EPA 3546
Analysis Method: EPA 8270D by SIM
Analysis Description: 8270D/3546 MSSV PAH by SIM
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461754001, 30461754002, 30461754003, 30461754004, 30461754005, 30461754006, 30461754007, 30461754008, 30461754009, 30461754010

METHOD BLANK: 2333958 Matrix: Solid
Associated Lab Samples: 30461754001, 30461754002, 30461754003, 30461754004, 30461754005, 30461754006, 30461754007, 30461754008, 30461754009, 30461754010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acenaphthene	ug/kg	ND	6.6	02/10/22 15:41	
Acenaphthylene	ug/kg	ND	6.6	02/10/22 15:41	
Anthracene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(a)anthracene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(a)pyrene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(b)fluoranthene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(g,h,i)perylene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(k)fluoranthene	ug/kg	ND	6.6	02/10/22 15:41	
Chrysene	ug/kg	ND	6.6	02/10/22 15:41	
Dibenz(a,h)anthracene	ug/kg	ND	6.6	02/10/22 15:41	
Fluoranthene	ug/kg	ND	6.6	02/10/22 15:41	
Fluorene	ug/kg	ND	6.6	02/10/22 15:41	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	6.6	02/10/22 15:41	
Naphthalene	ug/kg	ND	6.6	02/10/22 15:41	
Phenanthrene	ug/kg	ND	6.6	02/10/22 15:41	
Pyrene	ug/kg	ND	6.6	02/10/22 15:41	
2-Fluorobiphenyl (S)	%.	84	37-88	02/10/22 15:41	
Terphenyl-d14 (S)	%.	86	10-128	02/10/22 15:41	

LABORATORY CONTROL SAMPLE: 2333959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/kg	129	103	80	47-104	
Acenaphthylene	ug/kg	129	106	82	49-115	
Anthracene	ug/kg	129	108	84	52-115	
Benzo(a)anthracene	ug/kg	129	108	83	54-130	
Benzo(a)pyrene	ug/kg	129	111	86	59-126	
Benzo(b)fluoranthene	ug/kg	129	124	96	55-133	
Benzo(g,h,i)perylene	ug/kg	129	129	100	54-127	
Benzo(k)fluoranthene	ug/kg	129	122	94	56-120	
Chrysene	ug/kg	129	109	84	56-115	
Dibenz(a,h)anthracene	ug/kg	129	137	106	55-129	
Fluoranthene	ug/kg	129	115	89	56-125	
Fluorene	ug/kg	129	108	84	50-114	
Indeno(1,2,3-cd)pyrene	ug/kg	129	138	106	55-129	
Naphthalene	ug/kg	129	90.0	70	45-102	
Phenanthrene	ug/kg	129	108	84	50-110	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 2012410
Pace Project No.: 30461754

LABORATORY CONTROL SAMPLE: 2333959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Pyrene	ug/kg	129	114	89	56-122	
2-Fluorobiphenyl (S)	%.			76	37-88	
Terphenyl-d14 (S)	%.			78	10-128	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2333960 2333961

Parameter	Units	30461753001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acenaphthene	ug/kg	ND	170	170	140	146	82	86	24-109	4	20	
Acenaphthylene	ug/kg	ND	170	170	144	151	85	89	26-119	4	20	
Anthracene	ug/kg	ND	170	170	145	151	85	88	32-115	4	20	
Benzo(a)anthracene	ug/kg	ND	170	170	137	141	81	83	30-133	3	20	
Benzo(a)pyrene	ug/kg	ND	170	170	123	128	72	75	11-151	4	20	
Benzo(b)fluoranthene	ug/kg	45.2	170	170	194	204	88	93	25-140	5	20	
Benzo(g,h,i)perylene	ug/kg	ND	170	170	67.2	63.8	38	36	10-126	5	20	
Benzo(k)fluoranthene	ug/kg	45.3	170	170	172	185	75	82	25-127	7	20	
Chrysene	ug/kg	ND	170	170	139	143	77	80	10-142	3	20	
Dibenz(a,h)anthracene	ug/kg	ND	170	170	113	110	67	65	13-127	3	20	
Fluoranthene	ug/kg	ND	170	170	148	153	86	89	20-139	3	20	
Fluorene	ug/kg	ND	170	170	149	155	88	91	28-114	4	20	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	170	170	99.2	95.8	56	54	15-123	4	20	
Naphthalene	ug/kg	ND	170	170	121	123	70	71	15-104	2	20	
Phenanthrene	ug/kg	ND	170	170	148	152	84	87	10-135	3	20	
Pyrene	ug/kg	ND	170	170	146	150	86	88	13-139	3	20	
2-Fluorobiphenyl (S)	%.						80	81	37-88			
Terphenyl-d14 (S)	%.						79	81	10-128			

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REPORT OF LABORATORY ANALYSIS

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 2012410
Pace Project No.: 30461754

QC Batch: 481454
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461754001, 30461754002, 30461754003, 30461754004, 30461754005

SAMPLE DUPLICATE: 2326470

Parameter	Units	30461472001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	28.5	27.1	5	20	

SAMPLE DUPLICATE: 2326471

Parameter	Units	30461643001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	27.7	24.5	13	20	

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 2012410
Pace Project No.: 30461754

QC Batch: 481455
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461754006, 30461754007, 30461754008, 30461754009, 30461754010

SAMPLE DUPLICATE: 2326477

Parameter	Units	30461754006 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.1	23.3	1	20	

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Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 2012410
Pace Project No.: 30461754

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

IS	The internal standard response is below criteria. Results may be biased high.
Ip	Benzo(b)fluoranthene and benzo(k)fluoranthene were separated in the check standard but did not meet the resolution criteria specified in the test method. Sample results included are reported as individual isomers, but the lab and the client must recognize them as an isomeric pair.

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2012410
Pace Project No.: 30461754

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30461754001	**2012410-01**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754002	**2012410-03**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754003	**2012410-05**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754004	**2012410-07**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754005	**2012410-09**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754006	**2012410-11**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754007	**2012410-13**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754008	**2012410-15**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754009	**2012410-17**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754010	**2012410-19**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754001	**2012410-01**	ASTM D2974-87	481454		
30461754002	**2012410-03**	ASTM D2974-87	481454		
30461754003	**2012410-05**	ASTM D2974-87	481454		
30461754004	**2012410-07**	ASTM D2974-87	481454		
30461754005	**2012410-09**	ASTM D2974-87	481454		
30461754006	**2012410-11**	ASTM D2974-87	481455		
30461754007	**2012410-13**	ASTM D2974-87	481455		
30461754008	**2012410-15**	ASTM D2974-87	481455		
30461754009	**2012410-17**	ASTM D2974-87	481455		
30461754010	**2012410-19**	ASTM D2974-87	481455		

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SUBCONTRACT ORDER

WO# : 30461754

30461754

Environmental Service Laboratories

2012410

Please report all results to **reports@envlabs.com**. Conta

SENDING LABORATORY:

Environmental Service Laboratories, Inc.
1803 Philadelphia Street
Indiana, PA 15701
Phone: 724-463-8378
Fax: 724-465-4209
Project Manager: Lucas Winner

RECEIVING LABORATORY:

Pace Analytical Services, LLC.
1638 Roseytown Road - Suites 2, 3, 4
Greensburg, PA 15601
Phone :(724) 850-5600
Fax: (724) 850-5601

State of Origin: PA

Analysis	Due	Expires	Comments
Sample ID: 2012410-01 **Matrix: Solid** **Sampled: 01/28/2022 17:05** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	02/10/2022 23:00	02/27/2022 17:05	
Containers Supplied: Glass Jar, 8 oz. (A)			001
Sample ID: 2012410-03 **Matrix: Solid** **Sampled: 01/28/2022 17:05** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	02/10/2022 23:00	02/27/2022 17:05	
Containers Supplied: Glass Jar, 8 oz. (A)			002
Sample ID: 2012410-05 **Matrix: Solid** **Sampled: 01/28/2022 17:15** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	02/10/2022 23:00	02/27/2022 17:15	
Containers Supplied: Glass Jar, 8 oz. (A)			003
Sample ID: 2012410-07 **Matrix: Solid** **Sampled: 01/28/2022 17:40** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	02/10/2022 23:00	02/27/2022 17:40	
Containers Supplied: Glass Jar, 8 oz. (A)			004
Sample ID: 2012410-09 **Matrix: Solid** **Sampled: 01/28/2022 17:15** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	02/10/2022 23:00	02/27/2022 17:15	
Containers Supplied: Glass Jar, 8 oz. (A)			005
Sample ID: 2012410-11 **Matrix: Solid** **Sampled: 01/28/2022 17:17** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	02/10/2022 23:00	02/27/2022 17:17	
Containers Supplied: Glass Jar, 8 oz. (A)			006

Released By	1/31/22 Date	Bill Gorham	Received By	2/1/22 Date	1125
Bill Gorham Released By	2/1/22 Date 1530	A Mock	Received By	02/01/22 Date	15:30

SUBCONTRACT ORDER

Environmental Service Laborator

2012410

WO# : 30461754

PM: MAR Due Date: 02/10/22

CLIENT: ESL

Please report all results to **reports@envlabs.com**. Co

Analysis	Due	Expires	Comments
Sample ID: 2012410-13			
Matrix: Solid **Sampled: 01/28/2022 17:25**	**Sample Type: Grab**		**Sampled By: Client**
PAH SIMS	02/10/2022 23:00	02/27/2022 17:25	
Containers Supplied:			007
Glass Jar, 8 oz. (A)			
Sample ID: 2012410-15			
Matrix: Solid **Sampled: 01/28/2022 17:35**	**Sample Type: Grab**		**Sampled By: Client**
PAH SIMS	02/10/2022 23:00	02/27/2022 17:35	
Containers Supplied:			008
Glass Jar, 8 oz. (A)			
Sample ID: 2012410-17			
Matrix: Solid **Sampled: 01/28/2022 17:30**	**Sample Type: Grab**		**Sampled By: Client**
PAH SIMS	02/10/2022 23:00	02/27/2022 17:30	
Containers Supplied:			009
Glass Jar, 8 oz. (A)			
Sample ID: 2012410-19			
Matrix: Solid **Sampled: 01/28/2022 17:25**	**Sample Type: Grab**		**Sampled By: Client**
PAH SIMS	02/10/2022 23:00	02/27/2022 17:25	
Containers Supplied:			010
Glass Jar, 8 oz. (A)			

Released By Date Received By Date

Released By Date Received By Date

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: ESL Project #

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other

Label AF
LIMS Login VeInc

Tracking #: N/A

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Thermometer Used AF Type of Ice: (Wet) Blue None

Cooler Temperature Observed Temp 3.5 °C Correction Factor: (0.0) °C Final Temp: 3.5 °C

Temp should be above freezing to 6°C

WO#: 30461754

PM: MAR
CLIENT: ESL
Due Date: 02/10/22

Comments:	Yes	No	N/A	pH paper Lot# N/A	Date and initials of person examining contents: 02/01/22 AF
Chain of Custody Present:	X			1.	
Chain of Custody Filled Out:		X		2. no preservation listed	
Chain of Custody Relinquished:	X			3.	
Sampler Name & Signature on COC:		X		4.	
Sample Labels match COC: -Includes date/time/ID Matrix: SL	X			5.	
Samples Arrived within Hold Time:	X			6.	
Short Hold Time Analysis (<72hr remaining):		X		7.	
Rush Turn Around Time Requested:		X		8.	
Sufficient Volume:	X			9.	
Correct Containers Used:	X			10.	
-Pace Containers Used:		X			
Containers Intact:	X			11.	
Orthophosphate field filtered			X	12.	
Hex Cr Aqueous sample field filtered			X	13.	
Organic Samples checked for dechlorination:			X	14.	
Filtered volume received for Dissolved tests			X	15.	
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix			X	16.	
All containers meet method preservation requirements.	X			Initial when completed AF	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			X	17.	
Trip Blank Present:		X		18.	
Trip Blank Custody Seals Present			X		
Rad Samples Screened < 0.5 mrem/hr			X	Initial when completed:	Date: / Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
P: (724) 463-8378
F: (724) 465-4209
PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
P: (570) 321-9002
F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

24 February 2022

Moody & Associates, Inc. (Washington Office)
Attn: Katie Sasala
1720 Washington Road
Washington, PA 15301

Work Order: 2012415
Project: 22-004-KS Speece Sampling

Report of Analysis

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received	Sample Notes
BG-01	2012415-01	Solid	01/28/2022 18:00	1/31/22 15:40	
BG-01 TCLP	2012415-02	Solid	01/28/2022 18:00	1/31/22 15:40	
BG-02	2012415-03	Solid	01/28/2022 18:05	1/31/22 15:40	
BG-02 TCLP	2012415-04	Solid	01/28/2022 18:05	1/31/22 15:40	
BG-03	2012415-05	Solid	01/28/2022 18:10	1/31/22 15:40	
BG-03 TCLP	2012415-06	Solid	01/28/2022 18:10	1/31/22 15:40	
BG-04	2012415-07	Solid	01/28/2022 18:15	1/31/22 15:40	
BG-04 TCLP	2012415-08	Solid	01/28/2022 18:15	1/31/22 15:40	
BG-05	2012415-09	Solid	01/28/2022 18:20	1/31/22 15:40	
BG-05 TCLP	2012415-10	Solid	01/28/2022 18:20	1/31/22 15:40	
BG-06	2012415-11	Solid	01/28/2022 18:25	1/31/22 15:40	
BG-06 TCLP	2012415-12	Solid	01/28/2022 18:25	1/31/22 15:40	
BG-07	2012415-13	Solid	01/28/2022 18:30	1/31/22 15:40	
BG-07 TCLP	2012415-14	Solid	01/28/2022 18:30	1/31/22 15:40	
BG-08	2012415-15	Solid	01/28/2022 18:35	1/31/22 15:40	
BG-08 TCLP	2012415-16	Solid	01/28/2022 18:35	1/31/22 15:40	
BG-09	2012415-17	Solid	01/28/2022 18:40	1/31/22 15:40	
BG-09 TCLP	2012415-18	Solid	01/28/2022 18:40	1/31/22 15:40	
BG-10	2012415-19	Solid	01/28/2022 18:45	1/31/22 15:40	
BG-10 TCLP	2012415-20	Solid	01/28/2022 18:45	1/31/22 15:40	

Report Narrative

The results contained in this report are only representative of the samples received. Environmental Service Laboratories, Inc. is not responsible for use or interpretation of the data included herein.

Revised report 2022-02-24 ANJ to include sub narratives.

PAH SIMS subcontracted to Pace Analytical Services, LLC., PA-DEP ID 65-00282; please see attached subcontract laboratory Report of Analysis for results.

Definitions

DM Dilution required due to Matrix interference.
RL Reporting Limit

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Reported: 02/24/2022 12:17

Certifications

Analyses performed by Environmental Service Laboratories, Inc., Indiana PA unless otherwise specified.

Environmental Service Laboratories, Inc., Indiana, PA/TNI Certification #32-00382

Approved By

Alicia N Johnston

Alicia Johnston
Project Manager

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Lab Sample ID#: 2012415-01
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-01

Sample Date: 01/28/2022 18:00
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	58.0	mg/kg dry		13.3	TLL	02/18/22 01:07	02/18/22 01:07
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	75.0	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<258	ug/kg dry		258	MJK	02/04/22 12:02	02/04/22 12:02
Toluene	<258	ug/kg dry		258	MJK	02/04/22 12:02	02/04/22 12:02
Ethyl Benzene	<258	ug/kg dry		258	MJK	02/04/22 12:02	02/04/22 12:02
m,p-Xylenes	<516	ug/kg dry		516	MJK	02/04/22 12:02	02/04/22 12:02
o-Xylene	<258	ug/kg dry		258	MJK	02/04/22 12:02	02/04/22 12:02
Total Xylenes	<258	ug/kg dry		258	MJK	02/04/22 12:02	02/04/22 12:02
Surrogate: 1,2-Dichloroethane-d4	*82 %*		*80-120*		*MJK*	*02/04/22 12:02*	*02/04/22 12:02*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/04/22 12:02*	*02/04/22 12:02*
Surrogate: 4-Bromofluorobenzene	*107 %*		*86-115*		*MJK*	*02/04/22 12:02*	*02/04/22 12:02*

Lab Sample ID#: 2012415-02
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-01 TCLP

Sample Date: 01/28/2022 18:00
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	3.42	mg/L		2.00	TLL	02/10/22 05:38	02/10/22 05:38

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Lab Sample ID#: 2012415-03
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-02

Sample Date: 01/28/2022 18:05
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	11.2	mg/kg dry		14.1	TLL	02/18/22 01:25	02/18/22 01:25
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	68.0	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<305	ug/kg dry		305	MJK	02/04/22 12:27	02/04/22 12:27
Toluene	<305	ug/kg dry		305	MJK	02/04/22 12:27	02/04/22 12:27
Ethyl Benzene	<305	ug/kg dry		305	MJK	02/04/22 12:27	02/04/22 12:27
m,p-Xylenes	<610	ug/kg dry		610	MJK	02/04/22 12:27	02/04/22 12:27
o-Xylene	<305	ug/kg dry		305	MJK	02/04/22 12:27	02/04/22 12:27
Total Xylenes	<305	ug/kg dry		305	MJK	02/04/22 12:27	02/04/22 12:27
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/04/22 12:27*	*02/04/22 12:27*
Surrogate: Toluene-d8	*99 %*		*88-110*		*MJK*	*02/04/22 12:27*	*02/04/22 12:27*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/04/22 12:27*	*02/04/22 12:27*

Lab Sample ID#: 2012415-04
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-02 TCLP

Sample Date: 01/28/2022 18:05
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.02	mg/L	DM	4.00	TLL	02/10/22 05:57	02/10/22 05:57

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Lab Sample ID#: 2012415-05
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-03

Sample Date: 01/28/2022 18:10
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	45.7	mg/kg dry		12.9	TLL	02/18/22 01:43	02/18/22 01:43
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	75.8	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<250	ug/kg dry		250	MJK	02/04/22 12:52	02/04/22 12:52
Toluene	<250	ug/kg dry		250	MJK	02/04/22 12:52	02/04/22 12:52
Ethyl Benzene	<250	ug/kg dry		250	MJK	02/04/22 12:52	02/04/22 12:52
m,p-Xylenes	<500	ug/kg dry		500	MJK	02/04/22 12:52	02/04/22 12:52
o-Xylene	<250	ug/kg dry		250	MJK	02/04/22 12:52	02/04/22 12:52
Total Xylenes	<250	ug/kg dry		250	MJK	02/04/22 12:52	02/04/22 12:52
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/04/22 12:52*	*02/04/22 12:52*
Surrogate: Toluene-d8	*99 %*		*88-110*		*MJK*	*02/04/22 12:52*	*02/04/22 12:52*
Surrogate: 4-Bromofluorobenzene	*107 %*		*86-115*		*MJK*	*02/04/22 12:52*	*02/04/22 12:52*

Lab Sample ID#: 2012415-06
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-03 TCLP

Sample Date: 01/28/2022 18:10
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	2.76	mg/L		2.00	TLL	02/10/22 06:16	02/10/22 06:16

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Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-07
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-04

Sample Date: 01/28/2022 18:15
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	42.4	mg/kg dry		13.7	TLL	02/18/22 02:37	02/18/22 02:37
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	71.1	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<273	ug/kg dry		273	MJK	02/04/22 13:18	02/04/22 13:18
Toluene	<273	ug/kg dry		273	MJK	02/04/22 13:18	02/04/22 13:18
Ethyl Benzene	<273	ug/kg dry		273	MJK	02/04/22 13:18	02/04/22 13:18
m,p-Xylenes	<545	ug/kg dry		545	MJK	02/04/22 13:18	02/04/22 13:18
o-Xylene	<273	ug/kg dry		273	MJK	02/04/22 13:18	02/04/22 13:18
Total Xylenes	<273	ug/kg dry		273	MJK	02/04/22 13:18	02/04/22 13:18
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/04/22 13:18*	*02/04/22 13:18*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/04/22 13:18*	*02/04/22 13:18*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/04/22 13:18*	*02/04/22 13:18*

Lab Sample ID#: 2012415-08
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-04 TCLP

Sample Date: 01/28/2022 18:15
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.98	mg/L	DM	4.00	TLL	02/10/22 07:13	02/10/22 07:13

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Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-09
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-05

Sample Date: 01/28/2022 18:20
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	16.1	mg/kg dry		14.3	TLL	02/18/22 02:55	02/18/22 02:55
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	67.8	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<350	ug/kg dry		350	MJK	02/04/22 13:43	02/04/22 13:43
Toluene	<350	ug/kg dry		350	MJK	02/04/22 13:43	02/04/22 13:43
Ethyl Benzene	<350	ug/kg dry		350	MJK	02/04/22 13:43	02/04/22 13:43
m,p-Xylenes	<701	ug/kg dry		701	MJK	02/04/22 13:43	02/04/22 13:43
o-Xylene	<350	ug/kg dry		350	MJK	02/04/22 13:43	02/04/22 13:43
Total Xylenes	<350	ug/kg dry		350	MJK	02/04/22 13:43	02/04/22 13:43
Surrogate: 1,2-Dichloroethane-d4	*82 %*		*80-120*		*MJK*	*02/04/22 13:43*	*02/04/22 13:43*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/04/22 13:43*	*02/04/22 13:43*
Surrogate: 4-Bromofluorobenzene	*107 %*		*86-115*		*MJK*	*02/04/22 13:43*	*02/04/22 13:43*

Lab Sample ID#: 2012415-10
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-05 TCLP

Sample Date: 01/28/2022 18:20
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	2.22	mg/L	DM	4.00	TLL	02/10/22 07:32	02/10/22 07:32

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Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-11
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-06

Sample Date: 01/28/2022 18:25
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	13.9	mg/kg dry		13.8	TLL	02/18/22 03:13	02/18/22 03:13
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	68.2	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<324	ug/kg dry		324	MJK	02/04/22 14:08	02/04/22 14:08
Toluene	<324	ug/kg dry		324	MJK	02/04/22 14:08	02/04/22 14:08
Ethyl Benzene	<324	ug/kg dry		324	MJK	02/04/22 14:08	02/04/22 14:08
m,p-Xylenes	<648	ug/kg dry		648	MJK	02/04/22 14:08	02/04/22 14:08
o-Xylene	<324	ug/kg dry		324	MJK	02/04/22 14:08	02/04/22 14:08
Total Xylenes	<324	ug/kg dry		324	MJK	02/04/22 14:08	02/04/22 14:08
Surrogate: 1,2-Dichloroethane-d4	*84 %*		*80-120*		*MJK*	*02/04/22 14:08*	*02/04/22 14:08*
Surrogate: Toluene-d8	*98 %*		*88-110*		*MJK*	*02/04/22 14:08*	*02/04/22 14:08*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/04/22 14:08*	*02/04/22 14:08*

Lab Sample ID#: 2012415-12
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-06 TCLP

Sample Date: 01/28/2022 18:25
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	5.61	mg/L		2.00	TLL	02/10/22 07:51	02/10/22 07:51

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Lab Sample ID#: 2012415-13
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-07

Sample Date: 01/28/2022 18:30
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	16.4	mg/kg dry		14.1	TLL	02/18/22 03:31	02/18/22 03:31
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	71.0	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<336	ug/kg dry		336	MJK	02/04/22 14:33	02/04/22 14:33
Toluene	<336	ug/kg dry		336	MJK	02/04/22 14:33	02/04/22 14:33
Ethyl Benzene	<336	ug/kg dry		336	MJK	02/04/22 14:33	02/04/22 14:33
m,p-Xylenes	<672	ug/kg dry		672	MJK	02/04/22 14:33	02/04/22 14:33
o-Xylene	<336	ug/kg dry		336	MJK	02/04/22 14:33	02/04/22 14:33
Total Xylenes	<336	ug/kg dry		336	MJK	02/04/22 14:33	02/04/22 14:33
Surrogate: 1,2-Dichloroethane-d4	*81 %*		*80-120*		*MJK*	*02/04/22 14:33*	*02/04/22 14:33*
Surrogate: Toluene-d8	*98 %*		*88-110*		*MJK*	*02/04/22 14:33*	*02/04/22 14:33*
Surrogate: 4-Bromofluorobenzene	*105 %*		*86-115*		*MJK*	*02/04/22 14:33*	*02/04/22 14:33*

Lab Sample ID#: 2012415-14
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-07 TCLP

Sample Date: 01/28/2022 18:30
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.31	mg/L	DM	4.00	TLL	02/10/22 08:10	02/10/22 08:10

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
P: (724) 463-8378
F: (724) 465-4209
PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
P: (570) 321-9002
F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-15
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-08

Sample Date: 01/28/2022 18:35
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	32.3	mg/kg dry		14.4	TLL	02/18/22 03:49	02/18/22 03:49
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	68.9	%			BJL	02/01/22 12:16	02/01/22 12:16
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<320	ug/kg dry		320	MJK	02/04/22 16:58	02/04/22 16:58
Toluene	<320	ug/kg dry		320	MJK	02/04/22 16:58	02/04/22 16:58
Ethyl Benzene	<320	ug/kg dry		320	MJK	02/04/22 16:58	02/04/22 16:58
m,p-Xylenes	<639	ug/kg dry		639	MJK	02/04/22 16:58	02/04/22 16:58
o-Xylene	<320	ug/kg dry		320	MJK	02/04/22 16:58	02/04/22 16:58
Total Xylenes	<320	ug/kg dry		320	MJK	02/04/22 16:58	02/04/22 16:58
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/04/22 16:58*	*02/04/22 16:58*
Surrogate: Toluene-d8	*96 %*		*88-110*		*MJK*	*02/04/22 16:58*	*02/04/22 16:58*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/04/22 16:58*	*02/04/22 16:58*

Lab Sample ID#: 2012415-16
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-08 TCLP

Sample Date: 01/28/2022 18:35
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	22.5	mg/L		4.00	TLL	02/10/22 08:29	02/10/22 08:29

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
P: (724) 463-8378
F: (724) 465-4209
PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
P: (570) 321-9002
F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-17
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-09

Sample Date: 01/28/2022 18:40
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	39.8	mg/kg dry		13.9	TLL	02/18/22 04:07	02/18/22 04:07
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	69.5	%			BJL	02/01/22 12:16	02/01/22 12:16
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<311	ug/kg dry		311	MJK	02/04/22 15:42	02/04/22 15:42
Toluene	<311	ug/kg dry		311	MJK	02/04/22 15:42	02/04/22 15:42
Ethyl Benzene	<311	ug/kg dry		311	MJK	02/04/22 15:42	02/04/22 15:42
m,p-Xylenes	<623	ug/kg dry		623	MJK	02/04/22 15:42	02/04/22 15:42
o-Xylene	<311	ug/kg dry		311	MJK	02/04/22 15:42	02/04/22 15:42
Total Xylenes	<311	ug/kg dry		311	MJK	02/04/22 15:42	02/04/22 15:42
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/04/22 15:42*	*02/04/22 15:42*
Surrogate: Toluene-d8	*100 %*		*88-110*		*MJK*	*02/04/22 15:42*	*02/04/22 15:42*
Surrogate: 4-Bromofluorobenzene	*105 %*		*86-115*		*MJK*	*02/04/22 15:42*	*02/04/22 15:42*

Lab Sample ID#: 2012415-18
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-09 TCLP

Sample Date: 01/28/2022 18:40
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	2.55	mg/L	DM	4.00	TLL	02/10/22 08:48	02/10/22 08:48

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
P: (724) 463-8378
F: (724) 465-4209
PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
P: (570) 321-9002
F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-19
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-10

Sample Date: 01/28/2022 18:45
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	15.0	mg/kg dry		13.6	TLL	02/18/22 04:25	02/18/22 04:25
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	71.8	%			BJL	02/01/22 12:16	02/01/22 12:16
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<293	ug/kg dry		293	MJK	02/04/22 16:07	02/04/22 16:07
Toluene	<293	ug/kg dry		293	MJK	02/04/22 16:07	02/04/22 16:07
Ethyl Benzene	<293	ug/kg dry		293	MJK	02/04/22 16:07	02/04/22 16:07
m,p-Xylenes	<587	ug/kg dry		587	MJK	02/04/22 16:07	02/04/22 16:07
o-Xylene	<293	ug/kg dry		293	MJK	02/04/22 16:07	02/04/22 16:07
Total Xylenes	<293	ug/kg dry		293	MJK	02/04/22 16:07	02/04/22 16:07
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/04/22 16:07*	*02/04/22 16:07*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/04/22 16:07*	*02/04/22 16:07*
Surrogate: 4-Bromofluorobenzene	*105 %*		*86-115*		*MJK*	*02/04/22 16:07*	*02/04/22 16:07*

Lab Sample ID#: 2012415-20
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-10 TCLP

Sample Date: 01/28/2022 18:45
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	2.25	mg/L		2.00	TLL	02/10/22 09:07	02/10/22 09:07

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia St.
Indiana, PA 15701
P: 724-463-TEST
F: 724-465-4209

1276 Bentle
Van Voorhi.
P: 724-258-
F: 724-258-

2012415

SAMPLE REQUEST & CHAIN OF CUSTODY

Chain of Custody

(Updated July 2016)

Sample Identification	2012415 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
BG-01	01	1/28/2022	1800	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-02	02	1/28/2022	1805	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-03	03	1/28/2022	1810	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-04	04	1/28/2022	1815	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	Matrix:	Container Type:	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD

1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampled By: (Signature) Tom M Stanley / Moody	Date/Time 1/31/22 1145	Received By: (Signature) Tom Mc	Date/Time 1-31-22 11:45
Relinquished By: (Signature) Tom Mc	Date/Time 1-31-22 1155	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 1530	Received By: (Signature)	Date/Time 1/31/22 1540

Sampler: Marisa Michalski and Jona Stoskey

Project #:	22-004-KS
Project Name:	Speece Sampling
Project Manager:	Katie Sasala
Invoice to:	Bill Directly to SWN c/o Joshua Boyda

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia St.
Indiana, PA 15701
P: 724-463-TEST
F: 724-465-4209

1276 Bentleyville Rd.
Van Voorhis, PA 15366
P: 724-258-TEST
F: 724-258-8376

1200 River A
Williamspo
P: 570-321
F: 570-321-

2012415

SAMPLE REQUEST & CHAIN OF CUSTODY

Chain of Custody

(Updated July 2016)

Sample Identification	2012415 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
BG-05	09/10	1/28/2022	1820	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-06	11/12	1/28/2022	1825	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-07	13/14	1/28/2022	1830	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-08	15/16	1/28/2022	1835	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	**Matrix:**	**Container Type:**	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampled By: (Signature) Jona M Stoskey / Moody	Date/Time 1/31/22 1145	Received By: (Signature) Tom Mc	Date/Time 1/31/22 11:45
Relinquished By: (Signature) Tom Mc	Date/Time 1-31-22 11:55	Received By: (Signature)	Date/Time 1/31/22 1255
Relinquished By: (Signature)	Date/Time 1/31/22 1530	Received By: (Signature)	Date/Time 1/31/22 1510 ICNJSN

Sampler: Marisa Michalski and Jona Stoskey

Project #:	22-004-KS
Project Name:	Speece Sampling
Project Manager:	Katie Sasala
Invoice to:	Bill Directly to SWN c/o Joshua Boyda

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia St.
Indiana, PA 15701
P: 724-463-TEST
F: 724-465-4209

1276 Bentleyville Rd.
Van Voorhis, PA 15366
P: 724-258-TEST
F: 724-258-8376

1200 River Aven
Williamsport, PA
P: 570-321-900
F: 570-321-1957

MPLE REQUEST & CHAIN OF CUSTODY

2012415

PAGE ___3___ OF __3___

Chain of Custody

(Updated July 2016)

Sample Identification	2012415 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
BG-09	1718	1/28/2022	1840	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-10	1920	1/28/2022	1845	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	**Matrix:**	**Container Type:**	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS

Sampled By: (Signature) / Moody	Date/Time 11/31/22 1145	Received By: (Signature)	Date/Time 1-31-22 11:45
Relinquished By: (Signature)	Date/Time 1-31-22 11:55	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 15:30	Received By: (Signature)	Date/Time 1/31/22 15:40

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampler: Marisa Michalski and Jona Stoskey

Project #: 22-004-KS

Project Name: Speece Sampling

Project Manager: Katie Sasala

Invoice to: Bill Directly to SWN c/o Joshua Boyda

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE RECEIPT AND REVIEW FORM

Client: Moody	Work O 2012415

PART A: GENERAL INFORMATION- SATELLITE LABORATORY

Received by/Lab ID:	**Date/Time Received:** / /
Method of Delivery: Client Drop-Off ESL Courier Other: _____	Received on Ice? YES NO
Sample Receipt Temperature: _____ °C	IR Gun ID:
Containers Removed by Satellite Lab for Analysis of: FECAL TC/EC TC MPN EC MPN TC/EC MPN N/A	

PART B: GENERAL INFORMATION- INDIANA LABORATORY

Received by/Lab ID: JM (005582)	**Samples Received on Ice?** (YES) NO
Date/Time Received: 1/31/22 1540	**Date Sampled:** 1/28/22
Method of Delivery: FedEx UPS Client Drop off (ESL courier) Other: _____	
Sample Receipt Temperature: 4.0 °C	IR Gun ID: 3
Sample State of Collection: (PA) NY OH WV Other: _____	**PWSID Compliance Drinking Water Samples:** YES (NO)

PART C: Receipt Details

Completed (if different from above): _____ / / _____
Signature Date Time

Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)
Chain of custody documents included with samples?	(YES) NO	Comments:
COC form is properly signed in relinquished/received sections?	(YES) NO	Comments:
Sample containers intact and sealed?	(YES) NO	Circle Applicable: Damaged Container Leaking Container Custody Seal Broken Other: _____
Number of containers received matches number indicated on COC?	(YES) NO	Sample IDs and Containers Affected:
Sample IDs on COC match IDs on bottles?	(YES) NO	Sample IDs and Containers Affected:
Date and time on COC match date and time on bottles?	(YES) NO	Sample IDs and Containers Affected:
Samples received within holding time?	(YES) NO	Sample IDs and Containers Affected:
Samples received at appropriate pH for analysis requested?	(YES) NO	Sample IDs and Containers Affected and Observed pH:
Samples requiring thermal preservation within 0 ≤ 6°C? Microbiology within 0 ≤ 10°C?	(YES) NO	For non-WV samples outside of thermal preservation range sampled same day and received on ice are considered acceptable as long as the cooling process has begun.
Adequate sample volume received?	(YES) NO	Analyses Affected:
VOA vials free of headspace (defined as < 6 mm bubble)?	YES (NO)	Sample IDs and Containers Affected:
Other Comments:		Deficiency Log Created: YES (NO)

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

February 11, 2022

Mr Richard Rodriguez
Environmental Service Laboratories, Inc.
1803 Philadelphia Street
Indiana, PA 15701

RE: Project: 2012415
Pace Project No.: 30461753

Dear Mr Rodriguez:

Enclosed are the analytical results for sample(s) received by the laboratory on February 01, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Megan A Rager

Megan A. Rager
megan.rager@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Sierra Grguric, Environmental Service Laboratories, Inc.

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without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 2012415
Pace Project No.: 30461753

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Florida: Cert E871149 SEKS WET
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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Greensburg, PA 15601
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SAMPLE SUMMARY

Project: 2012415
Pace Project No.: 30461753

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30461753001	**2012415-01**	Solid	01/28/22 18:00	02/01/22 15:30
30461753002	**2012415-03**	Solid	01/28/22 18:05	02/01/22 15:30
30461753003	**2012415-05**	Solid	01/28/22 18:10	02/01/22 15:30
30461753004	**2012415-07**	Solid	01/28/22 18:15	02/01/22 15:30
30461753005	**2012415-09**	Solid	01/28/22 18:20	02/01/22 15:30
30461753006	**2012415-11**	Solid	01/28/22 18:25	02/01/22 15:30
30461753007	**2012415-13**	Solid	01/28/22 18:30	02/01/22 15:30
30461753008	**2012415-15**	Solid	01/28/22 18:35	02/01/22 15:30
30461753009	**2012415-17**	Solid	01/28/22 18:40	02/01/22 15:30
30461753010	**2012415-19**	Solid	01/28/22 18:45	02/01/22 15:30

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SAMPLE ANALYTE COUNT

Project: 2012415
Pace Project No.: 30461753

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30461753001	**2012415-01**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753002	**2012415-03**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753003	**2012415-05**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753004	**2012415-07**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753005	**2012415-09**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753006	**2012415-11**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753007	**2012415-13**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753008	**2012415-15**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753009	**2012415-17**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753010	**2012415-19**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-01 **Lab ID: 30461753001** Collected: 01/28/22 18:00 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	83-32-9	
Acenaphthylene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	208-96-8	
Anthracene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	120-12-7	
Benzo(a)anthracene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	56-55-3	
Benzo(a)pyrene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	50-32-8	
Benzo(b)fluoranthene	**45.2**	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	191-24-2	
Benzo(k)fluoranthene	**45.3**	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	207-08-9	lp
Chrysene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	53-70-3	
Fluoranthene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	206-44-0	
Fluorene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	193-39-5	
Naphthalene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	91-20-3	
Phenanthrene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	85-01-8	
Pyrene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	83	%.	37-88	1	02/10/22 08:58	02/10/22 17:39	321-60-8	
Terphenyl-d14 (S)	84	%.	10-128	1	02/10/22 08:58	02/10/22 17:39	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**23.5**	%	0.10	1		02/03/22 10:44		

Sample: 2012415-03 **Lab ID: 30461753002** Collected: 01/28/22 18:05 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	83-32-9	
Acenaphthylene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	208-96-8	
Anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	50-32-8	
Benzo(b)fluoranthene	**53.8**	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	191-24-2	
Benzo(k)fluoranthene	**53.9**	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	207-08-9	lp
Chrysene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	53-70-3	
Fluoranthene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	206-44-0	
Fluorene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	193-39-5	

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ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-03 **Lab ID: 30461753002** Collected: 01/28/22 18:05 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Naphthalene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	91-20-3	
Phenanthrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	85-01-8	
Pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	37-88	1	02/10/22 08:58	02/10/22 18:38	321-60-8	
Terphenyl-d14 (S)	79	%.	10-128	1	02/10/22 08:58	02/10/22 18:38	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**28.6**	%	0.10	1		02/03/22 10:44		

Sample: 2012415-05 **Lab ID: 30461753003** Collected: 01/28/22 18:10 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	83-32-9	
Acenaphthylene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	208-96-8	
Anthracene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	120-12-7	
Benzo(a)anthracene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	56-55-3	
Benzo(a)pyrene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	50-32-8	
Benzo(b)fluoranthene	**28.0**	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	191-24-2	
Benzo(k)fluoranthene	**28.1**	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	207-08-9	lp
Chrysene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	53-70-3	
Fluoranthene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	206-44-0	
Fluorene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	193-39-5	
Naphthalene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	91-20-3	
Phenanthrene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	85-01-8	
Pyrene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	80	%.	37-88	1	02/10/22 08:58	02/10/22 18:57	321-60-8	
Terphenyl-d14 (S)	81	%.	10-128	1	02/10/22 08:58	02/10/22 18:57	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**17.9**	%	0.10	1		02/03/22 10:44		

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ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-07 **Lab ID: 30461753004** Collected: 01/28/22 18:15 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	83-32-9	
Acenaphthylene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	208-96-8	
Anthracene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	120-12-7	
Benzo(a)anthracene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	56-55-3	
Benzo(a)pyrene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	50-32-8	
Benzo(b)fluoranthene	**39.2**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	191-24-2	
Benzo(k)fluoranthene	**39.3**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	207-08-9	lp
Chrysene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	53-70-3	
Fluoranthene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	206-44-0	
Fluorene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	193-39-5	
Naphthalene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	91-20-3	
Phenanthrene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	85-01-8	
Pyrene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	37-88	1	02/10/22 08:58	02/10/22 19:17	321-60-8	
Terphenyl-d14 (S)	78	%.	10-128	1	02/10/22 08:58	02/10/22 19:17	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**24.6**	%	0.10	1		02/03/22 10:44		

Sample: 2012415-09 **Lab ID: 30461753005** Collected: 01/28/22 18:20 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	83-32-9	
Acenaphthylene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	208-96-8	
Anthracene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	50-32-8	
Benzo(b)fluoranthene	**37.7**	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	191-24-2	
Benzo(k)fluoranthene	**37.8**	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	207-08-9	lp
Chrysene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	53-70-3	
Fluoranthene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	206-44-0	
Fluorene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	193-39-5	

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ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-09 **Lab ID: 30461753005** Collected: 01/28/22 18:20 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Naphthalene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	91-20-3	
Phenanthrene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	85-01-8	
Pyrene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	37-88	1	02/10/22 08:58	02/10/22 19:37	321-60-8	
Terphenyl-d14 (S)	78	%.	10-128	1	02/10/22 08:58	02/10/22 19:37	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**31.9**	%	0.10	1		02/03/22 10:44		

Sample: 2012415-11 **Lab ID: 30461753006** Collected: 01/28/22 18:25 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	83-32-9	
Acenaphthylene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	208-96-8	
Anthracene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	50-32-8	
Benzo(b)fluoranthene	**38.5**	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	191-24-2	
Benzo(k)fluoranthene	**38.6**	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	207-08-9	lp
Chrysene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	53-70-3	
Fluoranthene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	206-44-0	
Fluorene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	193-39-5	
Naphthalene	**15.2**	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	91-20-3	
Phenanthrene	**13.3**	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	85-01-8	
Pyrene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	74	%.	37-88	1	02/10/22 08:58	02/10/22 19:56	321-60-8	
Terphenyl-d14 (S)	71	%.	10-128	1	02/10/22 08:58	02/10/22 19:56	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**29.9**	%	0.10	1		02/03/22 10:44		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-13 **Lab ID: 30461753007** Collected: 01/28/22 18:30 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	83-32-9	
Acenaphthylene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	208-96-8	
Anthracene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	50-32-8	
Benzo(b)fluoranthene	**56.8**	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	191-24-2	
Benzo(k)fluoranthene	**56.9**	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	207-08-9	lp
Chrysene	**11.1**	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	53-70-3	
Fluoranthene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	206-44-0	
Fluorene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	193-39-5	
Naphthalene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	91-20-3	
Phenanthrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	85-01-8	
Pyrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	90	%.	37-88	1	02/10/22 08:58	02/10/22 20:16	321-60-8	ST
Terphenyl-d14 (S)	89	%.	10-128	1	02/10/22 08:58	02/10/22 20:16	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**29.0**	%	0.10	1		02/03/22 10:44		

Sample: 2012415-15 **Lab ID: 30461753008** Collected: 01/28/22 18:35 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	83-32-9	
Acenaphthylene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	208-96-8	
Anthracene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	50-32-8	IS
Benzo(b)fluoranthene	**76.7**	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	205-99-2	IS,lp
Benzo(g,h,i)perylene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	191-24-2	IS
Benzo(k)fluoranthene	**76.8**	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	207-08-9	IS,lp
Chrysene	**14.9**	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	53-70-3	IS
Fluoranthene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	206-44-0	
Fluorene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	193-39-5	IS

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ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-15 **Lab ID: 30461753008** Collected: 01/28/22 18:35 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Naphthalene	**26.2**	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	91-20-3	
Phenanthrene	**23.2**	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	85-01-8	
Pyrene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	103	%.	37-88	1	02/10/22 08:58	02/10/22 20:35	321-60-8	ST
Terphenyl-d14 (S)	97	%.	10-128	1	02/10/22 08:58	02/10/22 20:35	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**29.7**	%	0.10	1		02/03/22 10:44		

Sample: 2012415-17 **Lab ID: 30461753009** Collected: 01/28/22 18:40 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	83-32-9	
Acenaphthylene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	208-96-8	
Anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	50-32-8	
Benzo(b)fluoranthene	**79.0**	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	191-24-2	
Benzo(k)fluoranthene	**79.2**	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	207-08-9	lp
Chrysene	**12.8**	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	53-70-3	
Fluoranthene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	206-44-0	
Fluorene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	193-39-5	
Naphthalene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	91-20-3	
Phenanthrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	85-01-8	
Pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	81	%.	37-88	1	02/10/22 08:58	02/10/22 20:55	321-60-8	
Terphenyl-d14 (S)	79	%.	10-128	1	02/10/22 08:58	02/10/22 20:55	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**28.9**	%	0.10	1		02/03/22 10:44		

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ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-19 **Lab ID: 30461753010** Collected: 01/28/22 18:45 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	83-32-9	
Acenaphthylene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	208-96-8	
Anthracene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	50-32-8	
Benzo(b)fluoranthene	**42.1**	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	191-24-2	
Benzo(k)fluoranthene	**42.2**	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	207-08-9	lp
Chrysene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	53-70-3	
Fluoranthene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	206-44-0	
Fluorene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	193-39-5	
Naphthalene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	91-20-3	
Phenanthrene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	85-01-8	
Pyrene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	80	%.	37-88	1	02/10/22 08:58	02/10/22 21:15	321-60-8	
Terphenyl-d14 (S)	80	%.	10-128	1	02/10/22 08:58	02/10/22 21:15	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**26.1**	%	0.10	1		02/03/22 10:44		

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QUALITY CONTROL DATA

Project: 2012415
Pace Project No.: 30461753

QC Batch: 482841
QC Batch Method: EPA 3546
Analysis Method: EPA 8270D by SIM
Analysis Description: 8270D/3546 MSSV PAH by SIM
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461753001, 30461753002, 30461753003, 30461753004, 30461753005, 30461753006, 30461753007, 30461753008, 30461753009, 30461753010

METHOD BLANK: 2333958 Matrix: Solid
Associated Lab Samples: 30461753001, 30461753002, 30461753003, 30461753004, 30461753005, 30461753006, 30461753007, 30461753008, 30461753009, 30461753010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acenaphthene	ug/kg	ND	6.6	02/10/22 15:41	
Acenaphthylene	ug/kg	ND	6.6	02/10/22 15:41	
Anthracene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(a)anthracene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(a)pyrene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(b)fluoranthene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(g,h,i)perylene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(k)fluoranthene	ug/kg	ND	6.6	02/10/22 15:41	
Chrysene	ug/kg	ND	6.6	02/10/22 15:41	
Dibenz(a,h)anthracene	ug/kg	ND	6.6	02/10/22 15:41	
Fluoranthene	ug/kg	ND	6.6	02/10/22 15:41	
Fluorene	ug/kg	ND	6.6	02/10/22 15:41	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	6.6	02/10/22 15:41	
Naphthalene	ug/kg	ND	6.6	02/10/22 15:41	
Phenanthrene	ug/kg	ND	6.6	02/10/22 15:41	
Pyrene	ug/kg	ND	6.6	02/10/22 15:41	
2-Fluorobiphenyl (S)	%.	84	37-88	02/10/22 15:41	
Terphenyl-d14 (S)	%.	86	10-128	02/10/22 15:41	

LABORATORY CONTROL SAMPLE: 2333959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/kg	129	103	80	47-104	
Acenaphthylene	ug/kg	129	106	82	49-115	
Anthracene	ug/kg	129	108	84	52-115	
Benzo(a)anthracene	ug/kg	129	108	83	54-130	
Benzo(a)pyrene	ug/kg	129	111	86	59-126	
Benzo(b)fluoranthene	ug/kg	129	124	96	55-133	
Benzo(g,h,i)perylene	ug/kg	129	129	100	54-127	
Benzo(k)fluoranthene	ug/kg	129	122	94	56-120	
Chrysene	ug/kg	129	109	84	56-115	
Dibenz(a,h)anthracene	ug/kg	129	137	106	55-129	
Fluoranthene	ug/kg	129	115	89	56-125	
Fluorene	ug/kg	129	108	84	50-114	
Indeno(1,2,3-cd)pyrene	ug/kg	129	138	106	55-129	
Naphthalene	ug/kg	129	90.0	70	45-102	
Phenanthrene	ug/kg	129	108	84	50-110	

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QUALITY CONTROL DATA

Project: 2012415
Pace Project No.: 30461753

LABORATORY CONTROL SAMPLE: 2333959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Pyrene	ug/kg	129	114	89	56-122	
2-Fluorobiphenyl (S)	%.			76	37-88	
Terphenyl-d14 (S)	%.			78	10-128	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2333960 2333961

Parameter	Units	30461753001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acenaphthene	ug/kg	ND	170	170	140	146	82	86	24-109	4	20	
Acenaphthylene	ug/kg	ND	170	170	144	151	85	89	26-119	4	20	
Anthracene	ug/kg	ND	170	170	145	151	85	88	32-115	4	20	
Benzo(a)anthracene	ug/kg	ND	170	170	137	141	81	83	30-133	3	20	
Benzo(a)pyrene	ug/kg	ND	170	170	123	128	72	75	11-151	4	20	
Benzo(b)fluoranthene	ug/kg	45.2	170	170	194	204	88	93	25-140	5	20	
Benzo(g,h,i)perylene	ug/kg	ND	170	170	67.2	63.8	38	36	10-126	5	20	
Benzo(k)fluoranthene	ug/kg	45.3	170	170	172	185	75	82	25-127	7	20	
Chrysene	ug/kg	ND	170	170	139	143	77	80	10-142	3	20	
Dibenz(a,h)anthracene	ug/kg	ND	170	170	113	110	67	65	13-127	3	20	
Fluoranthene	ug/kg	ND	170	170	148	153	86	89	20-139	3	20	
Fluorene	ug/kg	ND	170	170	149	155	88	91	28-114	4	20	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	170	170	99.2	95.8	56	54	15-123	4	20	
Naphthalene	ug/kg	ND	170	170	121	123	70	71	15-104	2	20	
Phenanthrene	ug/kg	ND	170	170	148	152	84	87	10-135	3	20	
Pyrene	ug/kg	ND	170	170	146	150	86	88	13-139	3	20	
2-Fluorobiphenyl (S)	%.						80	81	37-88			
Terphenyl-d14 (S)	%.						79	81	10-128			

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QUALITY CONTROL DATA

Project: 2012415
Pace Project No.: 30461753

QC Batch: 481454
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461753001, 30461753002, 30461753003, 30461753004, 30461753005, 30461753006, 30461753007, 30461753008, 30461753009, 30461753010

SAMPLE DUPLICATE: 2326470

Parameter	Units	30461472001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	28.5	27.1	5	20	

SAMPLE DUPLICATE: 2326471

Parameter	Units	30461643001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	27.7	24.5	13	20	

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QUALIFIERS

Project: 2012415
Pace Project No.: 30461753

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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TNI - The NELAC Institute.

ANALYTE QUALIFIERS

IS	The internal standard response is below criteria. Results may be biased high.
Ip	Benzo(b)fluoranthene and benzo(k)fluoranthene were separated in the check standard but did not meet the resolution criteria specified in the test method. Sample results included are reported as individual isomers, but the lab and the client must recognize them as an isomeric pair.
ST	Surrogate recovery was above laboratory control limits. Results may be biased high.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2012415
Pace Project No.: 30461753

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30461753001	**2012415-01**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753002	**2012415-03**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753003	**2012415-05**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753004	**2012415-07**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753005	**2012415-09**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753006	**2012415-11**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753007	**2012415-13**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753008	**2012415-15**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753009	**2012415-17**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753010	**2012415-19**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753001	**2012415-01**	ASTM D2974-87	481454		
30461753002	**2012415-03**	ASTM D2974-87	481454		
30461753003	**2012415-05**	ASTM D2974-87	481454		
30461753004	**2012415-07**	ASTM D2974-87	481454		
30461753005	**2012415-09**	ASTM D2974-87	481454		
30461753006	**2012415-11**	ASTM D2974-87	481454		
30461753007	**2012415-13**	ASTM D2974-87	481454		
30461753008	**2012415-15**	ASTM D2974-87	481454		
30461753009	**2012415-17**	ASTM D2974-87	481454		
30461753010	**2012415-19**	ASTM D2974-87	481454		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SUBCONTRACT ORDER

Environmental Service Laboratories, Inc.

2012415

Please report all results to **reports@envlabs.com**. Contact E

WO# : 30461753

30461753

SENDING LABORATORY:

Environmental Service Laboratories, Inc.
1803 Philadelphia Street
Indiana, PA 15701
Phone: 724-463-8378
Fax: 724-465-4209
Project Manager: Lucas Winner

RECEIVING LABOR

Pace Analytical Servic
1638 Roseytown Road
Greensburg, PA 15601
Phone :(724) 850-5600
Fax: (724) 850-5601

State of Origin: PA

Analysis	Due	Expires	Comments
Sample ID: 2012415-01 **Sampled: 01/28/2022 18:00** **Sample Type: Grab** **Sampled By: Client** 001			
Matrix: Solid	02/10/2022 23:00	02/27/2022 18:00	
PAH SIMS			
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-03 **Sampled: 01/28/2022 18:05** **Sample Type: Grab** **Sampled By: Client** 002			
Matrix: Solid	02/10/2022 23:00	02/27/2022 18:05	
PAH SIMS			
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-05 **Sampled: 01/28/2022 18:10** **Sample Type: Grab** **Sampled By: Client** 003			
Matrix: Solid	02/10/2022 23:00	02/27/2022 18:10	
PAH SIMS			
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-07 **Sampled: 01/28/2022 18:15** **Sample Type: Grab** **Sampled By: Client** 004			
Matrix: Solid	02/10/2022 23:00	02/27/2022 18:15	
PAH SIMS			
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-09 **Sampled: 01/28/2022 18:20** **Sample Type: Grab** **Sampled By: Client** 005			
Matrix: Solid	02/10/2022 23:00	02/27/2022 18:20	
PAH SIMS			
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-11 **Sampled: 01/28/2022 18:25** **Sample Type: Grab** **Sampled By: Client** 006			
Matrix: Solid	02/10/2022 23:00	02/27/2022 18:25	
PAH SIMS			
Containers Supplied:			
Glass Jar, 8 oz. (A)			

Released By 1/31/22 Date — Received By Bill Graham 2/1/22 1125 Date

Released By Bill Graham 2/1/22 1530 Date — Received By [illegible] 2/1/22 15:30 Date

SUBCONTRACT ORDER

Environmental Service Laboratories, Inc.

2012415

Please report all results to **reports@envlabs.com**. Contact ESL with any questions.

Analysis	Due	Expires	Comments
Sample ID: 2012415-13 **Matrix: Solid** **Sampled: 01/28/2022 18:30** **Sample Type: Grab** **Sampled By: Client** 007			
PAH SIMS	02/10/2022 23:00	02/27/2022 18:30	
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-15 **Matrix: Solid** **Sampled: 01/28/2022 18:35** **Sample Type: Grab** **Sampled By: Client** 008			
PAH SIMS	02/10/2022 23:00	02/27/2022 18:35	
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-17 **Matrix: Solid** **Sampled: 01/28/2022 18:40** **Sample Type: Grab** **Sampled By: Client** 009			
PAH SIMS	02/10/2022 23:00	02/27/2022 18:40	
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-19 **Matrix: Solid** **Sampled: 01/28/2022 18:45** **Sample Type: Grab** **Sampled By: Client** 010			
PAH SIMS	02/10/2022 23:00	02/27/2022 18:45	
Containers Supplied:			
Glass Jar, 8 oz. (A)			

WO# : 30461753
PM: MAR Due Date: 02/15/22
CLIENT: ESL

Released By	1/31/22 Date	Received By	2/1/22 1125 Date
Released By	2/1/22 1530 Date	Received By	2/1/22 1530 Date

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: ESL Project #

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other

Label AF
LIMS Login VPINE

Tracking #: N/A

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☑ no

Thermometer Used AF Type of Ice: (Wet) Blue None

Cooler Temperature Observed Temp 3.4 °C Correction Factor: (0.0) °C Final Temp: 3.4 °C

Temp should be above freezing to 6°C

WO#: 30461753
PM: MAR Due Date: 02/10/22
CLIENT: ESL

Comments:	Yes	No	N/A	pH paper Lot# N/A	Date and Initials of person examining contents: 02/10/22 AF
Chain of Custody Present:	X			1.	
Chain of Custody Filled Out:		X		2. no preservation listed	
Chain of Custody Relinquished:	X			3.	
Sampler Name & Signature on COC:	X	X		4. AF	
Sample Labels match COC: -Includes date/time/ID Matrix: SL	X			5.	
Samples Arrived within Hold Time:	X			6.	
Short Hold Time Analysis (<72hr remaining):		X		7.	
Rush Turn Around Time Requested:		X		8.	
Sufficient Volume:	X			9.	
Correct Containers Used:	X			10.	
-Pace Containers Used:		X			
Containers Intact:	X			11.	
Orthophosphate field filtered			X	12.	
Hex Cr Aqueous sample field filtered			X	13.	
Organic Samples checked for dechlorination:			X	14.	
Filtered volume received for Dissolved tests			X	15.	
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix			X	16.	
All containers meet method preservation requirements.	X			Initial when completed AF	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			X	17.	
Trip Blank Present:		X		18.	
Trip Blank Custody Seals Present			X		
Rad Samples Screened < 0.5 mrem/hr			X	Initial when completed:	Date: Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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09 March 2022

Moody & Associates, Inc. (Washington Office)
Attn: Katie Sasala
1720 Washington Road
Washington, PA 15301

Work Order: 2022298
Project: 22-004-KS Speece Sampling

Report of Analysis

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received	Sample Notes
SO-02	2022298-01	Solid	02/25/2022 00:00	2/28/22 15:20	

Report Narrative

The results contained in this report are only representative of the samples received. Environmental Service Laboratories, Inc. is not responsible for use or interpretation of the data included herein.

Definitions

RL Reporting Limit

Certifications

Analyses performed by Environmental Service Laboratories, Inc., Indiana PA unless otherwise specified.

Approved By

Alicia N Johnston

Alicia Johnston
Project Manager

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 03/09/2022 17:15

Lab Sample ID#: 2022298-01
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-02

Sample Date: 02/25/2022 00:00
Receipt Date: 02/28/2022 15:20

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	2.86	mg/L		2.00	TLL	03/08/22 15:56	03/08/22 15:56

ENVIRONMENTAL SERVICE LABORATORIES, INC.
1803 Philadelphia St. | 1276 [illegible] | [illegible]enue
Indiana PA 17701
P: 724-[illegible]02
F: 724-4[illegible]57

2022298

SAMPLE REQUEST & CHAIN OF CUSTODY

RUSH!

RUSH

Chain of Custody
(Updated July 2016)

Sample Identification	2022298 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
SO-02	01	2/25/2022		G	SO	1	1 - 16 oz glass jar	None	Chloride SPLP

Sample Type:	Matrix:	Container Type:	
G = Grab	**AQ** = Water	**P** = Plastic	**Other:** list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Marisa Michalski 2/25/22 08:00

Sampled By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Marisa Michalski	2/25/22 08:00	Tom McCloskey	2/28/22 08:00
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Tom McCloskey	2/28/22 11:55	Amanda Shay (04247) 2-28-22	11:55
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
(04247)	2/28/22 1330		2/28/22 1330

LAB USE ONLY

Correct Preservations Y / N / NA Correct Containers Y / N / NA Receipt Temperature _____

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301
(724) 746-5200

Sampler: Marisa Michalski and ~~Adam Cutlip~~

Project #:	22-004-KS
Project Name:	Speece Sampling
Project Manager:	Katie Sasala
Invoice to:	Bill Directly to SWN c/o Joshua Boyda

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE RECEIPT AND REVIEW FORM

Client: Moody	Work Orc 2022298

PART A: GENERAL INFORMATION- SATELLITE LABORATORY

Received by/Lab ID: 04247	**Date/Time Received:** 2/28/22 11:55
Method of Delivery: (Client Drop-Off) ESL Courier Other: _____	**Received on Ice?** (YES) NO
Sample Receipt Temperature: 11.2 °C	**IR Gun ID:** #7
Containers Removed by Satellite Lab for Analysis of: FECAL TC/EC TC MPN EC MPN TC/EC MPN (N/A)	

PART B: GENERAL INFORMATION- INDIANA LABORATORY

Received by/Lab ID: [illegible]	**Samples Received on Ice?** (YES) NO
Date/Time Received: 2/28 [illegible] 1520	**Date Sampled:** 2/25 [illegible]
Method of Delivery: FedEx UPS Client Drop off ~~ESL courier~~ Other: _____	
Sample Receipt Temperature: 4.5 °C	**IR Gun ID:** 3
Sample State of Collection: (PA) NY OH WV Other: ____	**PWSID Compliance Drinking Water Samples:** YES (NO)

PART C: Receipt Details

Completed (if different from above): _____ / / _____
Signature Date Time

Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)
Chain of custody documents included with samples?	(YES) NO	Comments:
COC form is properly signed in relinquished/received sections?	(YES) NO	Comments:
Sample containers intact and sealed?	(YES) NO	Circle Applicable: Damaged Container Leaking Container Custody Seal Broken Other: _____
Number of containers received matches number indicated on COC?	(YES) NO	Sample IDs and Containers Affected:
Sample IDs on COC match IDs on bottles?	(YES) NO	Sample IDs and Containers Affected:
Date and time on COC match date and time on bottles?	(YES) NO	Sample IDs and Containers Affected:
Samples received within holding time?	(YES) NO	Sample IDs and Containers Affected:
Samples received at appropriate pH for analysis requested?	(YES) NO	Sample IDs and Containers Affected and Observed pH:
Samples requiring thermal preservation within 0 ≤ 6°C? Microbiology within 0 ≤ 10°C?	(YES) NO	For non-WV samples outside of thermal preservation range sampled same day and received on ice are considered acceptable as long as the cooling process has begun.
Adequate sample volume received?	(YES) NO	Analyses Affected:
VOA vials free of headspace (defined as < 6 mm bubble)?	YES (NO)	Sample IDs and Containers Affected:
Other Comments:		**Deficiency Log Created:** YES (NO)

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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18 April 2022

Moody & Associates, Inc. (Washington Office)
Attn: Joshua Boyda
1720 Washington Road
Washington, PA 15301

Work Order: 2040865
Project: SWN WV Thurman Spece Stream Sampling

Report of Analysis

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received	Sample Notes
SW-01	2040865-01	Water	04/08/2022 16:25	04/11/2022 16:10	
SW-02	2040865-02	Water	04/08/2022 16:22	04/11/2022 16:10	
SW-03	2040865-03	Water	04/08/2022 15:37	04/11/2022 16:10	
SW-04	2040865-04	Water	04/08/2022 17:02	04/11/2022 16:10	
SW-05	2040865-05	Water	04/08/2022 17:18	04/11/2022 16:10	

Report Narrative

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Definitions

RL Reporting Limit
CFU Colony Forming Units

Certifications

Analyses performed by Environmental Service Laboratories, Inc., Indiana PA unless otherwise specified.

Environmental Service Laboratories, Inc., Indiana, West Virginia DEP Certificate # 392

Approved By

Alicia N Johnston

Alicia Johnston
Project Manager

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 04/18/2022 14:19

Lab Sample ID#: 2040865-01
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-01

Sample Date: 04/08/2022 16:25
Receipt Date: 04/11/2022 16:10

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	7.05	mg/L		0.303	2.00	EPA300.0 2.1	TLL	04/14/22 22:00

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 04/18/2022 14:19

Lab Sample ID#: 2040865-02
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-02

Sample Date: 04/08/2022 16:22
Receipt Date: 04/11/2022 16:10

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	65.3	mg/L		0.303	2.00	EPA300.0 2.1	TLL	04/14/22 22:20

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 04/18/2022 14:19

Lab Sample ID#: 2040865-03
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-03

Sample Date: 04/08/2022 15:37
Receipt Date: 04/11/2022 16:10

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	7.41	mg/L		0.303	2.00	EPA300.0 2.1	TLL	04/14/22 22:40

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 04/18/2022 14:19

Lab Sample ID#: 2040865-04
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-04

Sample Date: 04/08/2022 17:02
Receipt Date: 04/11/2022 16:10

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	135	mg/L		1.52	10.0	EPA300.0 2.1	TLL	04/17/22 19:25

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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Indiana, PA 15701
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PADEP: 63-04247

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F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 04/18/2022 14:19

Lab Sample ID#: 2040865-05
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-05

Sample Date: 04/08/2022 17:18
Receipt Date: 04/11/2022 16:10

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	166	mg/L		1.52	10.0	EPA300.0 2.1	TLL	04/17/22 19:45

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE REQUEST & CHAIN OF CUSTOD

2040865

HEADQUARTERS
1803 Philadelphia St.
Indiana, PA 15701
(724) 463-TEST
FAX: (724) 465-4209
☐

SOUTHERN DIVISION
1276 Bentleyville Road
Van Voorhis, PA 15366
(724) 258-TEST
FAX: (724) 258-8376
☒

NORTHERN DIVISION
435 Broad Street
Montoursville, PA 17754
(570) 321-9003
FAX: (570) 321-1957
☐

NORTHWEST DIVISION
950 Main Street
Sharpsville, PA 16150
(724) 463-TEST
FAX: (724) 465-4209
☐

Requested TAT:
Rush _____ days ☒x
Standard ☐

FOR INTERNAL LABORATORY USE ONLY

Sample Identification	ESL# 2041865	Sample Type: Composite Date on/off	Composite Time on/off	Grab Date	Grab Time	Matrix	# of Containers	Container Type / Preservative	Analysis Requested
SW-01	01			4-8-22	16:25	W	1	Poly 1000 mL	Chloride
SW-02	02			4-8-22	16:22	W	1	Poly 1000 mL	Chloride
SW-03	03			4-8-22	15:37	W	1	Poly 1000 mL	Chloride
SW-04	04			4-8-22	17:02	W	1	Poly 1000 mL	Chloride
SW-05	05			4-8-22	17:18	W	1	Poly 1000 mL	Chloride

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Tom McLaughlin	4-8-22 16:00		
Sampled By: (Signature)	Date/ Time		
Tom McLaughlin	4-11-22 11:34	Amanda Shuy	4-11-22 11:34
Relinquished By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
Amanda Shuy	4-11-22 12:30	Amanda Shuy (04247)	4-11-22 12:30
Relinquished By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
(04247)	4/11/22 1436		4/11/22 1436
Relinquished By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
	4/11/22 1610		4/11/22 1610

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

Project Notes:

Thurman Spece Stream Sampling (WV)

Please direct bill SWN (Josh Boyda)

Company/Name:	**Moody & Associates (Washington, PA)**
Address:	1720 Washington Road, Suite 100
	Washington, PA 15301
Contact Person:	Katie Sasala
Phone Number:	724-749-4606
Email Address:	Ksasala@moody-s.com
State of Collection:	WV

Moody Project No.: 22-002-KS

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE RECEIPT AND REVIEW FORM

Client: Moody	Work Ord 2040865

PART A: GENERAL INFORMATION- SATELLITE LABORATORY

Received by/Lab ID: 04247	Date/Time Received: 4/11/22 1230
Method of Delivery: Client Drop-Off (ESL Courier) Other: _____	Received on Ice? (YES) NO
Sample Receipt Temperature: _____ °C	IR Gun ID: #7
Containers Removed by Satellite Lab for Analysis of: FECAL TC/EC TC MPN EC MPN TC/EC MPN (N/A)	

PART B: GENERAL INFORMATION- INDIANA LABORATORY

Received by/Lab ID: INDIANA	Samples Received on Ice? (YES) NO
Date/Time Received: 4/11 MV 1610	Date Sampled: 4/8 MV
Method of Delivery: FedEx UPS Client Drop off ~~ESL courier~~ Other: _____	
Sample Receipt Temperature: 4.7 °C	IR Gun ID: 3
Sample State of Collection: PA NY OH (WV) Other: _____	PWSID Compliance Drinking Water Samples: YES (NO)

PART C: Receipt Details

Completed (if different from above): _____ (Signature) / / (Date) _____ (Time)

Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)
Chain of custody documents included with samples?	(YES) NO	Comments:
COC form is properly signed in relinquished/received sections?	(YES) NO	Comments:
Sample containers intact and sealed?	(YES) NO	Circle Applicable: Damaged Container Leaking Container Custody Seal Broken Other: _____
Number of containers received matches number indicated on COC?	(YES) NO	Sample IDs and Containers Affected:
Sample IDs on COC match IDs on bottles?	(YES) NO	Sample IDs and Containers Affected:
Date and time on COC match date and time on bottles?	(YES) NO	Sample IDs and Containers Affected:
Samples received within holding time?	(YES) NO	Sample IDs and Containers Affected:
Samples received at appropriate pH for analysis requested?	(YES) NO	Sample IDs and Containers Affected and Observed pH:
Samples requiring thermal preservation within 0 ≤ 6°C? Microbiology within 0 ≤ 10°C?	(YES) NO	For non-WV samples outside of thermal preservation range sampled same day and received on ice are considered acceptable as long as the cooling process has begun.
Adequate sample volume received?	(YES) NO	Analyses Affected:
VOA vials free of headspace (defined as < 6 mm bubble)?	YES (NO)	Sample IDs and Containers Affected:
Other Comments:		**Deficiency Log Created:** YES (NO)

Groundwater and Environmental Professionals Since 1891

Moody AND ASSOCIATES, INC.

April 27, 2022

Mr. Joshua Boyda
Senior Environmental Specialist
Southwestern Energy
1300 Fort Pierpont Drive
Suite 201
Morgantown, WV 26508

Re: ***Summary of Investigative Findings***
Thurman Speece Well Pad
Buffalo District, Brooke County, West Virginia

Dear Mr. Boyda:

Moody and Associates, Inc. (Moody) was retained by SWN Production Company, LLC (SWN) to conduct soil and water quality screening and sampling at the Thurman Speece well pad, located at 1242 Lazear Wilhelm Road, Wellsburg, West Virginia (*Figure 1*). The delineation and characterization efforts were conducted in response to a produced fluid release originating from a leaking valve on the GPU associated with Thurman Speece BRK 205H well. Approximately five barrels of produced fluid were reportedly released onto the pad surface on January 2, 2022, and the produced fluid migrated into the well pad drainage system along the northern and eastern edges of the well pad. The produced fluid migrated through the pad's underground drain system to an open drain located approximately 130 feet away from the leaking GPU valve. SWN representatives reported that the pad drains were promptly closed following the incident, however the drain was not functioning properly and allowed for the discharge of stormwater and produced fluids off pad. Therefore, interceptor trenches were immediately hand dug to limit the horizontal migration of the fluid. PVC caps were then glued onto the drain discharge pipe to stop the

flow of all fluids from the pad drain. These caps remained in place for the entire duration of the remediation to prevent potential off-site migration of contaminants. The constituents of concern (COCs) at the well pad consist of parameters associated with produced fluids, listed in *Table 1*.

Soil Screening and Sampling

During the period of January 3, 2022 through January 28, 2022, Moody mobilized to the site to delineate and characterize the extent of impacts from the release of produced fluid. Remediation was hindered by inclement weather and access issues due to buried utilities. Moody provided oversight for the excavation and removal of impacted materials using a Spectrum *Field Scout EC* meter to measure levels of soil conductivity. Moody relied on field screening measurements of elevated soil conductivity, visual and olfactory observations, as well as characterization and attainment sampling results to verify the lateral and vertical extents of impacted material on and off the well pad. A mini excavator, skid loader, and hand tools were used to excavate and remove impacted materials from both impacted areas on and off the well pad.

From January 10, 2022 through January 12, 2022, Moody delineated the impacted area located off the well pad (*Figure 2*) and directed excavation of impacted soils. The final excavation measured approximately 5,800 square feet with a maximum depth of approximately 34 inches. A grid-based field screening of soil conductivity at 42 locations was performed within the remediated area located off the well pad (*Table 2*). Moody collected 10 attainment soil samples from the remediated area using a random-grid sampling method. In addition to the attainment samples, Moody collected 10 background reference samples from locations upgradient of the remediated area, which were representative of the same soil type and not impacted by the release. The laboratory results for the off-pad attainment and reference soil samples are summarized on *Tables 3* and *4*, respectively, and the laboratory analytical reports are provided in *Appendix A*.

Between January 13, 2022 and January 27, 2022, Moody delineated the impacted area along the northern and eastern portions of the on-pad drainage system and directed removal of impacted soils from these areas (*Figure 3*). The final excavation measured approximately 3,300 square feet with a maximum depth of approximately 42 inches.

Following remediation activities, Moody conducted grid-based field screening of the soil conductivity at 28 locations within the on-pad area of remediation (*Table 5*). Moody collected 10 attainment soil samples from the remediated area of the well pad. In addition, 10 background reference samples were collected from an area on the well pad that was representative of the well pad material and was not impacted by the release. The laboratory results for the attainment and reference soil samples collected on the pad are summarized in *Tables 6* and *7*, respectively, and the laboratory analytical reports are provided in *Appendix A*.

Moody returned to the site on February 25, 2022, to collect an additional sample at SO-02 for synthetic precipitation leaching procedure analysis of chloride after laboratory analytical results indicated an elevated concentration of chloride at this location (1,260 mg/kg). The results, discussed in further detail below, indicate that soils at that location do not present the potential to impact surface water and/or groundwater.

All samples were properly preserved and submitted to Environmental Services Laboratories (ESL) in Indiana, Pennsylvania, for the analysis of produced fluid-related constituents.

Water Quality Screening and Sampling

Moody established surface water screening and sampling locations (SW-01 through SW-05) within an unnamed tributary to Stotts Run located south of the well pad drain (*Figure 1*). A temporary monitoring location was established at the well pad drain (SW-06) where the produced fluid migrated off the well pad. During the period of January 3, 2022 through April 8, 2022, Moody conducted twelve rounds of water quality screening at locations SW-01 through SW-05, and five rounds of water quality screening at SW-06, in order to monitor specific conductance and chloride (*Table 8* through *Table 13*).

Water quality samples were collected on January 3, 2022 at all surface water locations, and again on February 23, 2022 and April 8, 2022 at locations SW-01 through SW-05. The temporary monitoring location SW-06 was removed prior to February 23, 2022 due to remedial efforts on the well pad.

The water quality samples were properly preserved and submitted to ESL for analysis. The samples collected in January and February were analyzed for the constituents listed on *Table 1*. Because no elevated concentrations of volatile organic compounds (VOCs) and/or polycyclic aromatic hydrocarbons (PAHs) were identified during these sampling events, the samples collected in April were analyzed for chloride only. All field screening data and laboratory analytical data for the surface water locations are summarized in *Tables 8* through *13*, and the laboratory analytical results are included in *Appendix A*.

Discussion of Results

The laboratory analytical results for soil were conservatively evaluated in the context of the West Virginia Department of Environmental Protection (WVDEP) De Minimis standards based on residential use. Because there is currently no De Minimis standard for chloride in soil, concentrations were compared to the Soil Action Level established under the West Virginia Corrective Action Guidance Document (CAGD) for Leaking Aboveground Storage Tanks (ASTs) and Underground Storage Tanks (USTs).

All chloride concentrations measured in the attainment soil samples collected from the area off the well pad were below the Soil Action Level of 1,000 mg/kg, with the exception of SO-02 (1,260 mg/kg). However, the SPLP chloride concentration at that location (2.86 mg/L), is well below the US EPA secondary maximum contaminant level (SMCL) of 250 mg/L in groundwater. In addition, no VOCs or PAHs were detected in any of the attainment soil samples collected off of the well pad. The chloride concentrations for all of the background samples collected for the off-pad area were below the Soil Action Level of 1,000 mg/kg and no VOCs or PAHs were detected in any of the background soil samples.

All laboratory analyzed chloride concentrations for the soil attainment samples collected from the on-pad area were below the Soil Action Level of 1,000 mg/kg. In addition, all chloride SPLP concentrations were below the SMCL of 250 mg/L. The laboratory analytical results indicate that trace amounts of VOCs and PAHs were detected in the attainment soil samples and the background samples associated with the well pad. However, all VOC and PAH concentrations in these samples were below their respective De Minimis standards.

The laboratory analytical results for surface water were evaluated in the context of the West Virginia Surface Water Standards. Trace amounts of VOCs were detected at SW-06, located at the well pad drain; however, no VOCs were detected at any of the surface water monitoring points located off-pad. In addition, no PAHs were detected in any of the water quality samples collected at the Site. Immediately following the release, elevated chloride concentrations were measured at surface water locations SW-02, SW-04, SW-05, and SW-06. Specific conductance and chloride concentrations continued to substantially decrease in SW-02, SW-04, and SW-05 following the removal of impacted material from the Site (see *Figure 4*).

A temporary increase in chloride concentration was observed at SW-04 and SW-05 during the April 6, 2022 monitoring event. It should be noted that this monitoring occurred during a significant precipitation event resulting in approximately 1.4 inches of rain (KWVBETHA1). Because elevated chloride concentrations were observed, soil and water quality screening proximal to SW-05 were conducted on April 7, 2022. Soil conductivities in the area between the off-pad remediation and SW-05 were all measured to be less than 2 mS/cm, and no evidence of a residual contamination source was identified. Additionally, the chloride concentration at SW-05 had decreased significantly from the measurements obtained during the April 6, 2022 monitoring event, and was below the West Virginia surface water standard of 230 mg/L for chronic exposure for aquatic life.

Confirmation water quality samples were collected on April 8, 2022 at surface water locations SW-01 through SW-05. Chloride concentrations at all locations were below the West Virginia surface water standards.

Conclusions

Laboratory analysis of the confirmatory soil samples indicate that the impacted soils have been successfully remediated. All VOCs and PAHs analyzed were either not detected or present at levels well below their respective WVDEP De Minimis screening criteria. Chloride concentrations at all but one soil sampling location were below the alternative Soil of Action Level of 1,000 mg/kg; the SPLP chloride concentration at that location was well below the US EPA SMCL of 250 mg/L.

Based on laboratory results, chloride concentrations immediately downgradient of the confluence of the unnamed tributary and Stotts Run (SW-01) are comparable to the concentrations measured upgradient of this confluence (SW-03). As previously noted, significant decreases in chloride concentration were observed at SW-02, SW-04, and SW-05 after the conclusion of remediation efforts. In addition, chloride concentrations analyzed in the confirmatory water quality samples were below applicable West Virginia surface water standards for aquatic life.

If you have any questions or need additional information regarding the information provided in this report, please call our office at (724) 746-5200.

Sincerely,
MOODY AND ASSOCIATES, INC.

Jona Stoskey
Geoscientist III

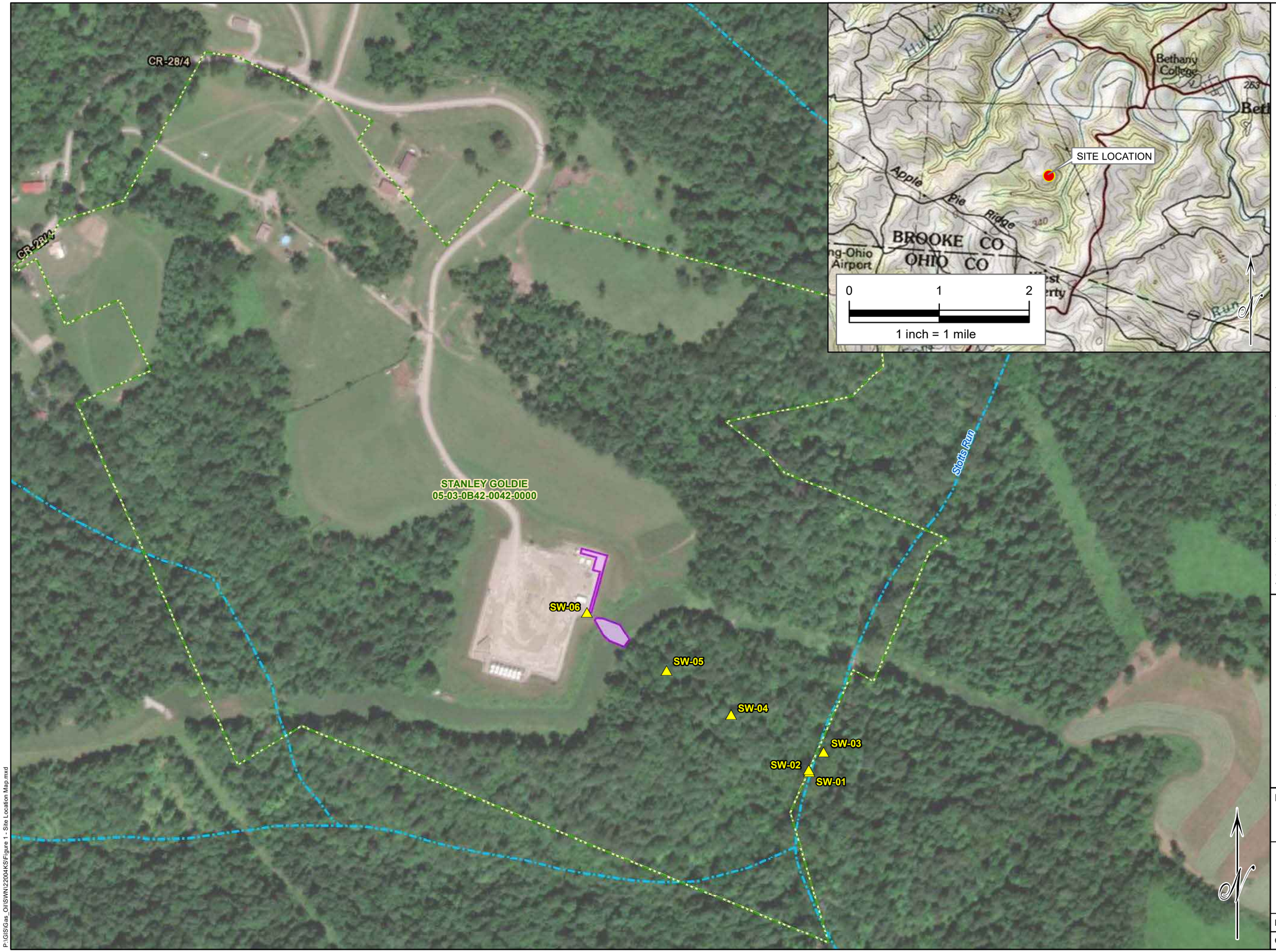


Jessie Bobrzynski, PG, LRS
Senior Geologist

Attachments:

Figure 1: Site Location Map
Figure 2: Soil Screening and Sampling Locations Map – Off Pad Area
Figure 3: Soil Screening and Sampling Locations Map – On Pad Area
Figure 4: Field Conductivity Concentrations
Table 1: List of Sampling Parameters
Table 2: Summary of Soil Screening Results – Off Pad Area
Table 3: Summary of Attainment Soil Sampling Results – Off Pad Area
Table 4: Summary of Background Soil Sampling Results – Off Pad Area
Table 5: Summary of Soil Screening Results – On Pad Area
Table 6: Summary of Attainment Soil Sampling Results – On Pad Area
Table 7: Summary of Background Soil Sampling Results – On Pad Area
Table 8: Summary of SW-01 Water Quality Monitoring and Sampling Results
Table 9: Summary of SW-02 Water Quality Monitoring and Sampling Results
Table 10: Summary of SW-03 Water Quality Monitoring and Sampling Results
Table 11: Summary of SW-04 Water Quality Monitoring and Sampling Results
Table 12: Summary of SW-05 Water Quality Monitoring and Sampling Results
Table 13: Summary of SW-06 Water Quality Monitoring and Sampling Results
Appendix A: Laboratory Analytical Reports

FIGURES



LEGEND

- Thurman Speece Gas Well Pad
- Surface Water Screening and Sampling Locations
- Remediated Area
- Parcel Boundary
- Streams

Scale:

0 — 310 — 620

1 inch = 300 feet

Map References:

- Site boundaries and surface water sampling locations collected and analyzed by Moody and Associates, Inc.
- Parcel boundary retrieved from WVGIS Technical Center. Brooke County Parcels Q2 2021.
- 7½- minute quadrangle: Bethany, WV
- Base topography retrieved from WVGIS Technical Center. 10 ft. interval contours.
- Base inset topography retrieved from ESRI online database. USA Topo Maps.
- Base aerial imagery retrieved from ESRI online database. World Imagery with World Transportation overlay.

Notes:

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FIGURE 1:
SITE LOCATION MAP

Thurman Speece Well Pad

Buffalo District,
Brooke County, WV

Project #: 22-004-KS

Prepared for : SWN Production Company

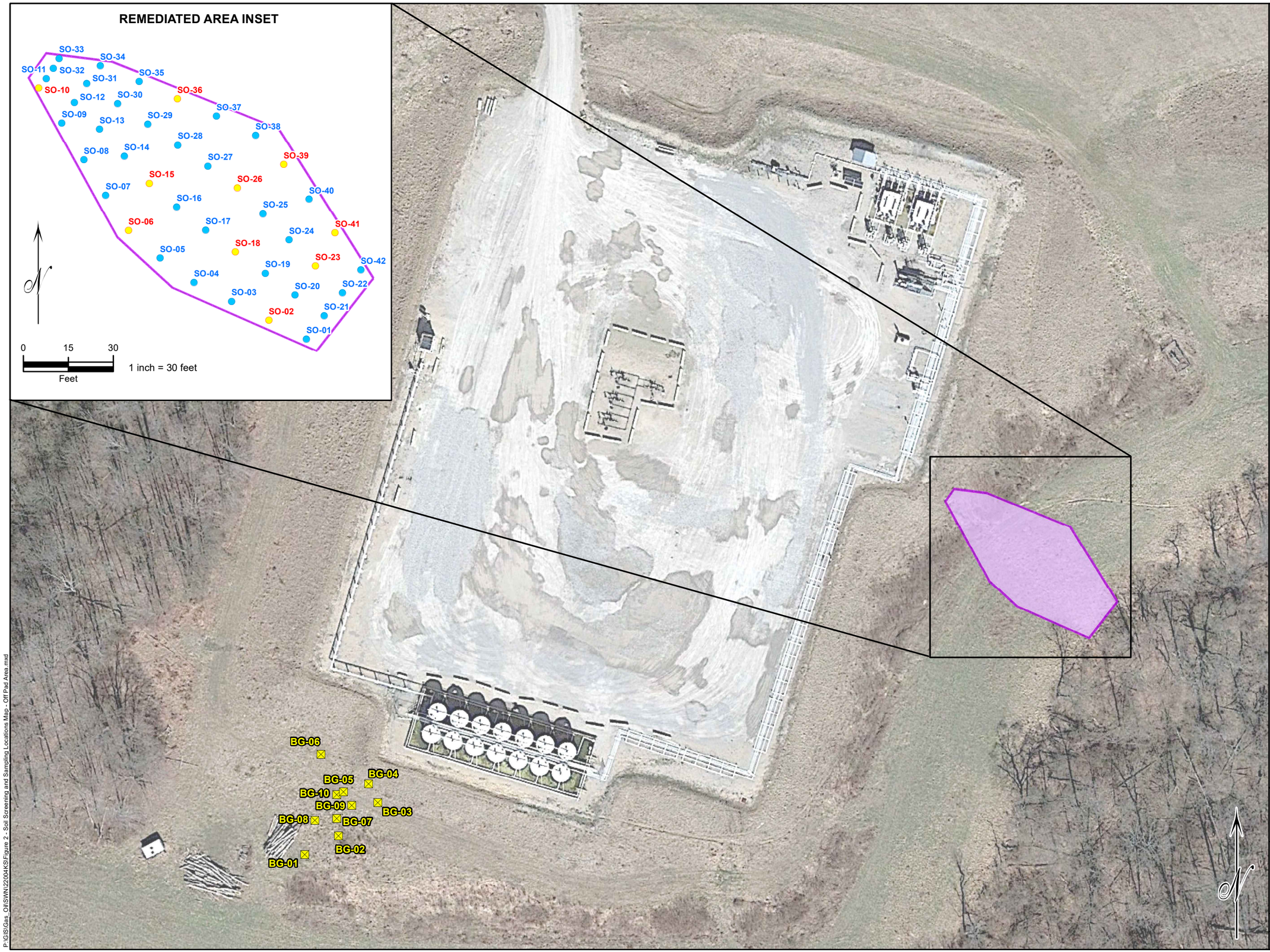
1720 Washington Rd.
Suite 100
Washington, PA 15301
Office: (724) 746-5200
Fax: (724) 746-5603
www.moody-s.com

Moody and Associates, Inc.

Drawn by:	MPS	Date:	3/18/22
Checked by:	JLB	Revision:	

P:\GIS\Gas_Oil\SWN\22004KS\Figure 1 - Site Location Map.mxd

REMEDIATED AREA INSET



LEGEND

- Soil Sampling Locations
- Soil Screening Locations
- Background Soil Sampling Locations
- Off Pad Remediated Area

Scale:

0 60 120

1 inch = 60 feet

Map References:

- Soil screening and sampling locations and background soil sampling locations collected and analyzed by Moody and Associates, Inc.
- Remediated area drawn in by Moody and Associates, Inc. based on collected field data.
- 7½- minute quadrangle: Bethany, WV
- Base aerial imagery referenced in by Moody and Associates, Inc via Google Earth. Date of imagery: 3/21/2021

Notes:

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FIGURE 2:

SOIL SCREENING AND SAMPLING LOCATIONS MAP - OFF PAD AREA

Thurman Speece Well Pad

Buffalo District,
Brooke County, WV

Project #: 22-004-KS

Prepared for : SWN Production Company™

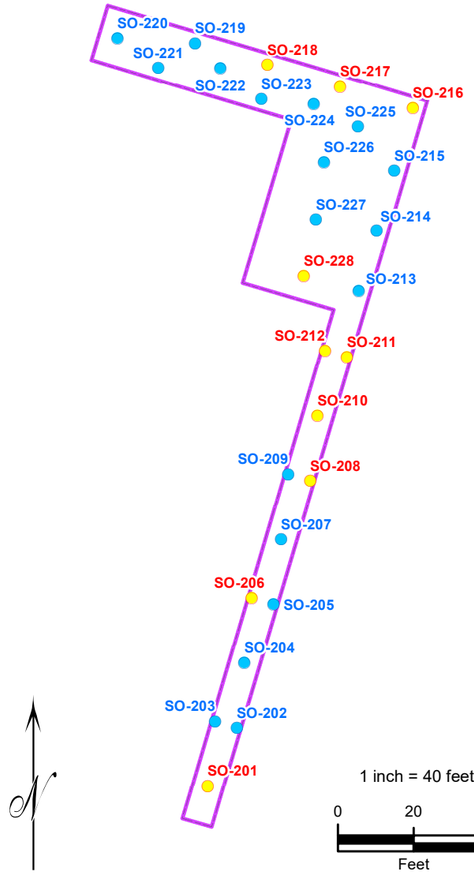
1720 Washington Rd.
Suite 100
Washington, PA 15301
Office: (724) 746-5200
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Moody and Associates, Inc.

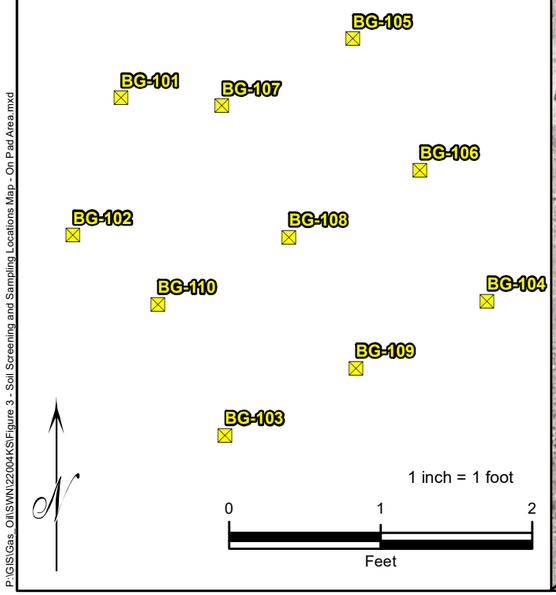
Drawn by:	MPS	Date:	3/16/2022
Checked by:	JLB	Revision:	

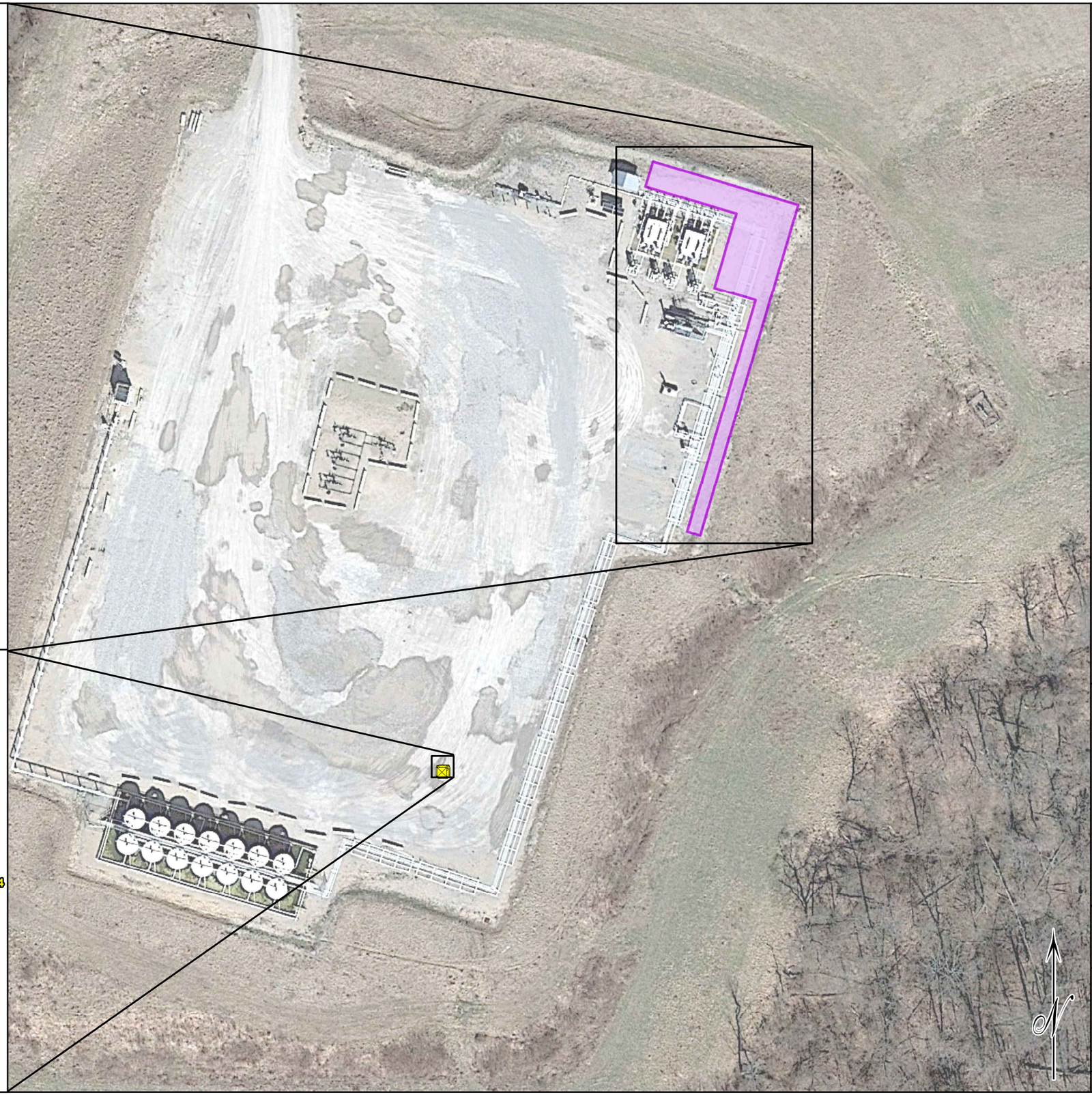
P:\GIS\Gas_Oil\SWN\22004KS\Figure 2 - Soil Screening and Sampling Locations Map - Off Pad Area.mxd

REMEDIATED AREA INSET



BACKGROUND SOIL SAMPLING INSET





LEGEND

- Soil Sampling Locations
- Soil Screening Locations
- Background Soil Sampling Locations
- On Pad Remediated Area

Scale:

0 60 120

1 inch = 60 feet

Map References:

- Soil screening and sampling locations collected and analyzed by Moody and Associates, Inc.
- Remediated area drawn in by Moody and Associates, Inc. based on collected field data.
- 7½- minute quadrangle: Bethany, WV
- Base aerial imagery referenced in by Moody and Associates, Inc via Google Earth. Date of imagery: 3/21/2021

Notes:

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FIGURE 3:
SOIL SCREENING AND SAMPLING LOCATIONS MAP - ON PAD AREA

Thurman Speece Well Pad

Buffalo District,
Brooke County, WV

Project #: 22-004-KS

Prepared for : SWN Production Company™

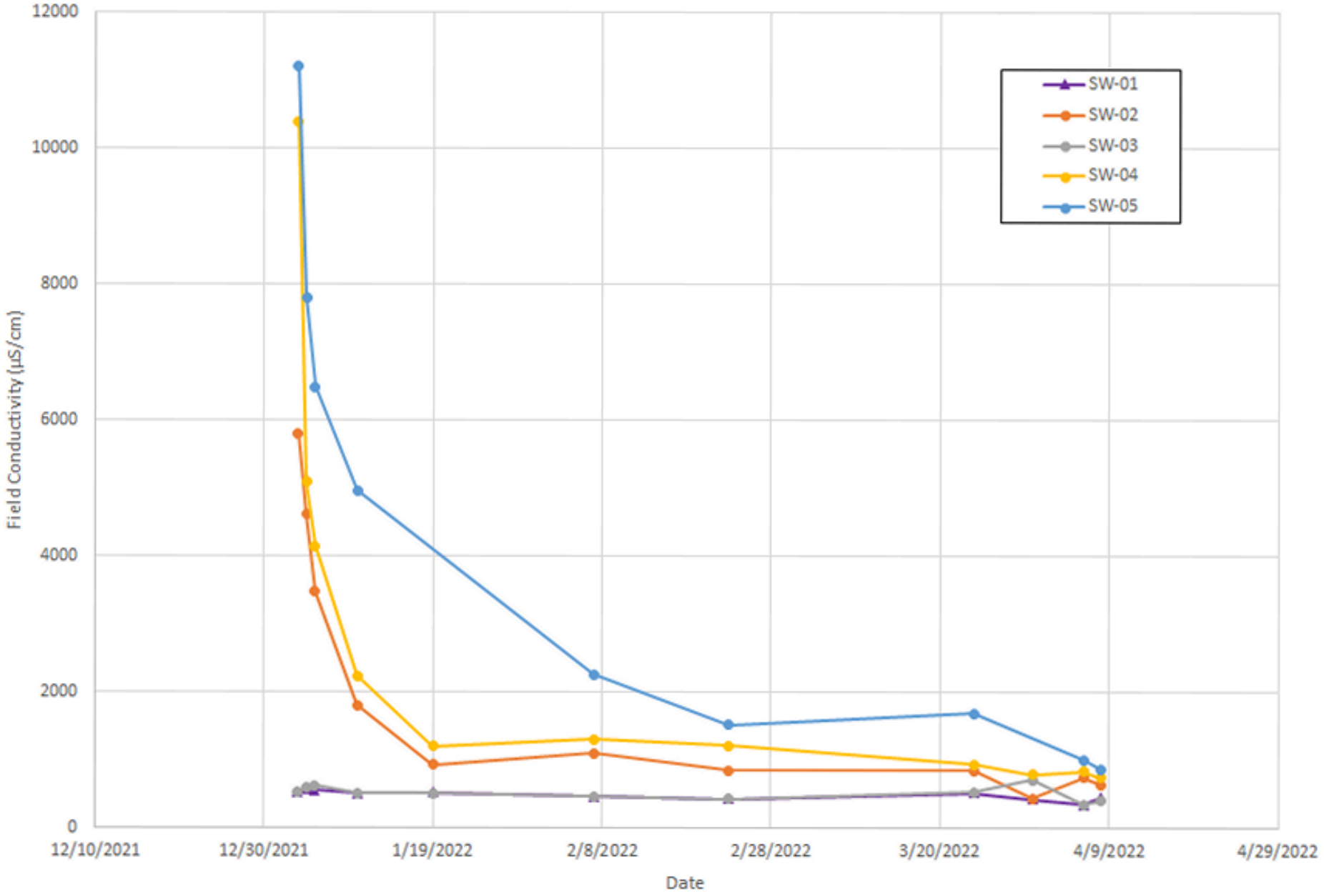
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Moody and Associates, Inc.

Drawn by:	MPS	Date:	3/16/2022
Checked by:	JLB	Revision:	

P:\GIS\Gas_Oil\SWN\22004KS\Figure 3 - Soil Screening and Sampling Locations Map - On Pad Area.mxd

Figure 4
Field Conductivity Concentrations



TABLES

Table 1
List of Sampling Parameters
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

Parameters
General Chemistry
Chloride
Volatile Organic Compounds
Benzene
Toluene
Ethylbenzene
m,p-Xylenes
o-Xylene
Xylenes (Total)
Polycyclic Aromatic Hydrocarbons
Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Chrysene
Dibenz(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene

Table 2

Summary of Soil Screening Results - Off Pad Area

Thurman Speece Well Pad

SWN Production Company, LLC

Buffalo District, Brooke County, West Virginia

Screening Location	Conductivity (mS/cm)	Sample ID/ Laboratory ID
SO-01	0.02	
SO-02	0.07	SO-02/2011184-10
SO-03	0.28	
SO-04	0.69	
SO-05	0.57	
SO-06	0.15	SO-06/2011184-01
SO-07	0.12	
SO-08	0.09	
SO-09	0.41	
SO-10	0.13	SO-10/2011184-04
SO-11	0.11	
SO-12	0.47	
SO-13	0.33	
SO-14	0.39	
SO-15	0.27	SO-15/2011184-02
SO-16	0.45	
SO-17	0.46	
SO-18	0.45	SO-18/2011184-08
SO-19	0.85	
SO-20	2.4	
SO-21	1.66	
SO-22	12.99	
SO-23	1.01	SO-23/2011184-03
SO-24	1.17	
SO-25	1.97	
SO-26	1.64	SO-26/2011184-06
SO-27	0.84	
SO-28	0.12	
SO-29	0.22	
SO-30	0.52	

Screening Location	Conductivity (mS/cm)	Sample ID/ Laboratory ID
SO-31	0.46	
SO-32	0.09	
SO-33	1.49	
SO-34	0.09	
SO-35	0.21	
SO-36	0.17	SO-36/2011184-07
SO-37	0.36	
SO-38	0.52	
SO-39	0.17	SO-39/2011184-09
SO-40	2.03	
SO-41	0.19	SO-41/2011184-05
SO-42	0.57	

Notes:

mS/cm: millisiemens per centimeter

Table 3
Summary of Attainment Soil Sampling Results - Off Pad Area
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SAMPLE/LABORATORY ID											Soil Screening Criteria (1)	Soil Action Levels 2
		SO-02	SO-02	SO-06	SO-10	SO-15	SO-18	SO-23	SO-26	SO-36	SO-39	SO-41		
		2011184-10	2022298-01	2011184-01	2011184-04	2011184-02	2011184-08	2011184-03	2011184-06	2011184-07	2011184-09	2011184-05		
		1/12/2022	2/25/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022		
General Chemistry	**Units**													
Chloride	mg/kg	**1,260**	---	481	252	153	173	541	523	53.0	192	75.3	NA	1,000
Chloride SPLP	mg/L	---	2.86	---	---	---	---	---	---	---	---	---	250 3	NA
% Solids	%	71.0	---	81.6	83.1	79.7	82.7	76.0	78.0	80.3	77.6	77.2	NA	NA
Volatile Organic Compounds	**Units**													
Benzene	mg/kg	< 0.256	---	< 0.201	< 0.198	< 0.192	< 0.184	< 0.201	< 0.221	< 0.214	< 0.220	< 0.238	1.2	0.130
Toluene	mg/kg	< 0.256	---	< 0.201	< 0.198	< 0.192	< 0.184	< 0.201	< 0.221	< 0.214	< 0.220	< 0.238	820	44
Ethylbenzene	mg/kg	< 0.256	---	< 0.201	< 0.198	< 0.192	< 0.184	< 0.201	< 0.221	< 0.214	< 0.220	< 0.238	6.2	2.0
m,p-Xylenes	mg/kg	< 0.512	---	< 0.402	< 0.396	< 0.385	< 0.368	< 0.402	< 0.441	< 0.427	< 0.439	< 0.476	NA	NA
o-Xylene	mg/kg	< 0.256	---	< 0.201	< 0.198	< 0.192	< 0.184	< 0.201	< 0.221	< 0.214	< 0.220	< 0.238	NA	NA
Xylenes (Total)	mg/kg	< 0.256	---	< 0.201	< 0.198	< 0.192	< 0.184	< 0.201	< 0.221	< 0.214	< 0.220	< 0.238	260	5.2
Polycyclic Aromatic Hydrocarbons	**Units**													
Acenaphthene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	4,100	4,100
Acenaphthylene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	4,200	4,200
Anthracene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	23,000	23,000
Benzo(a)anthracene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	1.5	1
Benzo(a)pyrene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	0.11	1
Benzo(b)fluoranthene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	1.1	1
Benzo(g,h,i)perylene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	1,800	1,800
Benzo(k)fluoranthene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	11	1
Chrysene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	110	1
Dibenz(a,h)anthracene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	0.11	1
Fluoranthene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	2,400	2,400
Fluorene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	2,900	2,900
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	1.1	1
Naphthalene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	2.4	4.1
Phenanthrene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	23,000	23,000
Pyrene	mg/kg	< 0.0927	---	< 0.0812	< 0.0844	< 0.0862	< 0.0798	< 0.0086	< 0.0844	< 0.0811	< 0.0861	< 0.0886	2,300	2,300

Notes:

(1) Values obtained fro the WVDEP De Minimus Table for residential soil

(2) Value reflects Tier 1 Soil Action Level obtained from Table 5 of the West Virginia CAGD for Leaking ASTs and USTs

(3) There are no WV De Minimus standards or USEPA Regional Screening levels available for chloride, therefore the chloride SPLP value was compared to the secondary maximumm contaminant level of 250 mg/L in groundwater

Table 4
Summary of Background Soil Sampling Results - Off Pad Area
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SAMPLE/LABORATORY ID										Soil Screening Criteria (1)	Soil Action Levels 2
		BG-01	BG-02	BG-03	BG-04	BG-05	BG-06	BG-07	BG-08	BG-09	BG-10		
		2011183-01	2011183-02	2011183-03	2011183-04	2011183-05	2011183-06	2011183-07	2011183-08	2011183-09	2011183-10		
		1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022	1/12/2022		
General Chemistry	**Units**												
Chloride	mg/kg	83.7	245	323	96.0	706	847	74.7	38.2	175	156	NA	1,000
% Solids	%	69.3	70.6	63.4	73.4	76.6	72.9	57.6	63.0	62.4	65.9	NA	NA
Volatile Organic Compounds	**Units**												
Benzene	mg/kg	< 0.192	< 0.171	< 0.176	< 0.172	< 0.159	< 0.189	< 0.151	< 0.194	< 0.143	< 0.135	1.2	0.130
Toluene	mg/kg	< 0.192	< 0.171	< 0.176	< 0.172	< 0.159	< 0.189	< 0.151	< 0.194	< 0.143	< 0.135	820	44
Ethylbenzene	mg/kg	< 0.192	< 0.171	< 0.176	< 0.172	< 0.159	< 0.189	< 0.151	< 0.194	< 0.143	< 0.135	6.2	2.0
m,p-Xylenes	mg/kg	< 0.383	< 0.342	< 0.351	< 0.344	< 0.317	< 0.378	< 0.302	< 0.388	< 0.287	< 0.270	NA	NA
o-Xylene	mg/kg	< 0.192	< 0.171	< 0.176	< 0.172	< 0.159	< 0.189	< 0.151	< 0.194	< 0.143	< 0.135	NA	NA
Xylenes (Total)	mg/kg	< 0.192	< 0.171	< 0.176	< 0.172	< 0.159	< 0.189	< 0.151	< 0.194	< 0.143	< 0.135	260	5.2
Polycyclic Aromatic Hydrocarbons	**Units**												
Acenaphthene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	4,100	4,100
Acenaphthylene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	4,200	4,200
Anthracene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	23,000	23,000
Benzo(a)anthracene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	1.5	1
Benzo(a)pyrene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	0.11	1
Benzo(b)fluoranthene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	1.1	1
Benzo(g,h,i)perylene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	1,800	1,800
Benzo(k)fluoranthene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	11	1
Chrysene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	110	1
Dibenz(a,h)anthracene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	0.11	1
Fluoranthene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	2,400	2,400
Fluorene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	2,900	2,900
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	1.1	1
Naphthalene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	2.4	4.1
Phenanthrene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	23,000	23,000
Pyrene	mg/kg	< 0.0954	< 0.0978	< 0.103	< 0.0913	< 0.0854	< 0.0987	< 0.113	< 0.107	< 0.109	< 0.101	2,300	2,300

Notes:

(1) Values obtained fro the WVDEP De Minimus Table for residential soil

(2) Value reflects Tier 1 Soil Action Level obtained from Table 5 of the West Virginia CAGD for Leaking ASTs and USTs

(3) There are no WV De Minimus standards or USEPA Regional Screening levels available for chloride, therefore the chloride SPLP value was compared to the secondary maximumm contaminant level of 250 mg/L in groundwater

Table 5

Summary of Soil Screening Results - On Pad Area

Thurman Speece Well Pad

SWN Production Company, LLC

Buffalo District, Brooke County, West Virginia

Screening Location	Conductivity (mS/cm)	Sample ID/ Laboratory ID
SO-201	0.16	SO-201 / 2012410-01
SO-202	0.39	
SO-203	0.42	
SO-204	0.25	
SO-205	0.26	
SO-206	0.26	SO-206 / 2012410-03
SO-207	0.12	
SO-208	0.37	SO-208 / 2012410-05
SO-209	0.55	
SO-210	1.01	SO-210 / 2012410-07
SO-211	0.03	SO-211 / 2012410-09
SO-212	0.13	SO-212 / 2012410-11
SO-213	0.02	
SO-214	0.11	
SO-215	0.02	
SO-216	0.02	SO-216 / 2012410-13
SO-217	0.02	SO-217 / 2012410-15
SO-218	0.02	SO-218 / 2012410-17
SO-219	1.03	
SO-220	0.2	
SO-221	0.09	
SO-222	0.11	
SO-223	0.36	
SO-224	0.48	
SO-225	0.52	
SO-226	0.46	
SO-227	0.19	
SO-228	0.32	SO-228 / 2012410-19

Notes:

mS/cm: millisiemens per centimeter

Table 6
Summary of Attainment Soil Sampling Results - On Pad Area
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SAMPLE/LABORATORY ID										Soil Screening Criteria (1)	Soil Action Levels 2
		SO-201	SO-206	SO-208	SO-210	SO-211	SO-212	SO-216	SO-217	SO-218	SO-228		
		2012410-01	2012410-03	2012410-05	2012410-07	2012410-09	2012410-11	2012410-13	2012410-15	2012410-17	2012410-19		
		1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022		
General Chemistry	**Units**												
Chloride	mg/kg	51.0	39.0	111	193	93.0	167	19.3	811	104	51.5	NA	1,000
Chloride SPLP	mg/L	0.417	1.29	1.76	3.26	1.29	1.03	1.26	0.846	0.942	0.984	250 3	NA
% Solids	%	80.2	83.4	70.2	68.9	66.9	74.8	74.5	70.5	75.2	68.5	NA	NA
Volatile Organic Compounds	**Units**												
Benzene	mg/kg	< 0.200	< 0.189	< 0.244	< 0.276	< 0.297	< 0.222	< 0.316	< 0.271	< 0.288	< 0.263	1.2	0.130
Toluene	mg/kg	< 0.200	< 0.189	< 0.244	< 0.276	< 0.297	< 0.222	< 0.316	< 0.271	< 0.288	< 0.263	820	44
Ethylbenzene	mg/kg	< 0.200	< 0.189	< 0.244	< 0.276	< 0.297	< 0.222	< 0.316	< 0.271	< 0.288	< 0.263	6.2	2.0
m,p-Xylenes	mg/kg	< 0.400	< 0.378	< 0.489	< 0.553	< 0.594	< 0.443	< 0.632	< 0.542	< 0.577	< 0.527	NA	NA
o-Xylene	mg/kg	< 0.200	< 0.189	< 0.244	< 0.276	< 0.297	< 0.222	< 0.316	< 0.271	< 0.288	< 0.263	NA	NA
Xylenes (Total)	mg/kg	< 0.200	< 0.189	< 0.244	< 0.276	< 0.297	< 0.222	< 0.316	< 0.271	< 0.288	< 0.263	260	5.2
Polycyclic Aromatic Hydrocarbons	**Units**												
Acenaphthene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	< 0.0089	< 0.0088	< 0.0092	4,100	4,100
Acenaphthylene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	< 0.0089	< 0.0088	< 0.0092	4,200	4,200
Anthracene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	< 0.0089	0.0118	< 0.0092	23,000	23,000
Benzo(a)anthracene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	0.0173	0.0296	0.102	< 0.0092	1.5	1
Benzo(a)pyrene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	< 0.0089	0.0570	< 0.0092	0.11	1
Benzo(b)fluoranthene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	0.0266	0.122	0.197	0.424	0.0907	1.1	1
Benzo(g,h,i)perylene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	0.0094	0.0232	< 0.0092	1,800	1,800
Benzo(k)fluoranthene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	0.0267	0.122	0.197	0.425	0.0909	11	1
Chrysene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	0.0844	0.142	0.294	0.0403	110	1
Dibenz(a,h)anthracene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	< 0.0089	0.0167	< 0.0092	0.11	1
Fluoranthene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	0.0416	0.0859	0.205	0.0124	2,400	2,400
Fluorene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	< 0.0089	< 0.0088	< 0.0092	2,900	2,900
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	< 0.0096	0.0102	0.0249	< 0.0092	1.1	1
Naphthalene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	0.0187	0.0160	0.852	0.0121	2.4	4.1
Phenanthrene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	0.0916	0.393	1.310	0.0286	23,000	23,000
Pyrene	mg/kg	< 0.0079	< 0.0083	< 0.0094	< 0.0102	< 0.0099	< 0.0087	0.0418	0.0878	0.620	0.0135	2,300	2,300

Notes:

(1) Values obtained fro the WVDEP De Minimus Table for residential soil

(2) Value reflects Tier 1 Soil Action Level obtained from Table 5 of the West Virginia CAGD for Leaking ASTs and USTs

(3) There are no WV De Minimus standards or USEPA Regional Screening levels available for chloride, therefore the chloride SPLP value was compared to the secondary maximumm contaminant level of 250 mg/L in groundwater

Table 7
Summary of Background Soil Sampling Results - On Pad Area
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SAMPLE/LABORATORY ID										Soil Screening Criteria (1)	Soil Action Levels 2
		BG-01	BG-02	BG-03	BG-04	BG-05	BG-06	BG-07	BG-08	BG-09	BG-10		
		2012415-01	2012415-03	2012415-05	2012415-07	2012415-09	2012415-11	2012415-13	2012415-15	2012415-17	2012415-19		
		1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022	1/28/2022		
General Chemistry	**Units**												
Chloride	mg/kg	58.0	11.2	45.7	42.4	16.1	13.9	16.4	32.3	39.8	15.0	NA	1,000
Chloride SPLP	mg/L	3.42	1.02	2.76	1.98	2.22	5.61	1.31	22.5	2.55	2.25	250 3	NA
% Solids	%	75.0	68.0	75.8	71.1	67.8	68.2	71.0	68.9	69.5	71.8	NA	NA
Volatile Organic Compounds	**Units**												
Benzene	mg/kg	< 0.258	< 0.305	< 0.250	< 0.273	< 0.350	< 0.324	< 0.336	< 0.320	< 0.311	< 0.293	1.2	0.130
Toluene	mg/kg	< 0.258	< 0.305	< 0.250	< 0.273	< 0.350	< 0.324	< 0.336	< 0.320	< 0.311	< 0.293	820	44
Ethylbenzene	mg/kg	< 0.258	< 0.305	< 0.250	< 0.273	< 0.350	< 0.324	< 0.336	< 0.320	< 0.311	< 0.293	6.2	2.0
m,p-Xylenes	mg/kg	< 0.516	< 0.610	< 0.500	< 0.545	< 0.701	< 0.648	< 0.672	< 0.639	< 0.623	< 0.587	NA	NA
o-Xylene	mg/kg	< 0.258	< 0.305	< 0.250	< 0.273	< 0.350	< 0.324	< 0.336	< 0.320	< 0.311	< 0.293	NA	NA
Xylenes (Total)	mg/kg	< 0.258	< 0.305	< 0.250	< 0.273	< 0.350	< 0.324	< 0.336	< 0.320	< 0.311	< 0.293	260	5.2
Polycyclic Aromatic Hydrocarbons	**Units**												
Acenaphthene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	4,100	4,100
Acenaphthylene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	4,200	4,200
Anthracene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	23,000	23,000
Benzo(a)anthracene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	1.5	1
Benzo(a)pyrene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	0.11	1
Benzo(b)fluoranthene	mg/kg	0.0452	0.0538	0.0280	0.0392	0.0377	0.0385	0.0564	0.0767	0.0790	0.0421	1.1	1
Benzo(g,h,i)perylene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	1,800	1,800
Benzo(k)fluoranthene	mg/kg	0.0453	0.0539	0.0281	0.0393	0.0378	0.0386	0.0569	0.0768	0.0792	0.0422	11	1
Chrysene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	0.0111	0.0149	0.0128	< 0.0090	110	1
Dibenz(a,h)anthracene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	0.11	1
Fluoranthene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	2,400	2,400
Fluorene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	2,900	2,900
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	1.1	1
Naphthalene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	0.0152	< 0.0094	0.0262	< 0.0092	< 0.0090	2.4	4.1
Phenanthrene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	0.0133	< 0.0094	0.0232	< 0.0092	< 0.0090	23,000	23,000
Pyrene	mg/kg	< 0.0085	< 0.0092	< 0.0080	< 0.0089	< 0.0098	< 0.0095	< 0.0094	< 0.0093	< 0.0092	< 0.0090	2,300	2,300

Notes:

(1) Values obtained fro the WVDEP De Minimus Table for residential soil

(2) Value reflects Tier 1 Soil Action Level obtained from Table 5 of the West Virginia CAGD for Leaking ASTs and USTs

(3) There are no WV De Minimus standards or USEPA Regional Screening levels available for chloride, therefore the chloride SPLP value was compared to the secondary maximumm contaminant level of 250 mg/L in groundwater

Table 8
Summary of SW-01 Water Quality Monitoring and Sampling Results
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SW-01												Aquatic Life *				Human Health *		All Other Uses *
														B1,B4		B2		B2		
		1/3/2022	1/4/2022	1/5/2022	1/10/2022	1/19/2022	2/7/2022	2/23/2022	3/18/2022	3/24/2022	3/31/2022	4/6/2022	4/8/2022	Acute[1]	Chronic[2]	Acute[1]	Chronic[2]	C[3]	A[4]	
Field Parameters	**Units**																			
Temperature	**(°C)**	8.62	9.03	9.08	3.22	4.94	4.11	6.82	---	13.39	16.86	9.31	16.53	NA	NA	NA	NA	NA	NA	NA
pH	**(SU)**	6.77	6.68	7.22	7.78	7.30	8.09	8.06	---	7.63	7.65	7.98	6.77	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0
ORP	**(mV)**	265	525	318	109	108	173	84	---	258	52	191	338	NA	NA	NA	NA	NA	NA	NA
Specific Conductance	**(µS/cm)**	532	579	552	515	517	463	434	---	525	434	353	459	NA	NA	NA	NA	NA	NA	NA
Turbidity	**(NTU)**	0.0	0.0	0.0	15.5	N/A	0.0	0.0	---	15.1	1.4	---	---	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	**(mg/L)**	340	370	354	329	331	301	282	---	336	282	229	299	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	**(mg/L)**	8.30	8.46	8.35	12.65	10.70	12.49	9.53	---	9.52	10.20	6.00	9.66	NA	NA	NA	NA	NA	NA	NA
Chloride	**(mg/L)**	81	< 32	< 32	---	---	28	< 28	< 29	< 29	40	< 29	34	860	230	860	230	250	250	NA
General Chemistry	**Units**																			
Chloride	**(mg/L)**	37.4	---	---	---	---	---	8.1	---	---	---	---	7.05	860	230	860	230	250	250	NA
Volatile Organic Compounds	**Units**																			
Benzene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.410	---	---	---	---	---	NA	NA	NA	NA	51	0.66	NA
Toluene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.370	---	---	---	---	---	NA	NA	NA	NA	200,000	6,800	NA
Ethylbenzene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.420	---	---	---	---	---	NA	NA	NA	NA	29,000	3,100	NA
m,p-Xylenes	**(µg/L)**	< 2.0	---	---	---	---	---	< 1.05	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
o-Xylene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.450	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Xylenes (Total)	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.450	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons	**Units**																			
Acenaphthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	990	670	NA
Acenaphthylene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	40,000	8,300	NA
Benzo(a)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(a)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(b)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(g,h,i)perylene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Chrysene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Dibenz(a,h)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	370	300	NA
Fluorene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	5,300	1,100	NA
Indeno(1,2,3-cd)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Naphthalene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Pyrene	**(mg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	4,000	830	NA

Notes:

*: West Virginia Surface Water Standards obtained from 47CSR2 - Appendix E, Table 1
B1: Warm water fishery use subcategory of Aquatic life use category
B2: Trout waters use subcategory of Aquatic life use category
B4: Wetlands use subcategory of Aquatic life use category
C: Water contact recreation use subcategory of Human health use category
A: Public water use subcategory of Human health use category
1: One hour average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
2: Four-day average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
3: These criteria have been calculated to protect human health from toxic effects through fish consumption, unless otherwise noted
4: These criteria have been calculated to protect human health from toxic and/or organoleptic effects through drinking water and fish consumption, unless otherwise noted
5: Criteria based on a surface water hardness value of 100 mg/L CaCO3

°C: degrees Celsius
mV: millivolts
NA: not applicable
NTU: nephelometric turbidity units
ORP: oxidation-reduction potential
SMCL: secondary maximum contaminant level
SU: standard pH units
µS/cm: microsiemens per centimeter
---: not measured

Table 9
Summary of SW-02 Water Quality Monitoring and Sampling Results
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SW-02												Aquatic Life *				Human Health *		All Other Uses *
														B1,B4		B2		B2		
		1/3/2022	1/4/2022	1/5/2022	1/10/2022	1/19/2022	2/7/2022	2/23/2022	3/18/2022	3/24/2022	3/31/2022	4/6/2022	4/8/2022	Acute[1]	Chronic[2]	Acute[1]	Chronic[2]	C[3]	A[4]	
Field Parameters	**Units**																			
Temperature	**(°C)**	7.92	8.33	8.34	7.16	7.94	5.42	6.21	---	13.42	16.13	9.90	15.98	NA	NA	NA	NA	NA	NA	NA
pH	**(SU)**	7.26	6.97	7.39	7.12	7.01	7.71	7.88	---	7.73	8.02	7.80	7.31	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0
ORP	**(mV)**	273	315	332	127	129	174	101	---	262	56	203	266	NA	NA	NA	NA	NA	NA	NA
Specific Conductance	**(µS/cm)**	5,810	4,610	3,480	1,810	928	1,100	854	---	857	444	745	649	NA	NA	NA	NA	NA	NA	NA
Turbidity	**(NTU)**	0.0	8.7	2.7	10.2	N/A	0.0	26.9	---	120.0	0.0	---	---	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	**(mg/L)**	3,660	2,950	2,230	1,160	594	705	546	---	549	289	477	416	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	**(mg/L)**	8.17	8.67	8.10	13.66	29.54	4.47	9.99	---	9.23	9.10	7.86	9.70	NA	NA	NA	NA	NA	NA	NA
Chloride	**(mg/L)**	**424**	**667**	**612**	**---**	**---**	190	98	70	61	54	< 29	61	860	230	860	230	250	250	NA
General Chemistry	**Units**																			
Chloride	**(mg/L)**	**1,620**	**---**	**---**	**---**	**---**	**---**	118	**---**	**---**	**---**	**---**	65.3	860	230	860	230	250	250	NA
Volatile Organic Compounds	**Units**																			
Benzene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.410	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	51	0.66	NA
Toluene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.370	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	200,000	6,800	NA
Ethylbenzene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.420	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	29,000	3,100	NA
m,p-Xylenes	**(µg/L)**	< 2.0	**---**	**---**	**---**	**---**	**---**	< 1.05	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
o-Xylene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.450	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Xylenes (Total)	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.450	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons	**Units**																			
Acenaphthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	990	670	NA
Acenaphthylene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Anthracene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	40,000	8,300	NA
Benzo(a)anthracene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(a)pyrene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(b)fluoranthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(g,h,i)perylene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Chrysene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Dibenz(a,h)anthracene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Fluoranthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	370	300	NA
Fluorene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	5,300	1,100	NA
Indeno(1,2,3-cd)pyrene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Naphthalene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Pyrene	**(mg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	4,000	830	NA

Notes:

*: West Virginia Surface Water Standards obtained from 47CSR2 - Appendix E, Table 1
B1: Warm water fishery use subcategory of Aquatic life use category
B2: Trout waters use subcategory of Aquatic life use category
B4: Wetlands use subcategory of Aquatic life use category
C: Water contact recreation use subcategory of Human health use category
A: Public water use subcategory of Human health use category
1: One hour average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
2: Four-day average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
3: These criteria have been calculated to protect human health from toxic effects through fish consumption, unless otherwise noted
4: These criteria have been calculated to protect human health from toxic and/or organoleptic effects through drinking water and fish consumption, unless otherwise noted

5: Criteria based on a surface water hardness value of 100 mg/L CaCO3

°C: degrees Celsius
mV: millivolts
NA: not applicable
NTU: nephelometric turbidity units
ORP: oxidation-reduction potential
SMCL: secondary maximum contaminant level
SU: standard pH units
µS/cm: microsiemens per centimeter
---: not measured

Table 10
Summary of SW-03 Water Quality Monitoring and Sampling Results
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SW-03												Aquatic Life *				Human Health *		All Other Uses *
														B1,B4		B2		B2		
		1/3/2022	1/4/2022	1/5/2022	1/10/2022	1/19/2022	2/7/2022	2/23/2022	3/18/2022	3/24/2022	3/31/2022	4/6/2022	4/8/2022	Acute[1]	Chronic[2]	Acute[1]	Chronic[2]	C[3]	A[4]	
Field Parameters	**Units**																			
Temperature	**(°C)**	4.83	6.30	6.54	2.11	3.85	6.03	5.90	---	13.54	16.70	9.72	15.43	NA	NA	NA	NA	NA	NA	NA
pH	**(SU)**	8.04	7.71	7.93	7.64	7.40	8.42	8.06	---	8.02	8.06	7.93	7.34	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0
ORP	**(mV)**	245	256	293	124	91	130	107	---	250	60	124	259	NA	NA	NA	NA	NA	NA	NA
Specific Conductance	**(µS/cm)**	533	607	623	515	513	460	428	---	532	711	356	405	NA	NA	NA	NA	NA	NA	NA
Turbidity	**(NTU)**	0.0	0.0	1.1	8.7	N/A	0.0	0.0	---	42.6	17.8	---	---	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	**(mg/L)**	341	389	394	330	328	300	278	---	341	455	232	263	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	**(mg/L)**	8.96	8.39	8.64	10.37	11.53	12.58	9.20	---	10.02	8.31	5.75	7.95	NA	NA	NA	NA	NA	NA	NA
Chloride	**(mg/L)**	91	< 32	< 32	---	---	< 28	< 28	< 29	< 29	< 29	< 29	< 29	860	230	860	230	250	250	NA
General Chemistry	**Units**																			
Chloride	**(mg/L)**	8.58	---	---	---	---	---	8.70	---	---	---	---	7.41	860	230	860	230	250	250	NA
Volatile Organic Compounds	**Units**																			
Benzene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.410	---	---	---	---	---	NA	NA	NA	NA	51	0.66	NA
Toluene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.370	---	---	---	---	---	NA	NA	NA	NA	200,000	6,800	NA
Ethylbenzene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.420	---	---	---	---	---	NA	NA	NA	NA	29,000	3,100	NA
m,p-Xylenes	**(µg/L)**	< 2.0	---	---	---	---	---	< 1.05	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
o-Xylene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.450	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Xylenes (Total)	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.450	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons	**Units**																			
Acenaphthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	990	670	NA
Acenaphthylene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	40,000	8,300	NA
Benzo(a)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(a)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(b)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(g,h,i)perylene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Chrysene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Dibenz(a,h)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	370	300	NA
Fluorene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	5,300	1,100	NA
Indeno(1,2,3-cd)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Naphthalene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Pyrene	**(mg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---	---	---	---	NA	NA	NA	NA	4,000	830	NA

Notes:

*: West Virginia Surface Water Standards obtained from 47CSR2 - Appendix E, Table 1
B1: Warm water fishery use subcategory of Aquatic life use category
B2: Trout waters use subcategory of Aquatic life use category
B4: Wetlands use subcategory of Aquatic life use category
C: Water contact recreation use subcategory of Human health use category
A: Public water use subcategory of Human health use category
1: One hour average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
2: Four-day average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
3: These criteria have been calculated to protect human health from toxic effects through fish consumption, unless otherwise noted
4: These criteria have been calculated to protect human health from toxic and/or organoleptic effects through drinking water and fish consumption, unless otherwise noted
5: Criteria based on a surface water hardness value of 100 mg/L CaCO3

°C: degrees Celsius
mV: millivolts
NA: not applicable
NTU: nephelometric turbidity units
ORP: oxidation-reduction potential
SMCL: secondary maximum contaminant level
SU: standard pH units
µS/cm: microsiemens per centimeter
---: not measured

Table 11
Summary of SW-04 Water Quality Monitoring and Sampling Results
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SW-04												Aquatic Life *				Human Health *		All Other Uses *
														B1,B4		B2		B2		
		1/3/2022	1/4/2022	1/5/2022	1/10/2022	1/19/2022	2/7/2022	2/23/2022	3/18/2022	3/24/2022	3/31/2022	4/6/2022	4/8/2022	Acute[1]	Chronic[2]	Acute[1]	Chronic[2]	C[3]	A[4]	
Field Parameters	**Units**																			
Temperature	**(°C)**	5.37	9.45	9.36	10.81	11.39	10.02	7.5	---	12.37	12.78	10.27	14.27	NA	NA	NA	NA	NA	NA	NA
pH	**(SU)**	7.23	7.04	7.17	6.69	6.20	7.11	7.29	---	6.71	7.77	6.99	7.39	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0
ORP	**(mV)**	286	270	252	136	240	168	95	---	280	80	244	272	NA	NA	NA	NA	NA	NA	NA
Specific Conductance	**(µS/cm)**	10,400	5,090	4,150	2,240	1,200	1,310	1,220	---	938	797	839	751	NA	NA	NA	NA	NA	NA	NA
Turbidity	**(NTU)**	0.0	89.6	28.2	210	N/A	0.0	10.2	---	46.5	2.5	126.0	---	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	**(mg/L)**	6,420	3,210	2,660	1,440	768	838	784	---	600	510	537	481	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	**(mg/L)**	8.55	7.72	8.07	11.28	19.12	11.12	9.77	---	9.31	9.01	6.75	9.09	NA	NA	NA	NA	NA	NA	NA
Chloride	**(mg/L)**	**3,235**	**612**	**561**	**---**	**---**	**238**	**255**	88	61	47	**261**	122	860	230	860	230	250	250	NA
General Chemistry	**Units**																			
Chloride	**(mg/L)**	**3,020**	**---**	**---**	**---**	**---**	**---**	**249**	**---**	**---**	**---**	**---**	135	860	230	860	230	250	250	NA
Volatile Organic Compounds	**Units**																			
Benzene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.410	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	51	0.66	NA
Toluene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.370	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	200,000	6,800	NA
Ethylbenzene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.420	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	29,000	3,100	NA
m,p-Xylenes	**(µg/L)**	< 2.0	**---**	**---**	**---**	**---**	**---**	< 1.05	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
o-Xylene	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.450	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Xylenes (Total)	**(µg/L)**	< 1.0	**---**	**---**	**---**	**---**	**---**	< 0.450	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons	**Units**																			
Acenaphthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	990	670	NA
Acenaphthylene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Anthracene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	40,000	8,300	NA
Benzo(a)anthracene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(a)pyrene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(b)fluoranthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(g,h,i)perylene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Chrysene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Dibenz(a,h)anthracene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Fluoranthene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	370	300	NA
Fluorene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	5,300	1,100	NA
Indeno(1,2,3-cd)pyrene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	0.018	0.0038	NA
Naphthalene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	**(µg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	NA	NA	NA
Pyrene	**(mg/L)**	< 0.10	**---**	**---**	**---**	**---**	**---**	< 0.10	**---**	**---**	**---**	**---**	**---**	NA	NA	NA	NA	4,000	830	NA

Notes:

*: West Virginia Surface Water Standards obtained from 47CSR2 - Appendix E, Table 1
B1: Warm water fishery use subcategory of Aquatic life use category
B2: Trout waters use subcategory of Aquatic life use category
B4: Wetlands use subcategory of Aquatic life use category
C: Water contact recreation use subcategory of Human health use category
A: Public water use subcategory of Human health use category
1: One hour average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
2: Four-day average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
3: These criteria have been calculated to protect human health from toxic effects through fish consumption, unless otherwise noted
4: These criteria have been calculated to protect human health from toxic and/or organoleptic effects through drinking water and fish consumption, unless otherwise noted
5: Criteria based on a surface water hardness value of 100 mg/L CaCO3

°C: degrees Celsius
mV: millivolts
NA: not applicable
NTU: nephelometric turbidity units
ORP: oxidation-reduction potential
SMCL: secondary maximum contaminant level
SU: standard pH units
µS/cm: microsiemens per centimeter
---: not measured

Table 12
Summary of SW-05 Water Quality Monitoring and Sampling Results
Thurman Speece Well Pad
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SW-05													Aquatic Life *				Human Health *		All Other Uses *
															B1,B4		B2		B2		
		1/3/2022	1/4/2022	1/5/2022	1/10/2022	1/19/2022	2/7/2022	2/23/2022	3/18/2022	3/24/2022	3/31/2022	4/6/2022	4/7/2022	4/8/2022	Acute[1]	Chronic[2]	Acute[1]	Chronic[2]	C[3]	A[4]	
Field Parameters	**Units**																				
Temperature	**(°C)**	8.07	9.61	9.79	11.80		12.38	10.04	---	14.18		11.56	---	15.27	NA	NA	NA	NA	NA	NA	NA
pH	**(SU)**	6.71	6.76	6.86	6.48		6.55	6.36	---	5.83		6.04	---	7.13	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0
ORP	**(mV)**	299	252	284	167		285	192	---	311		291	---	280	NA	NA	NA	NA	NA	NA	NA
Specific Conductance	**(µS/cm)**	11,200	7,800	6,490	4,960	No Flow	2,260	1,520	---	1,690	No flow	1,010	---	869	NA	NA	NA	NA	NA	NA	NA
Turbidity	**(NTU)**	4.0	0.0	0.0	0.0		6.4	0.0	---	37.9		80.3	---	---	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	**(mg/L)**	6,920	4,910	4,080	3,170		1,460	977	---	1,080		644	---	556	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	**(mg/L)**	6.87	7.01	6.96	8.47		9.93	11.19	---	11.54		12.51	---	8.66	NA	NA	NA	NA	NA	NA	NA
Chloride	**(mg/L)**	**1,487**	---	**1,531**	---		**616**	225	**323**	**323**		**1,065**	148	148	860	230	860	230	250	250	NA
General Chemistry	**Units**																				
Chloride	**(mg/L)**	**3,300**	---	---	---	---	---	**348**	---	---		---	---	166	860	230	860	230	250	250	NA
Volatile Organic Compounds	**Units**																				
Benzene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.410	---	---		---	---	---	NA	NA	NA	NA	51	0.66	NA
Toluene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.370	---	---		---	---	---	NA	NA	NA	NA	200,000	6,800	NA
Ethylbenzene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.420	---	---		---	---	---	NA	NA	NA	NA	29,000	3,100	NA
m,p-Xylenes	**(µg/L)**	< 2.0	---	---	---	---	---	< 1.05	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
o-Xylene	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.450	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
Xylenes (Total)	**(µg/L)**	< 1.0	---	---	---	---	---	< 0.450	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons	**Units**																				
Acenaphthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	990	670	NA
Acenaphthylene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
Anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	40,000	8,300	NA
Benzo(a)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(a)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(b)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(g,h,i)perylene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Chrysene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Dibenz(a,h)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	370	300	NA
Fluorene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	5,300	1,100	NA
Indeno(1,2,3-cd)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Naphthalene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	**(µg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	NA	NA	NA
Pyrene	**(mg/L)**	< 0.10	---	---	---	---	---	< 0.10	---	---		---	---	---	NA	NA	NA	NA	4,000	830	NA

Notes:

*: West Virginia Surface Water Standards obtained from 47CSR2 - Appendix E, Table 1
B1: Warm water fishery use subcategory of Aquatic life use category
B2: Trout waters use subcategory of Aquatic life use category
B4: Wetlands use subcategory of Aquatic life use category
C: Water contact recreation use subcategory of Human health use category
A: Public water use subcategory of Human health use category
1: One hour average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
2: Four-day average concentration not to be exceeded more than once every three years on the average, unless otherwise noted
3: These criteria have been calculated to protect human health from toxic effects through fish consumption, unless otherwise noted
4: These criteria have been calculated to protect human health from toxic and/or organoleptic effects through drinking water and fish consumption, unless otherwise noted
5: Criteria based on a surface water hardness value of 100 mg/L CaCO3

°C: degrees Celsius
mV: millivolts
NA: not applicable
NTU: nephelometric turbidity units
ORP: oxidation-reduction potential
SMCL: secondary maximum contaminant level
SU: standard pH units
µS/cm: microsiemens per centimeter
---: not measured

Table 13
Summary of SW-06 Water Quality Monitoring and Sampling Results
Thurman Speece Site
SWN Production Company, LLC
Buffalo District, Brooke County, West Virginia

PARAMETERS		SW-06						Aquatic Life *				Human Health *		All Other Uses *
								B1,B4		B2		B2		
		1/3/2022	1/4/2022	1/5/2022	1/10/2022	1/19/2022	2/7/2022	Acute[1]	Chronic[2]	Acute[1]	Chronic[2]	C[3]	A[4]	
Field Parameters	**Units**													
Temperature	**(°C)**	7.29	7.44	6.69	Frozen	Frozen	Pipe Has Been Removed	NA	NA	NA	NA	NA	NA	NA
pH	**(SU)**	6.98	6.94	7.05				6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0
ORP	**(mV)**	253	242	292				NA	NA	NA	NA	NA	NA	NA
Specific Conductance	**(µS/cm)**	22,600	30,000	19,600				NA	NA	NA	NA	NA	NA	NA
Turbidity	**(NTU)**	9.9	0.0	0.0				NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	**(mg/L)**	14,000	18,300	12,200				NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	**(mg/L)**	7.54	6.42	7.11				NA	NA	NA	NA	NA	NA	NA
Chloride	**(mg/L)**	**5,641**	**6,454**	**2,256**				860	230	860	230	250	250	NA
General Chemistry	**Units**													
Chloride	**(mg/L)**	**9,530**	---	---	---	---	---	860	230	860	230	250	250	NA
Volatile Organic Compounds	**Units**													
Benzene	**(µg/L)**	6.54	---	---	---	---	---	NA	NA	NA	NA	51	0.66	NA
Toluene	**(µg/L)**	20.3	---	---	---	---	---	NA	NA	NA	NA	200,000	6,800	NA
Ethylbenzene	**(µg/L)**	2.22	---	---	---	---	---	NA	NA	NA	NA	29,000	3,100	NA
m,p-Xylenes	**(µg/L)**	22.9	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
o-Xylene	**(µg/L)**	4.99	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Xylenes (Total)	**(µg/L)**	27.9	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons	**Units**													
Acenaphthene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	990	670	NA
Acenaphthylene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	40,000	8,300	NA
Benzo(a)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(a)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(b)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Benzo(g,h,i)perylene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Chrysene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Dibenz(a,h)anthracene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Fluoranthene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	370	300	NA
Fluorene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	5,300	1,100	NA
Indeno(1,2,3-cd)pyrene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	0.018	0.0038	NA
Naphthalene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	**(µg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	NA	NA	NA
Pyrene	**(mg/L)**	< 0.10	---	---	---	---	---	NA	NA	NA	NA	4,000	830	NA

Notes:

*: West Virginia Surface Water Standards obtained from 47CSR2 - Appendix E, Table 1
B1: Warm water fishery use subcategory of Aquatic life use category
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4: These criteria have been calculated to protect human health from toxic and/or organoleptic effects through drinking water and fish consumption, unless otherwise noted
5: Criteria based on a surface water hardness value of 100 mg/L CaCO3

°C: degrees Celsius
mV: millivolts
NA: not applicable
NTU: nephelometric turbidity units
ORP: oxidation-reduction potential
SMCL: secondary maximum contaminant level
SU: standard pH units
µS/cm: microsiemens per centimeter
---: not measured

APPENDIX A

Laboratory Analytical Reports

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
P: (724) 463-8378
F: (724) 465-4209
PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
P: (570) 321-9002
F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

12 January 2022

Moody & Associates, Inc. (Washington Office)
Attn: Joshua Boyda
1720 Washington Road
Washington, PA 15301

Work Order: 2010229
Project: SWN WV Thurman Spece Stream Sampling

Report of Analysis

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received	Sample Notes
SW-01	2010229-01	Water	01/03/2022 16:40	01/04/2022 18:00	
SW-02	2010229-02	Water	01/03/2022 16:45	01/04/2022 18:00	
SW-03	2010229-03	Water	01/03/2022 17:00	01/04/2022 18:00	
SW-04	2010229-04	Water	01/03/2022 17:25	01/04/2022 18:00	
SW-05	2010229-05	Water	01/03/2022 17:45	01/04/2022 18:00	
SW-06	2010229-06	Water	01/03/2022 17:55	01/04/2022 18:00	
Trip Blank	2010229-07	Water	01/03/2022 00:00	01/04/2022 18:00	

Report Narrative

The results contained in this report are only representative of the samples received. Environmental Service Laboratories, Inc. is not responsible for use or interpretation of the data included herein.

Definitions

RL Reporting Limit
CFU Colony Forming Units

Certifications

Analyses performed by Environmental Service Laboratories, Inc., Indiana PA unless otherwise specified.

Environmental Service Laboratories, Inc., Indiana, West Virginia DEP Certificate # 392

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
P: (724) 463-8378
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1276 Bentleyville Road
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P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
P: (570) 321-9002
F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Approved By

Lucas Winner
Project Manager

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
P: (724) 463-8378
F: (724) 465-4209
PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
P: (570) 321-9002
F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-01
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-01

Sample Date: 01/03/2022 16:40
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	37.4	mg/L		0.303	2.00	EPA300.0 2.1	TLL	01/11/22 04:03
Volatile Organics								
Benzene	<1.00	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 17:21
Toluene	<1.00	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 17:21
Ethyl Benzene	<1.00	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 17:21
m,p-Xylenes	<2.00	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 17:21
o-Xylene	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 17:21
Total Xylenes	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 17:21
Surrogate: 1,2-Dichloroethane-d4	*105 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 17:21*
Surrogate: Toluene-d8	*99 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 17:21*
Surrogate: 4-Bromofluorobenzene	*95 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 17:21*

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
P: (724) 463-8378
F: (724) 465-4209
PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

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PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-02
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-02

Sample Date: 01/03/2022 16:45
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	1620	mg/L		15.2	100	EPA300.0 2.1	TLL	01/11/22 11:31
Volatile Organics								
Benzene	<1.00	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 17:46
Toluene	<1.00	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 17:46
Ethyl Benzene	<1.00	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 17:46
m,p-Xylenes	<2.00	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 17:46
o-Xylene	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 17:46
Total Xylenes	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 17:46
Surrogate: 1,2-Dichloroethane-d4	*108 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 17:46*
Surrogate: Toluene-d8	*99 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 17:46*
Surrogate: 4-Bromofluorobenzene	*96 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 17:46*

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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Indiana, PA 15701
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F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-03
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-03

Sample Date: 01/03/2022 17:00
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	8.58	mg/L		0.303	2.00	EPA300.0 2.1	TLL	01/11/22 04:40
Volatile Organics								
Benzene	<1.00	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 18:12
Toluene	<1.00	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 18:12
Ethyl Benzene	<1.00	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 18:12
m,p-Xylenes	<2.00	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 18:12
o-Xylene	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 18:12
Total Xylenes	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 18:12
Surrogate: 1,2-Dichloroethane-d4	*106 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 18:12*
Surrogate: Toluene-d8	*99 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 18:12*
Surrogate: 4-Bromofluorobenzene	*93 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 18:12*

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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Indiana, PA 15701
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435 Broad Street
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F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-04
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-04

Sample Date: 01/03/2022 17:25
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	3020	mg/L		15.2	100	EPA300.0 2.1	TLL	01/11/22 12:00
Volatile Organics								
Benzene	<1.00	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 18:37
Toluene	<1.00	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 18:37
Ethyl Benzene	<1.00	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 18:37
m,p-Xylenes	<2.00	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 18:37
o-Xylene	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 18:37
Total Xylenes	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 18:37
Surrogate: 1,2-Dichloroethane-d4	*105 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 18:37*
Surrogate: Toluene-d8	*99 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 18:37*
Surrogate: 4-Bromofluorobenzene	*94 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 18:37*

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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Indiana, PA 15701
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PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
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PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
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F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-05
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-05

Sample Date: 01/03/2022 17:45
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	3300	mg/L		15.2	100	EPA300.0 2.1	TLL	01/11/22 12:18
Volatile Organics								
Benzene	<1.00	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 19:02
Toluene	<1.00	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 19:02
Ethyl Benzene	<1.00	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 19:02
m,p-Xylenes	<2.00	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 19:02
o-Xylene	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 19:02
Total Xylenes	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 19:02
Surrogate: 1,2-Dichloroethane-d4	*107 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 19:02*
Surrogate: Toluene-d8	*100 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 19:02*
Surrogate: 4-Bromofluorobenzene	*94 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 19:02*

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
P: (724) 463-8378
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PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
P: (570) 321-9002
F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-06
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-06

Sample Date: 01/03/2022 17:55
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	9530	mg/L		30.3	200	EPA300.0 2.1	TLL	01/11/22 12:46
Volatile Organics								
Benzene	6.54	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 19:27
Toluene	20.3	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 19:27
Ethyl Benzene	2.22	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 19:27
m,p-Xylenes	22.9	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 19:27
o-Xylene	4.99	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 19:27
Total Xylenes	27.9	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 19:27
Surrogate: 1,2-Dichloroethane-d4	*102 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 19:27*
Surrogate: Toluene-d8	*97 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 19:27*
Surrogate: 4-Bromofluorobenzene	*101 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 19:27*

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
P: (724) 463-8378
F: (724) 465-4209
PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
P: (570) 321-9002
F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 01/12/2022 17:20

Lab Sample ID#: 2010229-07
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: Trip Blank

Sample Date: 01/03/2022 00:00
Receipt Date: 01/04/2022 18:00

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
Volatile Organics								
Benzene	<1.00	ug/L		0.410	1.00	EPA8260D	MJK	01/05/22 19:52
Toluene	0.810	ug/L		0.370	1.00	EPA8260D	MJK	01/05/22 19:52
Ethyl Benzene	<1.00	ug/L		0.420	1.00	EPA8260D	MJK	01/05/22 19:52
m,p-Xylenes	<2.00	ug/L		1.05	2.00	EPA8260D	MJK	01/05/22 19:52
o-Xylene	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 19:52
Total Xylenes	<1.00	ug/L		0.450	1.00	EPA8260D	MJK	01/05/22 19:52
Surrogate: 1,2-Dichloroethane-d4	*107 %*		*80-120*			*EPA8260D*	*MJK*	*01/05/22 19:52*
Surrogate: Toluene-d8	*99 %*		*88-110*			*EPA8260D*	*MJK*	*01/05/22 19:52*
Surrogate: 4-Bromofluorobenzene	*95 %*		*86-115*			*EPA8260D*	*MJK*	*01/05/22 19:52*

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE 1 OF 4

HEADQUARTERS
1803 Philadelphia St.
Indiana, PA 15701
(724) 463-TEST
FAX: (724) 465-4209

SOUTHERN DIVISION
1276 Bentleyville Road
Van Voorhis, PA 15366
(724) 258-TEST
FAX: (724) 258-8376

THWEST DIVISION
lain Street
sville, PA 16150
463-TEST
FAX: (724) 465-4209

2010229

PUSH!

Requested TAT:
Rush 48hr days [X]
Standard [ ]

FOR INTERNAL LABORATORY USE ONLY

Sample Identification	ESL# 2016229	Sample Type: Composite Date on/off	Composite Time on/off	Grab Date	Grab Time	Matrix	# of Containers	Container Type / Preservative	Analysis Requested
SU-01	01			1/3/22	1640	W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS
Trip Blank	07					W	3	VOA Vial 40mL HCl	BTEX

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

	Date/ Time		Date/ Time
Sampled By: (Signature)	1/3/22 1800		
Relinquished By: (Signature)	1/4/22 0900	Received By: (Signature)	1/4/22 0900
Relinquished By: (Signature)	1/4/22 0950	Received By: (Signature)	1/4/22 0950
Relinquished By: (Signature)	1/4/22 1037	Received By: (Signature)	
Relinquished By: (Signature)	1-4-22 1510	Received By: (Signature)	1-4-22 1315

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

spm (00382) 1/4/22 1800

Project Notes:

Thurman Spece Stream Sampling

Please direct bill SWN (Josh Boyda)

Company/Name:	**Moody & Associates (Washington, PA)**
Address:	1720 Washington Road, Suite 100
	Washington, PA 15301
Contact Person:	Katie Sasala
Phone Number:	724-749-4606
Email Address:	Ksasala@moody-s.com
State of Collection:	WV

Moody Project No.: 22-002-KS

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE 2 OF 4

2010229

HERN DIVISION
entleyville Road
orhis, PA 15366
58-TEST
FAX: (724) 258-8376

X

NORTHERN DIVISION
435 Broad Street
Montoursville, PA 17754
(570) 321-9003
FAX: (570) 321-1957

PUSH!

NORTHWEST DIVISION
950 Main Street
Sharpsville, PA 16150
(724) 463-TEST
FAX: (724) 465-4209

Requested TAT:
Rush ASAP days X
Standard

FOR INTERNAL LABORATORY USE ONLY

Sample Identification	ESL#	Sample Type: Composite Date on/off	Composite Time on/off	Grab Date	Grab Time	Matrix	# of Containers	Container Type / Preservative	Analysis Requested
SW-02	02			1/3/22	1645	W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS
SW-03	03			1/3/22	1700	W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Project Notes:

Thurman Spece Stream Sampling

Please direct bill SWN (Josh Boyda)

Sampled By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
[signature]	1/3/22 1800	[signature]	1/4/22 0900
Relinquished By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
[signature]	1/4/22 0900	[signature]	1/4/22 0950
Relinquished By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
[signature]	1/4/22 1037	[signature]	1-4-22 1315
Relinquished By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
[signature]	1-4-22 1510	SPM (CCS382)	1/4/22 1800

Company/Name: **Moody & Associates (Washington, PA)**
Address: 1720 Washington Road, Suite 100
Washington, PA 15301
Contact Person: Katie Sasala
Phone Number: 724-749-4606
Email Address: Ksasala@moody-s.com
State of Collection: WV

Moody Project No.: 22-002-KS

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE 3 OF 4

2010229

SOUTHERN DIVISION
176 Bentleyville Road
Voorhis, PA 15366
(724) 258-TEST
FAX: (724) 258-8376

X

NORTHERN DIVISION
435 Broad Street
Montoursville, PA 17754
(570) 321-9003
FAX: (570) 321-1957

PUSH!

NORTHWEST DIVISION
950 Main Street
Sharpsville, PA 16150
(724) 463-TEST
FAX: (724) 465-4209

Requested TAT:
Rush ASAP days ☒
Standard ☐

FOR INTERNAL LABORATORY USE ONLY

Sample Identification	ESL#	Sample Type: Composite Date on/off	Composite Time on/off	Grab Date	Grab Time	Matrix	# of Containers	Container Type / Preservative	Analysis Requested
SW-04	04			1/3/22	1725	W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS
SW-05	05			1/3/22	1745	W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

	Date/ Time		Date/ Time
Sampled By: (Signature)	1/3/22 1800		
Relinquished By: (Signature)	1/4/22 0900	Received By: (Signature)	1/4/22 0900
Relinquished By: (Signature)	1/4/22 0950	Received By: (Signature)	1/4/22 0950
Relinquished By: (Signature)	1/4/22 1037	Received By: (Signature)	1-4-22 1315
Relinquished By: (Signature)	1-4-22 1510	Received By: (Signature)	1/4/21 1500

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

Project Notes:

Thurman Spece Stream Sampling

Please direct bill SWN (Josh Boyda)

Company/Name:	**Moody & Associates (Washington, PA)**
Address:	1720 Washington Road, Suite 100
	Washington, PA 15301
Contact Person:	Katie Sasala
Phone Number:	724-749-4606
Email Address:	Ksasala@moody-s.com
State of Collection:	WV

Moody Project No.: 22-002-KS

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE 4 OF 4

2010229

SOUTHERN DIVISION
176 Bentleyville Road
n Voorhis, PA 15366
(4) 258-TEST
AX: (724) 258-8376

NORTHERN DIVISION
435 Broad Street
Montoursville, PA 17754
(570) 321-9003
FAX: (570) 321-1957

NORTHWEST DIVISION
950 Main Street
Sharpsville, PA 16150
(724) 463-TEST
FAX: (724) 465-4209

PUSH!!

Requested TAT:
Rush ASAP days [X]
Standard [ ]

FOR INTERNAL LABORATORY USE ONLY

Sample Identification	ESL# 2010227	Sample Type: Composite Date on/off	Composite Time on/off	Grab Date	Grab Time	Matrix	# of Containers	Container Type / Preservative	Analysis Requested
SW-06	06			1/3/22	1755	W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS
	6					W	3	VOA Vial 40mL HCl	BTEX
						W	1	Poly 500mL None	Chloride
						W	1	Amber Glass Liter None	PAHS

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

	Date/ Time		Date/ Time
Sampled By: (Signature)	1/3/22 1800		
Relinquished By: (Signature)	1/4/22 0900	Received By: (Signature)	1/4/22 0900
Relinquished By: (Signature)	1/4/22 0950	Received By: (Signature)	1/4/22 0950
Relinquished By: (Signature)	1/4/22 1637	Received By: (Signature)	1-4-22 1315
Relinquished By: (Signature)	1-4-22 1510	Received By: (Signature)	1/4/22 1800

Correct Preservations Y / N / NA Correct Containers Y / N / NA Receipt Temperature _____

Project Notes:

Thurman Spece Stream Sampling

Please direct bill SWN (Josh Boyda)

Company/Name:	**Moody & Associates (Washington, PA)**
Address:	1720 Washington Road, Suite 100
	Washington, PA 15301
Contact Person:	Katie Sasala
Phone Number:	724-749-4606
Email Address:	Ksasala@moody-s.com
State of Collection:	WV

Moody Project No.: 22-002-KS

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE RECEIPT AND RE[illegible]

2010229

Client: Moody	Work Order:

PART A: GENERAL INFORMATION- SATELLITE LABORATORY

Received by/Lab ID:	Date/Time Received: / /
Method of Delivery: Client Drop-Off ESL Courier Other: _____	Received on Ice? YES NO
Sample Receipt Temperature: _____ °C	IR Gun ID:
Containers Removed by Satellite Lab for Analysis of: FECAL TC/EC TC MPN EC MPN TC/EC MPN N/A	

PART B: GENERAL INFORMATION- INDIANA LABORATORY

Received by/Lab ID: SPM (00382)	Samples Received on Ice? (YES) NO
Date/Time Received: 1/4/22 1800	Date Sampled: 1/3/22
Method of Delivery: FedEx UPS Client Drop off (ESL courier) Other: _____	
Sample Receipt Temperature: 3.0 °C	IR Gun ID: 3
Sample State of Collection: (PA) NY OH WV Other: _____ SPM 1/4/21	PWSID Compliance Drinking Water Samples: YES (NO)

PART C: Receipt Details

Completed (if different from above): _____ / / _____
Signature Date Time

Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)
Chain of custody documents included with samples?	(YES) NO	Comments:
COC form is properly signed in relinquished/received sections?	YES NO	Comments:
Sample containers intact and sealed?	YES NO	Circle Applicable: Damaged Container Leaking Container Custody Seal Broken Other: _____
Number of containers received matches number indicated on COC?	YES NO	Sample IDs and Containers Affected:
Sample IDs on COC match IDs on bottles?	YES NO	Sample IDs and Containers Affected:
Date and time on COC match date and time on bottles?	YES NO	Sample IDs and Containers Affected:
Samples received within holding time?	YES NO	Sample IDs and Containers Affected:
Samples received at appropriate pH for analysis requested?	YES NO	Sample IDs and Containers Affected and Observed pH:
Samples requiring thermal preservation within 0 ≤ 6°C? Microbiology within 0 ≤ 10°C?	YES NO	For non-WV samples outside of thermal preservation range sampled same day and received on ice are considered acceptable as long as the cooling process has begun.
Adequate sample volume received?	YES NO	Analyses Affected:
VOA vials free of headspace (defined as < 6 mm bubble)?	YES (NO)	Sample IDs and Containers Affected:
Other Comments: SPM 1/4/22		**Deficiency Log Created:** YES (NO)

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

January 11, 2022

Mr Richard Rodriguez
Environmental Service Laboratories, Inc.
1803 Philadelphia Street
Indiana, PA 15701

RE: Project: 2010229
Pace Project No.: 30458214

Dear Mr Rodriguez:

Enclosed are the analytical results for sample(s) received by the laboratory on January 05, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Megan A Rager

Megan A. Rager
megan.rager@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Sierra Grguric, Environmental Service Laboratories, Inc.

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Greensburg, PA 15601
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CERTIFICATIONS

Project: 2010229
Pace Project No.: 30458214

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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Greensburg, PA 15601
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SAMPLE SUMMARY

Project: 2010229
Pace Project No.: 30458214

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30458214001	**2010229-01**	Water	01/03/22 16:40	01/05/22 16:45
30458214002	**2010229-02**	Water	01/03/22 16:45	01/05/22 16:45
30458214003	**2010229-03**	Water	01/03/22 17:00	01/05/22 16:45
30458214004	**2010229-04**	Water	01/03/22 17:25	01/05/22 16:45
30458214005	**2010229-05**	Water	01/03/22 17:45	01/05/22 16:45
30458214006	**2010229-06**	Water	01/03/22 17:55	01/05/22 16:45

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 2010229
Pace Project No.: 30458214

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30458214001	**2010229-01**	EPA 8270D by SIM	DSC	18	PASI-PA
30458214002	**2010229-02**	EPA 8270D by SIM	DSC	18	PASI-PA
30458214003	**2010229-03**	EPA 8270D by SIM	DSC	18	PASI-PA
30458214004	**2010229-04**	EPA 8270D by SIM	DSC	18	PASI-PA
30458214005	**2010229-05**	EPA 8270D by SIM	DSC	18	PASI-PA
30458214006	**2010229-06**	EPA 8270D by SIM	DSC	18	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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Greensburg, PA 15601
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ANALYTICAL RESULTS

Project: 2010229
Pace Project No.: 30458214

Sample: 2010229-01 **Lab ID: 30458214001** Collected: 01/03/22 16:40 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Acenaphthene	**0.10 U**	ug/L	0.10	0.023	1	01/07/22 09:00	01/10/22 14:33	83-32-9	1c
Acenaphthylene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 14:33	208-96-8	1c
Anthracene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 14:33	120-12-7	1c
Benzo(a)anthracene	**0.10 U**	ug/L	0.10	0.081	1	01/07/22 09:00	01/10/22 14:33	56-55-3	1c
Benzo(a)pyrene	**0.10 U**	ug/L	0.10	0.026	1	01/07/22 09:00	01/10/22 14:33	50-32-8	1c
Benzo(b)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 14:33	205-99-2	1c
Benzo(g,h,i)perylene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 14:33	191-24-2	1c
Benzo(k)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 14:33	207-08-9	1c
Chrysene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 14:33	218-01-9	1c
Dibenz(a,h)anthracene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 14:33	53-70-3	1c
Fluoranthene	**0.10 U**	ug/L	0.10	0.020	1	01/07/22 09:00	01/10/22 14:33	206-44-0	1c
Fluorene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 14:33	86-73-7	1c
Indeno(1,2,3-cd)pyrene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 14:33	193-39-5	1c
Naphthalene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 14:33	91-20-3	1c
Phenanthrene	**0.10 U**	ug/L	0.10	0.027	1	01/07/22 09:00	01/10/22 14:33	85-01-8	1c
Pyrene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 14:33	129-00-0	1c,L1
Surrogates									
2-Fluorobiphenyl (S)	82	%.	19-92		1	01/07/22 09:00	01/10/22 14:33	321-60-8	
Terphenyl-d14 (S)	176	%.	55-109		1	01/07/22 09:00	01/10/22 14:33	1718-51-0	ST

Sample: 2010229-02 **Lab ID: 30458214002** Collected: 01/03/22 16:45 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Acenaphthene	**0.10 U**	ug/L	0.10	0.023	1	01/07/22 09:00	01/10/22 14:50	83-32-9	1c
Acenaphthylene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 14:50	208-96-8	1c
Anthracene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 14:50	120-12-7	1c
Benzo(a)anthracene	**0.10 U**	ug/L	0.10	0.081	1	01/07/22 09:00	01/10/22 14:50	56-55-3	1c
Benzo(a)pyrene	**0.10 U**	ug/L	0.10	0.026	1	01/07/22 09:00	01/10/22 14:50	50-32-8	1c
Benzo(b)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 14:50	205-99-2	1c
Benzo(g,h,i)perylene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 14:50	191-24-2	1c
Benzo(k)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 14:50	207-08-9	1c
Chrysene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 14:50	218-01-9	1c
Dibenz(a,h)anthracene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 14:50	53-70-3	1c
Fluoranthene	**0.10 U**	ug/L	0.10	0.020	1	01/07/22 09:00	01/10/22 14:50	206-44-0	1c
Fluorene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 14:50	86-73-7	1c
Indeno(1,2,3-cd)pyrene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 14:50	193-39-5	1c
Naphthalene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 14:50	91-20-3	1c
Phenanthrene	**0.10 U**	ug/L	0.10	0.027	1	01/07/22 09:00	01/10/22 14:50	85-01-8	1c
Pyrene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 14:50	129-00-0	1c,L1
Surrogates									
2-Fluorobiphenyl (S)	79	%.	19-92		1	01/07/22 09:00	01/10/22 14:50	321-60-8	

REPORT OF LABORATORY ANALYSIS

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 2010229
Pace Project No.: 30458214

Sample: 2010229-02 **Lab ID: 30458214002** Collected: 01/03/22 16:45 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Surrogates									
Terphenyl-d14 (S)	162	%.	55-109		1	01/07/22 09:00	01/10/22 14:50	1718-51-0	ST

Sample: 2010229-03 **Lab ID: 30458214003** Collected: 01/03/22 17:00 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Acenaphthene	**0.10 U**	ug/L	0.10	0.023	1	01/07/22 09:00	01/10/22 15:07	83-32-9	1c
Acenaphthylene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:07	208-96-8	1c
Anthracene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:07	120-12-7	1c
Benzo(a)anthracene	**0.10 U**	ug/L	0.10	0.081	1	01/07/22 09:00	01/10/22 15:07	56-55-3	1c
Benzo(a)pyrene	**0.10 U**	ug/L	0.10	0.026	1	01/07/22 09:00	01/10/22 15:07	50-32-8	1c
Benzo(b)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:07	205-99-2	1c
Benzo(g,h,i)perylene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:07	191-24-2	1c
Benzo(k)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:07	207-08-9	1c
Chrysene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:07	218-01-9	1c
Dibenz(a,h)anthracene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:07	53-70-3	1c
Fluoranthene	**0.10 U**	ug/L	0.10	0.020	1	01/07/22 09:00	01/10/22 15:07	206-44-0	1c
Fluorene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:07	86-73-7	1c
Indeno(1,2,3-cd)pyrene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:07	193-39-5	1c
Naphthalene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:07	91-20-3	1c
Phenanthrene	**0.10 U**	ug/L	0.10	0.027	1	01/07/22 09:00	01/10/22 15:07	85-01-8	1c
Pyrene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:07	129-00-0	1c,L1
Surrogates									
2-Fluorobiphenyl (S)	76	%.	19-92		1	01/07/22 09:00	01/10/22 15:07	321-60-8	
Terphenyl-d14 (S)	162	%.	55-109		1	01/07/22 09:00	01/10/22 15:07	1718-51-0	ST

Sample: 2010229-04 **Lab ID: 30458214004** Collected: 01/03/22 17:25 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Acenaphthene	**0.10 U**	ug/L	0.10	0.023	1	01/07/22 09:00	01/10/22 15:23	83-32-9	1c
Acenaphthylene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:23	208-96-8	1c
Anthracene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:23	120-12-7	1c
Benzo(a)anthracene	**0.10 U**	ug/L	0.10	0.081	1	01/07/22 09:00	01/10/22 15:23	56-55-3	1c
Benzo(a)pyrene	**0.10 U**	ug/L	0.10	0.026	1	01/07/22 09:00	01/10/22 15:23	50-32-8	1c
Benzo(b)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:23	205-99-2	1c
Benzo(g,h,i)perylene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:23	191-24-2	1c

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 2010229
Pace Project No.: 30458214

Sample: 2010229-04 **Lab ID: 30458214004** Collected: 01/03/22 17:25 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Benzo(k)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:23	207-08-9	1c
Chrysene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:23	218-01-9	1c
Dibenz(a,h)anthracene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:23	53-70-3	1c
Fluoranthene	**0.10 U**	ug/L	0.10	0.020	1	01/07/22 09:00	01/10/22 15:23	206-44-0	1c
Fluorene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:23	86-73-7	1c
Indeno(1,2,3-cd)pyrene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:23	193-39-5	1c
Naphthalene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:23	91-20-3	1c
Phenanthrene	**0.10 U**	ug/L	0.10	0.027	1	01/07/22 09:00	01/10/22 15:23	85-01-8	1c
Pyrene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:23	129-00-0	1c,L1
Surrogates									
2-Fluorobiphenyl (S)	74	%.	19-92		1	01/07/22 09:00	01/10/22 15:23	321-60-8	
Terphenyl-d14 (S)	168	%.	55-109		1	01/07/22 09:00	01/10/22 15:23	1718-51-0	ST

Sample: 2010229-05 **Lab ID: 30458214005** Collected: 01/03/22 17:45 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Acenaphthene	**0.10 U**	ug/L	0.10	0.023	1	01/07/22 09:00	01/10/22 15:40	83-32-9	1c
Acenaphthylene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:40	208-96-8	1c
Anthracene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:40	120-12-7	1c,IS
Benzo(a)anthracene	**0.10 U**	ug/L	0.10	0.081	1	01/07/22 09:00	01/10/22 15:40	56-55-3	1c
Benzo(a)pyrene	**0.10 U**	ug/L	0.10	0.026	1	01/07/22 09:00	01/10/22 15:40	50-32-8	1c
Benzo(b)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:40	205-99-2	1c
Benzo(g,h,i)perylene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:40	191-24-2	1c
Benzo(k)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:40	207-08-9	1c
Chrysene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:40	218-01-9	1c
Dibenz(a,h)anthracene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:40	53-70-3	1c
Fluoranthene	**0.10 U**	ug/L	0.10	0.020	1	01/07/22 09:00	01/10/22 15:40	206-44-0	1c,IS
Fluorene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:40	86-73-7	1c
Indeno(1,2,3-cd)pyrene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:40	193-39-5	1c
Naphthalene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:40	91-20-3	1c
Phenanthrene	**0.10 U**	ug/L	0.10	0.027	1	01/07/22 09:00	01/10/22 15:40	85-01-8	1c,IS
Pyrene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:40	129-00-0	1c,IS,L1
Surrogates									
2-Fluorobiphenyl (S)	78	%.	19-92		1	01/07/22 09:00	01/10/22 15:40	321-60-8	
Terphenyl-d14 (S)	242	%.	55-109		1	01/07/22 09:00	01/10/22 15:40	1718-51-0	IS,ST

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 2010229
Pace Project No.: 30458214

Sample: 2010229-06 **Lab ID: 30458214006** Collected: 01/03/22 17:55 Received: 01/05/22 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D PAH SIM Reduced Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C Pace Analytical Services - Greensburg								
Acenaphthene	**0.10 U**	ug/L	0.10	0.023	1	01/07/22 09:00	01/10/22 15:56	83-32-9	1c
Acenaphthylene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:56	208-96-8	1c
Anthracene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:56	120-12-7	1c
Benzo(a)anthracene	**0.10 U**	ug/L	0.10	0.081	1	01/07/22 09:00	01/10/22 15:56	56-55-3	1c
Benzo(a)pyrene	**0.10 U**	ug/L	0.10	0.026	1	01/07/22 09:00	01/10/22 15:56	50-32-8	1c
Benzo(b)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:56	205-99-2	1c
Benzo(g,h,i)perylene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:56	191-24-2	1c
Benzo(k)fluoranthene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:56	207-08-9	1c
Chrysene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:56	218-01-9	1c
Dibenz(a,h)anthracene	**0.10 U**	ug/L	0.10	0.031	1	01/07/22 09:00	01/10/22 15:56	53-70-3	1c
Fluoranthene	**0.10 U**	ug/L	0.10	0.020	1	01/07/22 09:00	01/10/22 15:56	206-44-0	1c
Fluorene	**0.10 U**	ug/L	0.10	0.022	1	01/07/22 09:00	01/10/22 15:56	86-73-7	1c
Indeno(1,2,3-cd)pyrene	**0.10 U**	ug/L	0.10	0.033	1	01/07/22 09:00	01/10/22 15:56	193-39-5	1c
Naphthalene	**0.10 U**	ug/L	0.10	0.042	1	01/07/22 09:00	01/10/22 15:56	91-20-3	1c
Phenanthrene	**0.10 U**	ug/L	0.10	0.027	1	01/07/22 09:00	01/10/22 15:56	85-01-8	1c
Pyrene	**0.10 U**	ug/L	0.10	0.021	1	01/07/22 09:00	01/10/22 15:56	129-00-0	1c,L1
Surrogates									
2-Fluorobiphenyl (S)	77	%.	19-92		1	01/07/22 09:00	01/10/22 15:56	321-60-8	
Terphenyl-d14 (S)	181	%.	55-109		1	01/07/22 09:00	01/10/22 15:56	1718-51-0	ST

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 2010229
Pace Project No.: 30458214

QC Batch: 478788
QC Batch Method: EPA 3510C
Analysis Method: EPA 8270D by SIM
Analysis Description: 8270D PAH by SIM RV MSSV
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30458214001, 30458214002, 30458214003, 30458214004, 30458214005, 30458214006

METHOD BLANK: 2313418 Matrix: Water
Associated Lab Samples: 30458214001, 30458214002, 30458214003, 30458214004, 30458214005, 30458214006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Acenaphthene	ug/L	0.10 U	0.10	0.023	01/10/22 12:54	
Acenaphthylene	ug/L	0.10 U	0.10	0.021	01/10/22 12:54	
Anthracene	ug/L	0.10 U	0.10	0.022	01/10/22 12:54	
Benzo(a)anthracene	ug/L	0.10 U	0.10	0.081	01/10/22 12:54	
Benzo(a)pyrene	ug/L	0.10 U	0.10	0.026	01/10/22 12:54	
Benzo(b)fluoranthene	ug/L	0.10 U	0.10	0.042	01/10/22 12:54	
Benzo(g,h,i)perylene	ug/L	0.10 U	0.10	0.031	01/10/22 12:54	
Benzo(k)fluoranthene	ug/L	0.10 U	0.10	0.042	01/10/22 12:54	
Chrysene	ug/L	0.10 U	0.10	0.033	01/10/22 12:54	
Dibenz(a,h)anthracene	ug/L	0.10 U	0.10	0.031	01/10/22 12:54	
Fluoranthene	ug/L	0.10 U	0.10	0.020	01/10/22 12:54	
Fluorene	ug/L	0.10 U	0.10	0.022	01/10/22 12:54	
Indeno(1,2,3-cd)pyrene	ug/L	0.10 U	0.10	0.033	01/10/22 12:54	
Naphthalene	ug/L	0.10 U	0.10	0.042	01/10/22 12:54	
Phenanthrene	ug/L	0.10 U	0.10	0.027	01/10/22 12:54	
Pyrene	ug/L	0.10 U	0.10	0.021	01/10/22 12:54	
2-Fluorobiphenyl (S)	%.	80	19-92		01/10/22 12:54	
Terphenyl-d14 (S)	%.	102	55-109		01/10/22 12:54	

LABORATORY CONTROL SAMPLE: 2313419

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/L	2	1.8	88	29-110	
Acenaphthylene	ug/L	2	1.9	93	28-121	
Anthracene	ug/L	2	2.2	110	40-115	
Benzo(a)anthracene	ug/L	2	2.2	109	63-119	
Benzo(a)pyrene	ug/L	2	1.8	90	56-121	
Benzo(b)fluoranthene	ug/L	2	2.1	106	61-126	
Benzo(g,h,i)perylene	ug/L	2	1.9	95	53-123	
Benzo(k)fluoranthene	ug/L	2	2.1	103	57-121	
Chrysene	ug/L	2	2.0	98	62-109	
Dibenz(a,h)anthracene	ug/L	2	2.0	102	55-125	
Fluoranthene	ug/L	2	2.4	121	55-121	
Fluorene	ug/L	2	1.8	91	30-119	
Indeno(1,2,3-cd)pyrene	ug/L	2	2.1	107	56-124	
Naphthalene	ug/L	2	1.7	83	26-104	
Phenanthrene	ug/L	2	2.1	107	38-112	
Pyrene	ug/L	2	2.4	122	56-119	L1
2-Fluorobiphenyl (S)	%.			74	19-92	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 2010229
Pace Project No.: 30458214

LABORATORY CONTROL SAMPLE: 2313419

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Terphenyl-d14 (S)	%.			110	55-109	ST

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 2010229
Pace Project No.: 30458214

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 478788

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1c	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
IS	The internal standard response is below criteria. Results may be biased high.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
ST	Surrogate recovery was above laboratory control limits. Results may be biased high.

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2010229
Pace Project No.: 30458214

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30458214001	**2010229-01**	EPA 3510C	478788	EPA 8270D by SIM	478870
30458214002	**2010229-02**	EPA 3510C	478788	EPA 8270D by SIM	478870
30458214003	**2010229-03**	EPA 3510C	478788	EPA 8270D by SIM	478870
30458214004	**2010229-04**	EPA 3510C	478788	EPA 8270D by SIM	478870
30458214005	**2010229-05**	EPA 3510C	478788	EPA 8270D by SIM	478870
30458214006	**2010229-06**	EPA 3510C	478788	EPA 8270D by SIM	478870

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CONTRACT ORDER

al Service Laboratories, Inc.

2010229

eports@envlabs.com. Contact ESL with any questions.

SENDING LABORATORY:

Environmental Service Laboratories, Inc.
1803 Philadelphia Street
Indiana, PA 15701
Phone: 724-463-8378
Fax: 724-465-4209
Project Manager: Lucas Winner

RECEIVING LABORATORY:

Pace Analytical Services, LLC.
1638 Roseytown Road - Suites 2, 3, 4
Greensburg, PA 15601
Phone :(724) 850-5600
Fax: (724) 850-5601

State of Origin: PA

Analysis	Due	Expires	Comments
Sample ID: 2010229-01			
Matrix: Water **Sampled: 01/03/2022 16:40** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	01/11/2022 23:00	02/02/2022 16:40	WV
Containers Supplied:			
Amber Glass, 250mL (E) Amber Glass, 250mL (F) Amber Glass, 250mL (G) Amber Glass, 250mL (H)			
Sample ID: 2010229-02			
Matrix: Water **Sampled: 01/03/2022 16:45** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	01/11/2022 23:00	02/02/2022 16:45	WV
Containers Supplied:			
Amber Glass, 250mL (E) Amber Glass, 250mL (F) Amber Glass, 250mL (G) Amber Glass, 250mL (H)			
Sample ID: 2010229-03			
Matrix: Water **Sampled: 01/03/2022 17:00** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	01/11/2022 23:00	02/02/2022 17:00	WV
Containers Supplied:			
Amber Glass, 1000mL (E)			
Sample ID: 2010229-04			
Matrix: Water **Sampled: 01/03/2022 17:25** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	01/11/2022 23:00	02/02/2022 17:25	WV
Containers Supplied:			
Amber Glass, 1000mL (E)			
Sample ID: 2010229-05			
Matrix: Water **Sampled: 01/03/2022 17:45** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	01/11/2022 23:00	02/02/2022 17:45	WV
Containers Supplied:			
Amber Glass, 1000mL (E)			
Sample ID: 2010229-06			
Matrix: Water **Sampled: 01/03/2022 17:55** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	01/11/2022 23:00	02/02/2022 17:55	WV
Containers Supplied:			
Amber Glass, 1000mL (E)			

SPM	1/5/22	Bill Graham	1/5/22 1210
Released By	Date	Received By	Date
Bill Graham	1/5/22 1645		1-5-22 1645
Released By	Date	Received By	Date

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: ESL Project #

WO# : 30458214

PM: MAR Due Date: 01/10/22

CLIENT: ESL

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other

Label

Tracking #: —

LIMS Login

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Thermometer Used 14 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 2.3 °C Correction Factor: 0 °C Final Temp: 2.3 °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot# (CD)841	Date and Initials of person examining contents: PL 1-6-22
Chain of Custody Present:	–			1.	
Chain of Custody Filled Out:	–			2.	
Chain of Custody Relinquished:	–			3.	
Sampler Name & Signature on COC:		–		4.	
Sample Labels match COC: -Includes date/time/ID Matrix: WA	–			5.	
Samples Arrived within Hold Time:	–			6.	
Short Hold Time Analysis (<72hr remaining):		–		7.	
Rush Turn Around Time Requested:		–		8.	
Sufficient Volume:	–			9.	
Correct Containers Used: -Pace Containers Used:	–	–		10.	
Containers Intact:	–			11.	
Orthophosphate field filtered			–	12.	
Hex Cr Aqueous sample field filtered			–	13.	
Organic Samples checked for dechlorination:	–			14.	
Filtered volume received for Dissolved tests			–	15.	
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	–			16.	
All containers meet method preservation requirements.	–			Initial when completed: PL	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			–	17.	
Trip Blank Present:			–	18.	
Trip Blank Custody Seals Present			–		
Rad Samples Screened < 0.5 mrem/hr			–	Initial when completed: PL	Date: Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Pace Analytical®

Pace Greensburg Lab -Sample Container Count

Client _____ Profile Number 8266

Site 201029 Notes _____

Sample Line Item	Matrix	AG1H	AG1S	AG1T	AG2U	AG3S	AG3U	AG5U	AG5T	BG1U	BG2U	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	GCUB	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC	AG4U
1	WT				4																								
2					4																								
3																													1
4																													1
5																													1
6	↓																												1
7																													
8																													
9																													
10																													
11																													
12																													

Container Codes

Glass

GJN	1 Gallon Jug with HNO3	DG9S	40mL amber VOA vial H2SO4
AG5U	100mL amber glass unprserved	VG9U	40mL clear VOA vial
AG5T	100mL amber glass Na Thiosulfate	VG9T	40mL clear VOA vial Na Thiosul
GJN	1 Gallon Jug	VG9H	40mL clear VOA vial HCl
AG1S	1L amber glass H2SO4	JGFU	4oz amber wide jar
AG1H	1L amber glass HCl	WGFU	4oz wide jar unpreserved
AG1T	1L amber glass Na Thiosulfate	BG2U	500mL clear glass unpreserved
BG1U	1L clear glass unpreserved	AG2U	500mL amber glass unpreserve
AG3S	250mL amber glass H2SO4	WGKU	8oz wide jar unpreserved
AG3U	250mL amber glass unpreserved		

Plastic / Misc.

GCUB	1 Gallon Cubitainer
12GN	1/2 Gallon Cubitainer
SP5T	120mL Coliform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250ml plastic NAOH
BP2S	500mL plastic H2SO4
2U	500mL plastic unpreserved

EZI	5g Encore
VOAK	Kit for Volatile Solid
I	Wipe/Swab
ZPLC	Ziploc Bag

WT	Water
SL	Solid
OL	Non-aqueous liquid
WP	Wipe

WO#: 30458214

PM: MAR Due Date: 01/10/22

CLIENT: ESL

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
P: (724) 463-8378
F: (724) 465-4209
PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
P: (570) 321-9002
F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

21 February 2022

Moody & Associates, Inc. (Washington Office)
Attn: Katie Sasala
1720 Washington Road
Washington, PA 15301

Work Order: 2012410
Project: 22-004-KS Speece Sampling

Report of Analysis

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received	Sample Notes
SO-201	2012410-01	Solid	01/28/2022 17:05	1/31/22 15:40	
SO-201 TCLP	2012410-02	Solid	01/28/2022 17:05	1/31/22 15:40	
SO-206	2012410-03	Solid	01/28/2022 17:05	1/31/22 15:40	
SO-206 TCLP	2012410-04	Solid	01/28/2022 17:05	1/31/22 15:40	
SO-208	2012410-05	Solid	01/28/2022 17:15	1/31/22 15:40	
SO-208 TCLP	2012410-06	Solid	01/28/2022 17:15	1/31/22 15:40	
SO-210	2012410-07	Solid	01/28/2022 17:40	1/31/22 15:40	
SO-210 TCLP	2012410-08	Solid	01/28/2022 17:40	1/31/22 15:40	
SO-211	2012410-09	Solid	01/28/2022 17:15	1/31/22 15:40	
SO-211 TCLP	2012410-10	Solid	01/28/2022 17:15	1/31/22 15:40	
SO-212	2012410-11	Solid	01/28/2022 17:17	1/31/22 15:40	
SO-212 TCLP	2012410-12	Solid	01/28/2022 17:17	1/31/22 15:40	
SO-216	2012410-13	Solid	01/28/2022 17:25	1/31/22 15:40	
SO-216 TCLP	2012410-14	Solid	01/28/2022 17:25	1/31/22 15:40	
SO-217	2012410-15	Solid	01/28/2022 17:35	1/31/22 15:40	
SO-217 TCLP	2012410-16	Solid	01/28/2022 17:35	1/31/22 15:40	
SO-218	2012410-17	Solid	01/28/2022 17:30	1/31/22 15:40	
SO-218 TCLP	2012410-18	Solid	01/28/2022 17:30	1/31/22 15:40	
SO-228	2012410-19	Solid	01/28/2022 17:25	1/31/22 15:40	
SO-228 TCLP	2012410-20	Solid	01/28/2022 17:25	1/31/22 15:40	

Report Narrative

The results contained in this report are only representative of the samples received. Environmental Service Laboratories, Inc. is not responsible for use or interpretation of the data included herein.

Definitions

DM Dilution required due to Matrix interference.
RL Reporting Limit

Certifications

Analyses performed by Environmental Service Laboratories, Inc., Indiana PA unless otherwise specified.

Environmental Service Laboratories, Inc., Indiana, PA/TNI Certification #32-00382

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Reported: 02/21/2022 16:12

Approved By

Alicia N Johnston

Alicia Johnston
Project Manager

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Lab Sample ID#: 2012410-01
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-201

Sample Date: 01/28/2022 17:05
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	51.0	mg/kg dry		11.9	TLL	02/17/22 20:55	02/17/22 20:55
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	80.2	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<200	ug/kg dry		200	MJK	02/03/22 15:41	02/03/22 15:41
Toluene	<200	ug/kg dry		200	MJK	02/03/22 15:41	02/03/22 15:41
Ethyl Benzene	<200	ug/kg dry		200	MJK	02/03/22 15:41	02/03/22 15:41
m,p-Xylenes	<400	ug/kg dry		400	MJK	02/03/22 15:41	02/03/22 15:41
o-Xylene	<200	ug/kg dry		200	MJK	02/03/22 15:41	02/03/22 15:41
Total Xylenes	<200	ug/kg dry		200	MJK	02/03/22 15:41	02/03/22 15:41
Surrogate: 1,2-Dichloroethane-d4	*85 %*		*80-120*		*MJK*	*02/03/22 15:41*	*02/03/22 15:41*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/03/22 15:41*	*02/03/22 15:41*
Surrogate: 4-Bromofluorobenzene	*107 %*		*86-115*		*MJK*	*02/03/22 15:41*	*02/03/22 15:41*

Lab Sample ID#: 2012410-02
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-201 TCLP

Sample Date: 01/28/2022 17:05
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	0.417	mg/L		2.00	TLL	02/10/22 01:11	02/10/22 01:11

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Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-03
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-206

Sample Date: 01/28/2022 17:05
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	39.0	mg/kg dry		11.6	TLL	02/17/22 21:13	02/17/22 21:13
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	83.4	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<189	ug/kg dry		189	MJK	02/03/22 16:06	02/03/22 16:06
Toluene	<189	ug/kg dry		189	MJK	02/03/22 16:06	02/03/22 16:06
Ethyl Benzene	<189	ug/kg dry		189	MJK	02/03/22 16:06	02/03/22 16:06
m,p-Xylenes	<378	ug/kg dry		378	MJK	02/03/22 16:06	02/03/22 16:06
o-Xylene	<189	ug/kg dry		189	MJK	02/03/22 16:06	02/03/22 16:06
Total Xylenes	<189	ug/kg dry		189	MJK	02/03/22 16:06	02/03/22 16:06
Surrogate: 1,2-Dichloroethane-d4	*86 %*		*80-120*		*MJK*	*02/03/22 16:06*	*02/03/22 16:06*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/03/22 16:06*	*02/03/22 16:06*
Surrogate: 4-Bromofluorobenzene	*107 %*		*86-115*		*MJK*	*02/03/22 16:06*	*02/03/22 16:06*

Lab Sample ID#: 2012410-04
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-206 TCLP

Sample Date: 01/28/2022 17:05
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.29	mg/L	DM	4.00	TLL	02/10/22 01:30	02/10/22 01:30

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Lab Sample ID#: 2012410-05
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-208

Sample Date: 01/28/2022 17:15
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	111	mg/kg dry		13.8	TLL	02/17/22 21:31	02/17/22 21:31
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	70.2	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<244	ug/kg dry		244	MJK	02/03/22 16:32	02/03/22 16:32
Toluene	<244	ug/kg dry		244	MJK	02/03/22 16:32	02/03/22 16:32
Ethyl Benzene	<244	ug/kg dry		244	MJK	02/03/22 16:32	02/03/22 16:32
m,p-Xylenes	<489	ug/kg dry		489	MJK	02/03/22 16:32	02/03/22 16:32
o-Xylene	<244	ug/kg dry		244	MJK	02/03/22 16:32	02/03/22 16:32
Total Xylenes	<244	ug/kg dry		244	MJK	02/03/22 16:32	02/03/22 16:32
Surrogate: 1,2-Dichloroethane-d4	*84 %*		*80-120*		*MJK*	*02/03/22 16:32*	*02/03/22 16:32*
Surrogate: Toluene-d8	*98 %*		*88-110*		*MJK*	*02/03/22 16:32*	*02/03/22 16:32*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/03/22 16:32*	*02/03/22 16:32*

Lab Sample ID#: 2012410-06
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-208 TCLP

Sample Date: 01/28/2022 17:15
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.76	mg/L		2.00	TLL	02/10/22 01:49	02/10/22 01:49

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Lab Sample ID#: 2012410-07
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-210

Sample Date: 01/28/2022 17:40
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	193	mg/kg dry		14.2	TLL	02/17/22 21:49	02/17/22 21:49
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	68.9	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<276	ug/kg dry		276	MJK	02/03/22 16:57	02/03/22 16:57
Toluene	<276	ug/kg dry		276	MJK	02/03/22 16:57	02/03/22 16:57
Ethyl Benzene	<276	ug/kg dry		276	MJK	02/03/22 16:57	02/03/22 16:57
m,p-Xylenes	<553	ug/kg dry		553	MJK	02/03/22 16:57	02/03/22 16:57
o-Xylene	<276	ug/kg dry		276	MJK	02/03/22 16:57	02/03/22 16:57
Total Xylenes	<276	ug/kg dry		276	MJK	02/03/22 16:57	02/03/22 16:57
Surrogate: 1,2-Dichloroethane-d4	*82 %*		*80-120*		*MJK*	*02/03/22 16:57*	*02/03/22 16:57*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/03/22 16:57*	*02/03/22 16:57*
Surrogate: 4-Bromofluorobenzene	*108 %*		*86-115*		*MJK*	*02/03/22 16:57*	*02/03/22 16:57*

Lab Sample ID#: 2012410-08
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-210 TCLP

Sample Date: 01/28/2022 17:40
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	3.26	mg/L		2.00	TLL	02/10/22 02:08	02/10/22 02:08

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Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-09
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-211

Sample Date: 01/28/2022 17:15
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	93.0	mg/kg dry		14.2	TLL	02/17/22 22:07	02/17/22 22:07
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	66.9	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<297	ug/kg dry		297	MJK	02/03/22 17:23	02/03/22 17:23
Toluene	<297	ug/kg dry		297	MJK	02/03/22 17:23	02/03/22 17:23
Ethyl Benzene	<297	ug/kg dry		297	MJK	02/03/22 17:23	02/03/22 17:23
m,p-Xylenes	<594	ug/kg dry		594	MJK	02/03/22 17:23	02/03/22 17:23
o-Xylene	<297	ug/kg dry		297	MJK	02/03/22 17:23	02/03/22 17:23
Total Xylenes	<297	ug/kg dry		297	MJK	02/03/22 17:23	02/03/22 17:23
Surrogate: 1,2-Dichloroethane-d4	*85 %*		*80-120*		*MJK*	*02/03/22 17:23*	*02/03/22 17:23*
Surrogate: Toluene-d8	*99 %*		*88-110*		*MJK*	*02/03/22 17:23*	*02/03/22 17:23*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/03/22 17:23*	*02/03/22 17:23*

Lab Sample ID#: 2012410-10
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-211 TCLP

Sample Date: 01/28/2022 17:15
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.29	mg/L	DM	4.00	TLL	02/10/22 02:27	02/10/22 02:27

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Lab Sample ID#: 2012410-11
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-212

Sample Date: 01/28/2022 17:17
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	167	mg/kg dry		13.3	TLL	02/17/22 23:01	02/17/22 23:01
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	74.8	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<222	ug/kg dry		222	MJK	02/03/22 17:48	02/03/22 17:48
Toluene	<222	ug/kg dry		222	MJK	02/03/22 17:48	02/03/22 17:48
Ethyl Benzene	<222	ug/kg dry		222	MJK	02/03/22 17:48	02/03/22 17:48
m,p-Xylenes	<443	ug/kg dry		443	MJK	02/03/22 17:48	02/03/22 17:48
o-Xylene	<222	ug/kg dry		222	MJK	02/03/22 17:48	02/03/22 17:48
Total Xylenes	<222	ug/kg dry		222	MJK	02/03/22 17:48	02/03/22 17:48
Surrogate: 1,2-Dichloroethane-d4	*84 %*		*80-120*		*MJK*	*02/03/22 17:48*	*02/03/22 17:48*
Surrogate: Toluene-d8	*100 %*		*88-110*		*MJK*	*02/03/22 17:48*	*02/03/22 17:48*
Surrogate: 4-Bromofluorobenzene	*109 %*		*86-115*		*MJK*	*02/03/22 17:48*	*02/03/22 17:48*

Lab Sample ID#: 2012410-12
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-212 TCLP

Sample Date: 01/28/2022 17:17
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.03	mg/L	DM	4.00	TLL	02/10/22 03:24	02/10/22 03:24

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Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-13
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-216

Sample Date: 01/28/2022 17:25
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	19.3	mg/kg dry		13.4	TLL	02/17/22 23:19	02/17/22 23:19
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	74.5	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<316	ug/kg dry		316	MJK	02/03/22 18:13	02/03/22 18:13
Toluene	<316	ug/kg dry		316	MJK	02/03/22 18:13	02/03/22 18:13
Ethyl Benzene	<316	ug/kg dry		316	MJK	02/03/22 18:13	02/03/22 18:13
m,p-Xylenes	<632	ug/kg dry		632	MJK	02/03/22 18:13	02/03/22 18:13
o-Xylene	<316	ug/kg dry		316	MJK	02/03/22 18:13	02/03/22 18:13
Total Xylenes	<316	ug/kg dry		316	MJK	02/03/22 18:13	02/03/22 18:13
Surrogate: 1,2-Dichloroethane-d4	*85 %*		*80-120*		*MJK*	*02/03/22 18:13*	*02/03/22 18:13*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/03/22 18:13*	*02/03/22 18:13*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/03/22 18:13*	*02/03/22 18:13*

Lab Sample ID#: 2012410-14
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-216 TCLP

Sample Date: 01/28/2022 17:25
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.26	mg/L	DM	4.00	TLL	02/10/22 03:43	02/10/22 03:43

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
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F: (724) 465-4209
PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
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F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-15
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-217

Sample Date: 01/28/2022 17:35
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	511	mg/kg dry		13.5	TLL	02/17/22 23:37	02/17/22 23:37
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	70.5	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<271	ug/kg dry		271	MJK	02/03/22 18:38	02/03/22 18:38
Toluene	<271	ug/kg dry		271	MJK	02/03/22 18:38	02/03/22 18:38
Ethyl Benzene	<271	ug/kg dry		271	MJK	02/03/22 18:38	02/03/22 18:38
m,p-Xylenes	<542	ug/kg dry		542	MJK	02/03/22 18:38	02/03/22 18:38
o-Xylene	<271	ug/kg dry		271	MJK	02/03/22 18:38	02/03/22 18:38
Total Xylenes	<271	ug/kg dry		271	MJK	02/03/22 18:38	02/03/22 18:38
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/03/22 18:38*	*02/03/22 18:38*
Surrogate: Toluene-d8	*98 %*		*88-110*		*MJK*	*02/03/22 18:38*	*02/03/22 18:38*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/03/22 18:38*	*02/03/22 18:38*

Lab Sample ID#: 2012410-16
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-217 TCLP

Sample Date: 01/28/2022 17:35
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	0.846	mg/L	DM	4.00	TLL	02/10/22 04:02	02/10/22 04:02

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PADEP: 41-04880

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F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-17
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-218

Sample Date: 01/28/2022 17:30
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	104	mg/kg dry		12.9	TLL	02/17/22 23:55	02/17/22 23:55
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	75.2	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<288	ug/kg dry		288	MJK	02/03/22 19:04	02/03/22 19:04
Toluene	<288	ug/kg dry		288	MJK	02/03/22 19:04	02/03/22 19:04
Ethyl Benzene	<288	ug/kg dry		288	MJK	02/03/22 19:04	02/03/22 19:04
m,p-Xylenes	<577	ug/kg dry		577	MJK	02/03/22 19:04	02/03/22 19:04
o-Xylene	<288	ug/kg dry		288	MJK	02/03/22 19:04	02/03/22 19:04
Total Xylenes	<288	ug/kg dry		288	MJK	02/03/22 19:04	02/03/22 19:04
Surrogate: 1,2-Dichloroethane-d4	*84 %*		*80-120*		*MJK*	*02/03/22 19:04*	*02/03/22 19:04*
Surrogate: Toluene-d8	*98 %*		*88-110*		*MJK*	*02/03/22 19:04*	*02/03/22 19:04*
Surrogate: 4-Bromofluorobenzene	*108 %*		*86-115*		*MJK*	*02/03/22 19:04*	*02/03/22 19:04*

Lab Sample ID#: 2012410-18
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-218 TCLP

Sample Date: 01/28/2022 17:30
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	0.942	mg/L	DM	4.00	TLL	02/10/22 04:21	02/10/22 04:21

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PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/21/2022 16:12

Lab Sample ID#: 2012410-19
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-228

Sample Date: 01/28/2022 17:25
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	51.5	mg/kg dry		14.3	TLL	02/18/22 00:13	02/18/22 00:13
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	68.5	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<263	ug/kg dry		263	MJK	02/03/22 19:29	02/03/22 19:29
Toluene	<263	ug/kg dry		263	MJK	02/03/22 19:29	02/03/22 19:29
Ethyl Benzene	<263	ug/kg dry		263	MJK	02/03/22 19:29	02/03/22 19:29
m,p-Xylenes	<527	ug/kg dry		527	MJK	02/03/22 19:29	02/03/22 19:29
o-Xylene	<263	ug/kg dry		263	MJK	02/03/22 19:29	02/03/22 19:29
Total Xylenes	<263	ug/kg dry		263	MJK	02/03/22 19:29	02/03/22 19:29
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/03/22 19:29*	*02/03/22 19:29*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/03/22 19:29*	*02/03/22 19:29*
Surrogate: 4-Bromofluorobenzene	*107 %*		*86-115*		*MJK*	*02/03/22 19:29*	*02/03/22 19:29*

Lab Sample ID#: 2012410-20
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-228 TCLP

Sample Date: 01/28/2022 17:25
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	0.984	mg/L	DM	4.00	TLL	02/10/22 04:40	02/10/22 04:40

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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Indiana, PA 15701
P: 724-463-TEST
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Van Voorhis, PA 15366
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F: 724-258-8376

2012410

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE ___1___ OF __3___

Chain of Custody

(Updated July 2016)

Sample Identification	2012410 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
SO-201	01/02	1/28/2022	1705	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-206	05/04	1/28/2022	1705	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-208	05/06	1/28/2022	1715	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-210	07/08	1/28/2022	1740	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	**Matrix:**	**Container Type:**	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD

1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Sampled By: (Signature) Jona M Stoskey /Moody	Date/Time 1/31/22 1145	Received By: (Signature) Tom Mel	Date/Time 1-31-22 11:45
Relinquished By: (Signature) Tom Mel	Date/Time 1-31-22 11:55	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 1536	Received By: (Signature)	Date/Time 1/31/22 1540

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampler: Marisa Michalski and Jona Stoskey

Project #: 22-004-KS

Project Name: Speece Sampling

Project Manager: Katie Sasala

Invoice to: Bill Directly to SWN c/o Joshua Boyda

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia St.
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Van Voorhis, PA 15366
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1200 River Avenue
Williamsport, PA 17701
P:
F

2012410

SAMPLE REQUEST & CHAIN OF CUSTODY

Chain of Custody
(Updated July 2016)

Sample Identification	2012410 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
SO-211	09A0	1/28/2022	1715	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-212	11A2	1/28/2022	1717	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-216	13A4	1/28/2022	1725	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-217	15A6	1/28/2022	1735	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	Matrix:	Container Type:	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
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Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampled By: (Signature) Tom M Moody / Moody	Date/Time 1/31/22 1145	Received By: (Signature) Tom Mck	Date/Time 1-31-22 11:45
Relinquished By: (Signature) Tom Mck	Date/Time 1-31-22 1135	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 1530	Received By: (Signature)	Date/Time 1/31/22 1540 IWEN

Sampler: Marisa Michalski and Jona Stoskey

Project #: 22-004-KS

Project Name: Speece Sampling

Project Manager: Katie Sasala

Invoice to: Bill Directly to SWN c/o Joshua Boyda

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia St.
Indiana, PA 15701
P: 724-463-TEST
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1276 Bentleyville Rd.
Van Voorhis, PA 15366
P: 724-258-TEST
F: 724-258-8376

1200 Rive
Williamsp
P: 570-3
F: 570-3

2012410

SAMPLE REQUEST & CHAIN OF CUSTODY

Chain of Custody

(Updated July 2016)

Sample Identification	ESL# (2012410)	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
SO-218	17/8	1/28/2022	1730	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
SO-228	19/20	1/28/2022	1725	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:
G = Grab
C = Composite
D = Discharge
O = Other

Matrix:
AQ = Water
SO = Soil
SL = Sludge
O = Other (list)

Container Type:
P = Plastic
G = Glass
AG = Amber glass
VV = VOA Vial

Other: list

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
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Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampled By: (Signature)	Date/Time 1/31/22 1145	Received By: (Signature)	Date/Time 1-31-22 11:45
Relinquished By: (Signature)	Date/Time 1-31-22 1155	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 1530	Received By: (Signature)	Date/Time 1/31/22 1540

Sampler: Marisa Michalski and Jona Stoskey

Project #: 22-004-KS

Project Name: Speece Sampling

Project Manager: Katie Sasala

Invoice to: Bill Directly to SWN c/o Joshua Boyda

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE RECEIPT AND REVIEW FORM

Client: Moody	Work Orde 2012410

PART A: GENERAL INFORMATION- SATELLITE LABORATORY

Received by/Lab ID:	**Date/Time Received:** / / _____
Method of Delivery: Client Drop-Off ESL Courier Other: _____	**Received on Ice?** YES NO
Sample Receipt Temperature: _____ °C	**IR Gun ID:**
Containers Removed by Satellite Lab for Analysis of: FECAL TC/EC TC MPN EC MPN TC/EC MPN N/A	

PART B: GENERAL INFORMATION- INDIANA LABORATORY

Received by/Lab ID: SM (00382)	**Samples Received on Ice?** (YES) NO
Date/Time Received: 1/31/22 1540	**Date Sampled:** 1/25/22
Method of Delivery: FedEx UPS Client Drop off (ESL courier) Other: _____	
Sample Receipt Temperature: 4.0 °C	**IR Gun ID:** 3
Sample State of Collection: (PA) NY OH WV Other: _____	**PWSID Compliance Drinking Water Samples:** YES (NO)

PART C: Receipt Details

Completed (if different from above): _____ / / _____
Signature Date Time

Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)
Chain of custody documents included with samples?	(YES) NO	Comments:
COC form is properly signed in relinquished/received sections?	(YES) NO	Comments:
Sample containers intact and sealed?	(YES) NO	Circle Applicable: Damaged Container Leaking Container Custody Seal Broken Other: _____
Number of containers received matches number indicated on COC?	(YES) NO	Sample IDs and Containers Affected:
Sample IDs on COC match IDs on bottles?	(YES) NO	Sample IDs and Containers Affected:
Date and time on COC match date and time on bottles?	(YES) NO	Sample IDs and Containers Affected:
Samples received within holding time?	(YES) NO	Sample IDs and Containers Affected:
Samples received at appropriate pH for analysis requested?	(YES) NO	Sample IDs and Containers Affected and Observed pH:
Samples requiring thermal preservation within 0 ≤ 6°C? Microbiology within 0 ≤ 10°C?	(YES) NO	For non-WV samples outside of thermal preservation range sampled same day and received on ice are considered acceptable as long as the cooling process has begun.
Adequate sample volume received?	(YES) NO	Analyses Affected:
VOA vials free of headspace (defined as < 6 mm bubble)?	YES (NO)	Sample IDs and Containers Affected:
Other Comments:		**Deficiency Log Created:** YES (NO)

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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F: 724-258-

2012410

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE ___1___ OF __3___

Chain of Custody

(Updated July 2016)

Sample Identification	2012415 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
BG-01	01102	1/28/2022	1800	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-02	03104	1/28/2022	1805	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-03	03105	1/28/2022	1810	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-04	03106	1/28/2022	1815	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	Matrix:	Container Type:	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD

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Sampled By: (Signature) James M Stanley / Moody	Date/Time 1/31/22 1145	Received By: (Signature) Tom McC	Date/Time 1-31-22 11:45
Relinquished By: (Signature) Tom McC	Date/Time 1-31-22 1155	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature) 1/31/22	Date/Time 1530	Received By: (Signature) 1/31/22	Date/Time 1540

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampler: Marisa Michalski and Jona Stoskey

Project #:	22-004-KS
Project Name:	Speece Sampling
Project Manager:	Katie Sasala
Invoice to:	Bill Directly to SWN c/o Joshua Boyda

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P: 724-258-TEST
F: 724-258-8376

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Williamspor
P: 570-321-
F: 570-321-

2012410

SAMPLE REQUEST & CHAIN OF CUSTODY

PAGE 2 OF 3

Chain of Custody

(Updated July 2016)

Sample Identification	2012415 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
BG-05	0910	1/28/2022	1820	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-06	1112	1/28/2022	1825	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-07	1314	1/28/2022	1830	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-08	1516	1/28/2022	1835	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	Matrix:	Container Type:	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Sampled By: (Signature) Jona Stoskey / Moody	Date/Time 1/31/22 1145	Received By: (Signature) Jim Mc	Date/Time 1/31/22 11:45
Relinquished By: (Signature) Jim Mc	Date/Time 1-31-22 11:55	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 1830	Received By: (Signature)	Date/Time 1/31/22 1510 IONJEN

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampler: Marisa Michalski and Jona Stoskey

Project #:	22-004-KS
Project Name:	Speece Sampling
Project Manager:	Katie Sasala
Invoice to:	Bill Directly to SWN c/o Joshua Boyda

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia St.
Indiana, PA 15701
P: 724-463-TEST
F: 724-465-4209

1276 Bentleyville Rd.
Van Voorhis, PA 15366
P: 724-258-TEST
F: 724-258-8376

1200 River Avenue
Williamsport, PA
P: 570-321-9002
F: 570-321-1957

2012410

SAMPLE REQUEST & CHAIN OF CUSTODY

Chain of Custody

(Updated July 2016)

Sample Identification	2012415 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
BG-09	17/8	1/28/2022	1840	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-10	19/20	1/28/2022	1845	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:
G = Grab
C = Composite
D = Discharge
O = Other

Matrix:
AQ = Water
SO = Soil
SL = Sludge
O = Other (list)

Container Type:
P = Plastic
G = Glass
AG = Amber glass
VV = VOA Vial

Other: list

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampled By: (Signature) / Moody	Date/Time 1/31/22 1145	Received By: (Signature)	Date/Time 1-31-22 11:45
Relinquished By: (Signature)	Date/Time 1-31-22 11:55	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 15:30	Received By: (Signature) CD	Date/Time 1/31/22 15:40

Sampler: Marisa Michalski and Jona Stoskey

Project #:	22-004-KS
Project Name:	Speece Sampling
Project Manager:	Katie Sasala
Invoice to:	Bill Directly to SWN c/o Joshua Boyda

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE RECEIPT AND REVIEW FORM

Client: Moody	Work Orc 2012410

PART A: GENERAL INFORMATION- SATELLITE LABORATORY

Received by/Lab ID:	**Date/Time Received:** / / _____
Method of Delivery: Client Drop-Off ESL Courier Other: _____	Received on Ice? YES NO
Sample Receipt Temperature: _____ °C	IR Gun ID:
Containers Removed by Satellite Lab for Analysis of: FECAL TC/EC TC MPN EC MPN TC/EC MPN N/A	

PART B: GENERAL INFORMATION- INDIANA LABORATORY

Received by/Lab ID: ~~JW~~ (005382)	**Samples Received on Ice?** (YES) NO
Date/Time Received: 1/31/22 1540	**Date Sampled:** 1/28/22
Method of Delivery: FedEx UPS Client Drop off (ESL courier) Other: _____	
Sample Receipt Temperature: 4.0 °C	IR Gun ID: 3
Sample State of Collection: (PA) NY OH WV Other: _____	PWSID Compliance Drinking Water Samples: YES (NO)

PART C: Receipt Details

Completed (if different from above): _____ / / _____
Signature Date Time

Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)
Chain of custody documents included with samples?	(YES) NO	Comments:
COC form is properly signed in relinquished/received sections?	(YES) NO	Comments:
Sample containers intact and sealed?	(YES) NO	Circle Applicable: Damaged Container Leaking Container Custody Seal Broken Other: _____
Number of containers received matches number indicated on COC?	(YES) NO	Sample IDs and Containers Affected:
Sample IDs on COC match IDs on bottles?	(YES) NO	Sample IDs and Containers Affected:
Date and time on COC match date and time on bottles?	(YES) NO	Sample IDs and Containers Affected:
Samples received within holding time?	(YES) NO	Sample IDs and Containers Affected:
Samples received at appropriate pH for analysis requested?	(YES) NO	Sample IDs and Containers Affected and Observed pH:
Samples requiring thermal preservation within 0 ≤ 6°C? Microbiology within 0 ≤ 10°C?	(YES) NO	For non-WV samples outside of thermal preservation range sampled same day and received on ice are considered acceptable as long as the cooling process has begun.
Adequate sample volume received?	(YES) NO	Analyses Affected:
VOA vials free of headspace (defined as < 6 mm bubble)?	YES (NO)	Sample IDs and Containers Affected:
Other Comments:		Deficiency Log Created: YES (NO)

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

February 11, 2022

Mr Richard Rodriguez
Environmental Service Laboratories, Inc.
1803 Philadelphia Street
Indiana, PA 15701

RE: Project: 2012410
Pace Project No.: 30461754

Dear Mr Rodriguez:

Enclosed are the analytical results for sample(s) received by the laboratory on February 01, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Megan A Rager

Megan A. Rager
megan.rager@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Sierra Grguric, Environmental Service Laboratories, Inc.

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Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 2012410
Pace Project No.: 30461754

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Florida: Cert E871149 SEKS WET
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: 2012410
Pace Project No.: 30461754

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30461754001	**2012410-01**	Solid	01/28/22 17:05	02/01/22 15:30
30461754002	**2012410-03**	Solid	01/28/22 17:05	02/01/22 15:30
30461754003	**2012410-05**	Solid	01/28/22 17:15	02/01/22 15:30
30461754004	**2012410-07**	Solid	01/28/22 17:40	02/01/22 15:30
30461754005	**2012410-09**	Solid	01/28/22 17:15	02/01/22 15:30
30461754006	**2012410-11**	Solid	01/28/22 17:17	02/01/22 15:30
30461754007	**2012410-13**	Solid	01/28/22 17:25	02/01/22 15:30
30461754008	**2012410-15**	Solid	01/28/22 17:35	02/01/22 15:30
30461754009	**2012410-17**	Solid	01/28/22 17:30	02/01/22 15:30
30461754010	**2012410-19**	Solid	01/28/22 17:25	02/01/22 15:30

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SAMPLE ANALYTE COUNT

Project: 2012410
Pace Project No.: 30461754

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30461754001	**2012410-01**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754002	**2012410-03**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754003	**2012410-05**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754004	**2012410-07**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754005	**2012410-09**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754006	**2012410-11**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754007	**2012410-13**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754008	**2012410-15**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754009	**2012410-17**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461754010	**2012410-19**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-01 **Lab ID: 30461754001** Collected: 01/28/22 17:05 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	83-32-9	
Acenaphthylene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	208-96-8	
Anthracene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	120-12-7	
Benzo(a)anthracene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	56-55-3	
Benzo(a)pyrene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	207-08-9	
Chrysene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	53-70-3	
Fluoranthene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	206-44-0	
Fluorene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	193-39-5	
Naphthalene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	91-20-3	
Phenanthrene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	85-01-8	
Pyrene	ND	ug/kg	7.9	1	02/10/22 08:58	02/10/22 21:34	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	37-88	1	02/10/22 08:58	02/10/22 21:34	321-60-8	
Terphenyl-d14 (S)	81	%.	10-128	1	02/10/22 08:58	02/10/22 21:34	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**16.6**	%	0.10	1		02/03/22 10:44		

Sample: 2012410-03 **Lab ID: 30461754002** Collected: 01/28/22 17:05 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	83-32-9	
Acenaphthylene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	208-96-8	
Anthracene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	120-12-7	
Benzo(a)anthracene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	56-55-3	
Benzo(a)pyrene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	207-08-9	
Chrysene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	53-70-3	
Fluoranthene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	206-44-0	
Fluorene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	193-39-5	

REPORT OF LABORATORY ANALYSIS

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-03 **Lab ID: 30461754002** Collected: 01/28/22 17:05 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Naphthalene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	91-20-3	
Phenanthrene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	85-01-8	
Pyrene	ND	ug/kg	8.3	1	02/10/22 08:58	02/10/22 21:54	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	37-88	1	02/10/22 08:58	02/10/22 21:54	321-60-8	
Terphenyl-d14 (S)	81	%.	10-128	1	02/10/22 08:58	02/10/22 21:54	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**20.3**	%	0.10	1		02/03/22 10:44		

Sample: 2012410-05 **Lab ID: 30461754003** Collected: 01/28/22 17:15 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	83-32-9	
Acenaphthylene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	208-96-8	
Anthracene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	207-08-9	
Chrysene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	53-70-3	
Fluoranthene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	206-44-0	
Fluorene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	193-39-5	
Naphthalene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	91-20-3	
Phenanthrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	85-01-8	
Pyrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 22:14	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	77	%.	37-88	1	02/10/22 08:58	02/10/22 22:14	321-60-8	
Terphenyl-d14 (S)	79	%.	10-128	1	02/10/22 08:58	02/10/22 22:14	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**29.2**	%	0.10	1		02/03/22 10:44		

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-07 **Lab ID: 30461754004** Collected: 01/28/22 17:40 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	83-32-9	
Acenaphthylene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	208-96-8	
Anthracene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	120-12-7	
Benzo(a)anthracene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	56-55-3	
Benzo(a)pyrene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	207-08-9	
Chrysene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	53-70-3	
Fluoranthene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	206-44-0	
Fluorene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	193-39-5	
Naphthalene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	91-20-3	
Phenanthrene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	85-01-8	
Pyrene	ND	ug/kg	10.2	1	02/10/22 08:58	02/10/22 22:33	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	76	%.	37-88	1	02/10/22 08:58	02/10/22 22:33	321-60-8	
Terphenyl-d14 (S)	78	%.	10-128	1	02/10/22 08:58	02/10/22 22:33	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**34.7**	%	0.10	1		02/03/22 10:44		

Sample: 2012410-09 **Lab ID: 30461754005** Collected: 01/28/22 17:15 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	83-32-9	
Acenaphthylene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	208-96-8	
Anthracene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	207-08-9	
Chrysene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	53-70-3	
Fluoranthene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	206-44-0	
Fluorene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	193-39-5	

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ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-09 **Lab ID: 30461754005** Collected: 01/28/22 17:15 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Naphthalene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	91-20-3	
Phenanthrene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	85-01-8	
Pyrene	ND	ug/kg	9.9	1	02/10/22 08:58	02/10/22 22:53	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	37-88	1	02/10/22 08:58	02/10/22 22:53	321-60-8	
Terphenyl-d14 (S)	78	%.	10-128	1	02/10/22 08:58	02/10/22 22:53	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**34.2**	%	0.10	1		02/03/22 10:44		

Sample: 2012410-11 **Lab ID: 30461754006** Collected: 01/28/22 17:17 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	83-32-9	
Acenaphthylene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	208-96-8	
Anthracene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	120-12-7	
Benzo(a)anthracene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	56-55-3	
Benzo(a)pyrene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	50-32-8	
Benzo(b)fluoranthene	**26.6**	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	191-24-2	
Benzo(k)fluoranthene	**26.7**	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	207-08-9	lp
Chrysene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	53-70-3	
Fluoranthene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	206-44-0	
Fluorene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	193-39-5	
Naphthalene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	91-20-3	
Phenanthrene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	85-01-8	
Pyrene	ND	ug/kg	8.7	1	02/10/22 08:58	02/10/22 23:13	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	37-88	1	02/10/22 08:58	02/10/22 23:13	321-60-8	
Terphenyl-d14 (S)	79	%.	10-128	1	02/10/22 08:58	02/10/22 23:13	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**23.1**	%	0.10	1		02/03/22 10:41		

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ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-13 **Lab ID: 30461754007** Collected: 01/28/22 17:25 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	83-32-9	
Acenaphthylene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	208-96-8	
Anthracene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	120-12-7	
Benzo(a)anthracene	**17.3**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	50-32-8	IS
Benzo(b)fluoranthene	**122**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	205-99-2	IS,lp
Benzo(g,h,i)perylene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	191-24-2	IS
Benzo(k)fluoranthene	**122**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	207-08-9	IS,lp
Chrysene	**84.4**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	53-70-3	IS
Fluoranthene	**41.6**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	206-44-0	
Fluorene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	193-39-5	IS
Naphthalene	**18.7**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	91-20-3	
Phenanthrene	**91.6**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	85-01-8	
Pyrene	**41.8**	ug/kg	9.6	1	02/10/22 08:58	02/10/22 23:32	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	81	%.	37-88	1	02/10/22 08:58	02/10/22 23:32	321-60-8	
Terphenyl-d14 (S)	79	%.	10-128	1	02/10/22 08:58	02/10/22 23:32	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**31.6**	%	0.10	1		02/03/22 10:41		

Sample: 2012410-15 **Lab ID: 30461754008** Collected: 01/28/22 17:35 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	83-32-9	
Acenaphthylene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	208-96-8	
Anthracene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	120-12-7	
Benzo(a)anthracene	**29.6**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	56-55-3	
Benzo(a)pyrene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	50-32-8	IS
Benzo(b)fluoranthene	**197**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	205-99-2	IS,lp
Benzo(g,h,i)perylene	**9.4**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	191-24-2	IS
Benzo(k)fluoranthene	**197**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	207-08-9	IS,lp
Chrysene	**142**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	53-70-3	IS
Fluoranthene	**85.9**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	206-44-0	
Fluorene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	86-73-7	
Indeno(1,2,3-cd)pyrene	**10.2**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	193-39-5	IS

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ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-15 **Lab ID: 30461754008** Collected: 01/28/22 17:35 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Naphthalene	**16.0**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	91-20-3	
Phenanthrene	**393**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	85-01-8	
Pyrene	**87.8**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 23:52	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	83	%.	37-88	1	02/10/22 08:58	02/10/22 23:52	321-60-8	
Terphenyl-d14 (S)	79	%.	10-128	1	02/10/22 08:58	02/10/22 23:52	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**25.7**	%	0.10	1		02/03/22 10:41		

Sample: 2012410-17 **Lab ID: 30461754009** Collected: 01/28/22 17:30 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	83-32-9	
Acenaphthylene	ND	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	208-96-8	
Anthracene	**11.8**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	120-12-7	
Benzo(a)anthracene	**102**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	56-55-3	
Benzo(a)pyrene	**57.0**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	50-32-8	IS
Benzo(b)fluoranthene	**424**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	205-99-2	IS,lp
Benzo(g,h,i)perylene	**23.2**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	191-24-2	IS
Benzo(k)fluoranthene	**425**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	207-08-9	IS,lp
Chrysene	**294**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	218-01-9	
Dibenz(a,h)anthracene	**16.7**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	53-70-3	IS
Fluoranthene	**205**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	206-44-0	
Fluorene	ND	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	86-73-7	
Indeno(1,2,3-cd)pyrene	**24.9**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	193-39-5	IS
Naphthalene	**852**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	91-20-3	
Phenanthrene	**1310**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	85-01-8	
Pyrene	**620**	ug/kg	8.8	1	02/10/22 08:58	02/11/22 00:12	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	81	%.	37-88	1	02/10/22 08:58	02/11/22 00:12	321-60-8	
Terphenyl-d14 (S)	76	%.	10-128	1	02/10/22 08:58	02/11/22 00:12	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**24.9**	%	0.10	1		02/03/22 10:41		

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ANALYTICAL RESULTS

Project: 2012410
Pace Project No.: 30461754

Sample: 2012410-19 **Lab ID: 30461754010** Collected: 01/28/22 17:25 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	83-32-9	
Acenaphthylene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	208-96-8	
Anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	50-32-8	
Benzo(b)fluoranthene	**90.7**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	191-24-2	
Benzo(k)fluoranthene	**90.9**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	207-08-9	lp
Chrysene	**40.3**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	53-70-3	
Fluoranthene	**12.4**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	206-44-0	
Fluorene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	193-39-5	
Naphthalene	**12.1**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	91-20-3	
Phenanthrene	**28.6**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	85-01-8	
Pyrene	**13.5**	ug/kg	9.2	1	02/10/22 08:58	02/11/22 00:31	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	74	%.	37-88	1	02/10/22 08:58	02/11/22 00:31	321-60-8	
Terphenyl-d14 (S)	67	%.	10-128	1	02/10/22 08:58	02/11/22 00:31	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**29.2**	%	0.10	1		02/03/22 10:41		

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QUALITY CONTROL DATA

Project: 2012410
Pace Project No.: 30461754

QC Batch: 482841
QC Batch Method: EPA 3546
Analysis Method: EPA 8270D by SIM
Analysis Description: 8270D/3546 MSSV PAH by SIM
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461754001, 30461754002, 30461754003, 30461754004, 30461754005, 30461754006, 30461754007, 30461754008, 30461754009, 30461754010

METHOD BLANK: 2333958 Matrix: Solid
Associated Lab Samples: 30461754001, 30461754002, 30461754003, 30461754004, 30461754005, 30461754006, 30461754007, 30461754008, 30461754009, 30461754010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acenaphthene	ug/kg	ND	6.6	02/10/22 15:41	
Acenaphthylene	ug/kg	ND	6.6	02/10/22 15:41	
Anthracene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(a)anthracene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(a)pyrene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(b)fluoranthene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(g,h,i)perylene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(k)fluoranthene	ug/kg	ND	6.6	02/10/22 15:41	
Chrysene	ug/kg	ND	6.6	02/10/22 15:41	
Dibenz(a,h)anthracene	ug/kg	ND	6.6	02/10/22 15:41	
Fluoranthene	ug/kg	ND	6.6	02/10/22 15:41	
Fluorene	ug/kg	ND	6.6	02/10/22 15:41	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	6.6	02/10/22 15:41	
Naphthalene	ug/kg	ND	6.6	02/10/22 15:41	
Phenanthrene	ug/kg	ND	6.6	02/10/22 15:41	
Pyrene	ug/kg	ND	6.6	02/10/22 15:41	
2-Fluorobiphenyl (S)	%.	84	37-88	02/10/22 15:41	
Terphenyl-d14 (S)	%.	86	10-128	02/10/22 15:41	

LABORATORY CONTROL SAMPLE: 2333959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/kg	129	103	80	47-104	
Acenaphthylene	ug/kg	129	106	82	49-115	
Anthracene	ug/kg	129	108	84	52-115	
Benzo(a)anthracene	ug/kg	129	108	83	54-130	
Benzo(a)pyrene	ug/kg	129	111	86	59-126	
Benzo(b)fluoranthene	ug/kg	129	124	96	55-133	
Benzo(g,h,i)perylene	ug/kg	129	129	100	54-127	
Benzo(k)fluoranthene	ug/kg	129	122	94	56-120	
Chrysene	ug/kg	129	109	84	56-115	
Dibenz(a,h)anthracene	ug/kg	129	137	106	55-129	
Fluoranthene	ug/kg	129	115	89	56-125	
Fluorene	ug/kg	129	108	84	50-114	
Indeno(1,2,3-cd)pyrene	ug/kg	129	138	106	55-129	
Naphthalene	ug/kg	129	90.0	70	45-102	
Phenanthrene	ug/kg	129	108	84	50-110	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 2012410
Pace Project No.: 30461754

LABORATORY CONTROL SAMPLE: 2333959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Pyrene	ug/kg	129	114	89	56-122	
2-Fluorobiphenyl (S)	%.			76	37-88	
Terphenyl-d14 (S)	%.			78	10-128	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2333960 2333961

Parameter	Units	30461753001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acenaphthene	ug/kg	ND	170	170	140	146	82	86	24-109	4	20	
Acenaphthylene	ug/kg	ND	170	170	144	151	85	89	26-119	4	20	
Anthracene	ug/kg	ND	170	170	145	151	85	88	32-115	4	20	
Benzo(a)anthracene	ug/kg	ND	170	170	137	141	81	83	30-133	3	20	
Benzo(a)pyrene	ug/kg	ND	170	170	123	128	72	75	11-151	4	20	
Benzo(b)fluoranthene	ug/kg	45.2	170	170	194	204	88	93	25-140	5	20	
Benzo(g,h,i)perylene	ug/kg	ND	170	170	67.2	63.8	38	36	10-126	5	20	
Benzo(k)fluoranthene	ug/kg	45.3	170	170	172	185	75	82	25-127	7	20	
Chrysene	ug/kg	ND	170	170	139	143	77	80	10-142	3	20	
Dibenz(a,h)anthracene	ug/kg	ND	170	170	113	110	67	65	13-127	3	20	
Fluoranthene	ug/kg	ND	170	170	148	153	86	89	20-139	3	20	
Fluorene	ug/kg	ND	170	170	149	155	88	91	28-114	4	20	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	170	170	99.2	95.8	56	54	15-123	4	20	
Naphthalene	ug/kg	ND	170	170	121	123	70	71	15-104	2	20	
Phenanthrene	ug/kg	ND	170	170	148	152	84	87	10-135	3	20	
Pyrene	ug/kg	ND	170	170	146	150	86	88	13-139	3	20	
2-Fluorobiphenyl (S)	%.						80	81	37-88			
Terphenyl-d14 (S)	%.						79	81	10-128			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 2012410
Pace Project No.: 30461754

QC Batch: 481454
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461754001, 30461754002, 30461754003, 30461754004, 30461754005

SAMPLE DUPLICATE: 2326470

Parameter	Units	30461472001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	28.5	27.1	5	20	

SAMPLE DUPLICATE: 2326471

Parameter	Units	30461643001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	27.7	24.5	13	20	

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REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 2012410
Pace Project No.: 30461754

QC Batch: 481455
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461754006, 30461754007, 30461754008, 30461754009, 30461754010

SAMPLE DUPLICATE: 2326477

Parameter	Units	30461754006 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.1	23.3	1	20	

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REPORT OF LABORATORY ANALYSIS

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 2012410
Pace Project No.: 30461754

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

IS	The internal standard response is below criteria. Results may be biased high.
Ip	Benzo(b)fluoranthene and benzo(k)fluoranthene were separated in the check standard but did not meet the resolution criteria specified in the test method. Sample results included are reported as individual isomers, but the lab and the client must recognize them as an isomeric pair.

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2012410
Pace Project No.: 30461754

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30461754001	**2012410-01**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754002	**2012410-03**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754003	**2012410-05**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754004	**2012410-07**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754005	**2012410-09**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754006	**2012410-11**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754007	**2012410-13**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754008	**2012410-15**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754009	**2012410-17**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754010	**2012410-19**	EPA 3546	482841	EPA 8270D by SIM	483191
30461754001	**2012410-01**	ASTM D2974-87	481454		
30461754002	**2012410-03**	ASTM D2974-87	481454		
30461754003	**2012410-05**	ASTM D2974-87	481454		
30461754004	**2012410-07**	ASTM D2974-87	481454		
30461754005	**2012410-09**	ASTM D2974-87	481454		
30461754006	**2012410-11**	ASTM D2974-87	481455		
30461754007	**2012410-13**	ASTM D2974-87	481455		
30461754008	**2012410-15**	ASTM D2974-87	481455		
30461754009	**2012410-17**	ASTM D2974-87	481455		
30461754010	**2012410-19**	ASTM D2974-87	481455		

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SUBCONTRACT ORDER

WO# : 30461754

30461754

Environmental Service Laboratories

2012410

Please report all results to **reports@envlabs.com**. Conta

SENDING LABORATORY:

Environmental Service Laboratories, Inc.
1803 Philadelphia Street
Indiana, PA 15701
Phone: 724-463-8378
Fax: 724-465-4209
Project Manager: Lucas Winner

RECEIVING LABORATORY:

Pace Analytical Services, LLC.
1638 Roseytown Road - Suites 2, 3, 4
Greensburg, PA 15601
Phone :(724) 850-5600
Fax: (724) 850-5601

State of Origin: PA

Analysis	Due	Expires	Comments
Sample ID: 2012410-01 **Matrix: Solid** **Sampled: 01/28/2022 17:05** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	02/10/2022 23:00	02/27/2022 17:05	
Containers Supplied: Glass Jar, 8 oz. (A)			001
Sample ID: 2012410-03 **Matrix: Solid** **Sampled: 01/28/2022 17:05** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	02/10/2022 23:00	02/27/2022 17:05	
Containers Supplied: Glass Jar, 8 oz. (A)			002
Sample ID: 2012410-05 **Matrix: Solid** **Sampled: 01/28/2022 17:15** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	02/10/2022 23:00	02/27/2022 17:15	
Containers Supplied: Glass Jar, 8 oz. (A)			003
Sample ID: 2012410-07 **Matrix: Solid** **Sampled: 01/28/2022 17:40** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	02/10/2022 23:00	02/27/2022 17:40	
Containers Supplied: Glass Jar, 8 oz. (A)			004
Sample ID: 2012410-09 **Matrix: Solid** **Sampled: 01/28/2022 17:15** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	02/10/2022 23:00	02/27/2022 17:15	
Containers Supplied: Glass Jar, 8 oz. (A)			005
Sample ID: 2012410-11 **Matrix: Solid** **Sampled: 01/28/2022 17:17** **Sample Type: Grab** **Sampled By: Client**			
PAH SIMS	02/10/2022 23:00	02/27/2022 17:17	
Containers Supplied: Glass Jar, 8 oz. (A)			006

Released By	1/31/22 Date	Bill Gorham	Received By	2/1/22 Date	1125
Bill Gorham Released By	2/1/22 Date 1530	A Mock	Received By	02/01/22 Date	15:30

SUBCONTRACT ORDER

Environmental Service Laborator

2012410

WO# : 30461754

PM: MAR Due Date: 02/10/22

CLIENT: ESL

Please report all results to **reports@envlabs.com**. Co

Analysis	Due	Expires	Comments
Sample ID: 2012410-13			
Matrix: Solid **Sampled: 01/28/2022 17:25**	**Sample Type: Grab**		**Sampled By: Client**
PAH SIMS	02/10/2022 23:00	02/27/2022 17:25	
Containers Supplied:			007
Glass Jar, 8 oz. (A)			
Sample ID: 2012410-15			
Matrix: Solid **Sampled: 01/28/2022 17:35**	**Sample Type: Grab**		**Sampled By: Client**
PAH SIMS	02/10/2022 23:00	02/27/2022 17:35	
Containers Supplied:			008
Glass Jar, 8 oz. (A)			
Sample ID: 2012410-17			
Matrix: Solid **Sampled: 01/28/2022 17:30**	**Sample Type: Grab**		**Sampled By: Client**
PAH SIMS	02/10/2022 23:00	02/27/2022 17:30	
Containers Supplied:			009
Glass Jar, 8 oz. (A)			
Sample ID: 2012410-19			
Matrix: Solid **Sampled: 01/28/2022 17:25**	**Sample Type: Grab**		**Sampled By: Client**
PAH SIMS	02/10/2022 23:00	02/27/2022 17:25	
Containers Supplied:			010
Glass Jar, 8 oz. (A)			

Released By Date Received By Date

Released By Date Received By Date

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: ESL Project #

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other

Label AF
LIMS Login VeInc

Tracking #: N/A

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Thermometer Used AF Type of Ice: (Wet) Blue None

Cooler Temperature Observed Temp 3.5 °C Correction Factor: (0.0) °C Final Temp: 3.5 °C

Temp should be above freezing to 6°C

WO#: 30461754

PM: MAR
CLIENT: ESL
Due Date: 02/10/22

Comments:	Yes	No	N/A	pH paper Lot# N/A	Date and initials of person examining contents: 02/01/22 AF
Chain of Custody Present:	X			1.	
Chain of Custody Filled Out:		X		2. no preservation listed	
Chain of Custody Relinquished:	X			3.	
Sampler Name & Signature on COC:		X		4.	
Sample Labels match COC: -Includes date/time/ID Matrix: SL	X			5.	
Samples Arrived within Hold Time:	X			6.	
Short Hold Time Analysis (<72hr remaining):		X		7.	
Rush Turn Around Time Requested:		X		8.	
Sufficient Volume:	X			9.	
Correct Containers Used:	X			10.	
-Pace Containers Used:		X			
Containers Intact:	X			11.	
Orthophosphate field filtered			X	12.	
Hex Cr Aqueous sample field filtered			X	13.	
Organic Samples checked for dechlorination:			X	14.	
Filtered volume received for Dissolved tests			X	15.	
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix			X	16.	
All containers meet method preservation requirements.	X			Initial when completed AF	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			X	17.	
Trip Blank Present:		X		18.	
Trip Blank Custody Seals Present			X		
Rad Samples Screened < 0.5 mrem/hr			X	Initial when completed:	Date: / Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
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F: (724) 465-4209
PADEP: 32-00382

1276 Bentleyville Road
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F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
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F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

24 February 2022

Moody & Associates, Inc. (Washington Office)
Attn: Katie Sasala
1720 Washington Road
Washington, PA 15301

Work Order: 2012415
Project: 22-004-KS Speece Sampling

Report of Analysis

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received	Sample Notes
BG-01	2012415-01	Solid	01/28/2022 18:00	1/31/22 15:40	
BG-01 TCLP	2012415-02	Solid	01/28/2022 18:00	1/31/22 15:40	
BG-02	2012415-03	Solid	01/28/2022 18:05	1/31/22 15:40	
BG-02 TCLP	2012415-04	Solid	01/28/2022 18:05	1/31/22 15:40	
BG-03	2012415-05	Solid	01/28/2022 18:10	1/31/22 15:40	
BG-03 TCLP	2012415-06	Solid	01/28/2022 18:10	1/31/22 15:40	
BG-04	2012415-07	Solid	01/28/2022 18:15	1/31/22 15:40	
BG-04 TCLP	2012415-08	Solid	01/28/2022 18:15	1/31/22 15:40	
BG-05	2012415-09	Solid	01/28/2022 18:20	1/31/22 15:40	
BG-05 TCLP	2012415-10	Solid	01/28/2022 18:20	1/31/22 15:40	
BG-06	2012415-11	Solid	01/28/2022 18:25	1/31/22 15:40	
BG-06 TCLP	2012415-12	Solid	01/28/2022 18:25	1/31/22 15:40	
BG-07	2012415-13	Solid	01/28/2022 18:30	1/31/22 15:40	
BG-07 TCLP	2012415-14	Solid	01/28/2022 18:30	1/31/22 15:40	
BG-08	2012415-15	Solid	01/28/2022 18:35	1/31/22 15:40	
BG-08 TCLP	2012415-16	Solid	01/28/2022 18:35	1/31/22 15:40	
BG-09	2012415-17	Solid	01/28/2022 18:40	1/31/22 15:40	
BG-09 TCLP	2012415-18	Solid	01/28/2022 18:40	1/31/22 15:40	
BG-10	2012415-19	Solid	01/28/2022 18:45	1/31/22 15:40	
BG-10 TCLP	2012415-20	Solid	01/28/2022 18:45	1/31/22 15:40	

Report Narrative

The results contained in this report are only representative of the samples received. Environmental Service Laboratories, Inc. is not responsible for use or interpretation of the data included herein.

Revised report 2022-02-24 ANJ to include sub narratives.

PAH SIMS subcontracted to Pace Analytical Services, LLC., PA-DEP ID 65-00282; please see attached subcontract laboratory Report of Analysis for results.

Definitions

DM Dilution required due to Matrix interference.
RL Reporting Limit

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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PADEP: 41-04880

950 West Main Street
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P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/24/2022 12:17

Certifications

Analyses performed by Environmental Service Laboratories, Inc., Indiana PA unless otherwise specified.

Environmental Service Laboratories, Inc., Indiana, PA/TNI Certification #32-00382

Approved By

Alicia N Johnston

Alicia Johnston
Project Manager

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-01
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-01

Sample Date: 01/28/2022 18:00
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	58.0	mg/kg dry		13.3	TLL	02/18/22 01:07	02/18/22 01:07
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	75.0	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<258	ug/kg dry		258	MJK	02/04/22 12:02	02/04/22 12:02
Toluene	<258	ug/kg dry		258	MJK	02/04/22 12:02	02/04/22 12:02
Ethyl Benzene	<258	ug/kg dry		258	MJK	02/04/22 12:02	02/04/22 12:02
m,p-Xylenes	<516	ug/kg dry		516	MJK	02/04/22 12:02	02/04/22 12:02
o-Xylene	<258	ug/kg dry		258	MJK	02/04/22 12:02	02/04/22 12:02
Total Xylenes	<258	ug/kg dry		258	MJK	02/04/22 12:02	02/04/22 12:02
Surrogate: 1,2-Dichloroethane-d4	*82 %*		*80-120*		*MJK*	*02/04/22 12:02*	*02/04/22 12:02*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/04/22 12:02*	*02/04/22 12:02*
Surrogate: 4-Bromofluorobenzene	*107 %*		*86-115*		*MJK*	*02/04/22 12:02*	*02/04/22 12:02*

Lab Sample ID#: 2012415-02
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-01 TCLP

Sample Date: 01/28/2022 18:00
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	3.42	mg/L		2.00	TLL	02/10/22 05:38	02/10/22 05:38

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Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-03
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-02

Sample Date: 01/28/2022 18:05
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	11.2	mg/kg dry		14.1	TLL	02/18/22 01:25	02/18/22 01:25
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	68.0	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<305	ug/kg dry		305	MJK	02/04/22 12:27	02/04/22 12:27
Toluene	<305	ug/kg dry		305	MJK	02/04/22 12:27	02/04/22 12:27
Ethyl Benzene	<305	ug/kg dry		305	MJK	02/04/22 12:27	02/04/22 12:27
m,p-Xylenes	<610	ug/kg dry		610	MJK	02/04/22 12:27	02/04/22 12:27
o-Xylene	<305	ug/kg dry		305	MJK	02/04/22 12:27	02/04/22 12:27
Total Xylenes	<305	ug/kg dry		305	MJK	02/04/22 12:27	02/04/22 12:27
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/04/22 12:27*	*02/04/22 12:27*
Surrogate: Toluene-d8	*99 %*		*88-110*		*MJK*	*02/04/22 12:27*	*02/04/22 12:27*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/04/22 12:27*	*02/04/22 12:27*

Lab Sample ID#: 2012415-04
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-02 TCLP

Sample Date: 01/28/2022 18:05
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.02	mg/L	DM	4.00	TLL	02/10/22 05:57	02/10/22 05:57

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Lab Sample ID#: 2012415-05
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-03

Sample Date: 01/28/2022 18:10
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	45.7	mg/kg dry		12.9	TLL	02/18/22 01:43	02/18/22 01:43
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	75.8	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<250	ug/kg dry		250	MJK	02/04/22 12:52	02/04/22 12:52
Toluene	<250	ug/kg dry		250	MJK	02/04/22 12:52	02/04/22 12:52
Ethyl Benzene	<250	ug/kg dry		250	MJK	02/04/22 12:52	02/04/22 12:52
m,p-Xylenes	<500	ug/kg dry		500	MJK	02/04/22 12:52	02/04/22 12:52
o-Xylene	<250	ug/kg dry		250	MJK	02/04/22 12:52	02/04/22 12:52
Total Xylenes	<250	ug/kg dry		250	MJK	02/04/22 12:52	02/04/22 12:52
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/04/22 12:52*	*02/04/22 12:52*
Surrogate: Toluene-d8	*99 %*		*88-110*		*MJK*	*02/04/22 12:52*	*02/04/22 12:52*
Surrogate: 4-Bromofluorobenzene	*107 %*		*86-115*		*MJK*	*02/04/22 12:52*	*02/04/22 12:52*

Lab Sample ID#: 2012415-06
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-03 TCLP

Sample Date: 01/28/2022 18:10
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	2.76	mg/L		2.00	TLL	02/10/22 06:16	02/10/22 06:16

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Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-07
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-04

Sample Date: 01/28/2022 18:15
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	42.4	mg/kg dry		13.7	TLL	02/18/22 02:37	02/18/22 02:37
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	71.1	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<273	ug/kg dry		273	MJK	02/04/22 13:18	02/04/22 13:18
Toluene	<273	ug/kg dry		273	MJK	02/04/22 13:18	02/04/22 13:18
Ethyl Benzene	<273	ug/kg dry		273	MJK	02/04/22 13:18	02/04/22 13:18
m,p-Xylenes	<545	ug/kg dry		545	MJK	02/04/22 13:18	02/04/22 13:18
o-Xylene	<273	ug/kg dry		273	MJK	02/04/22 13:18	02/04/22 13:18
Total Xylenes	<273	ug/kg dry		273	MJK	02/04/22 13:18	02/04/22 13:18
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/04/22 13:18*	*02/04/22 13:18*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/04/22 13:18*	*02/04/22 13:18*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/04/22 13:18*	*02/04/22 13:18*

Lab Sample ID#: 2012415-08
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-04 TCLP

Sample Date: 01/28/2022 18:15
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.98	mg/L	DM	4.00	TLL	02/10/22 07:13	02/10/22 07:13

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Lab Sample ID#: 2012415-09
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-05

Sample Date: 01/28/2022 18:20
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	16.1	mg/kg dry		14.3	TLL	02/18/22 02:55	02/18/22 02:55
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	67.8	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<350	ug/kg dry		350	MJK	02/04/22 13:43	02/04/22 13:43
Toluene	<350	ug/kg dry		350	MJK	02/04/22 13:43	02/04/22 13:43
Ethyl Benzene	<350	ug/kg dry		350	MJK	02/04/22 13:43	02/04/22 13:43
m,p-Xylenes	<701	ug/kg dry		701	MJK	02/04/22 13:43	02/04/22 13:43
o-Xylene	<350	ug/kg dry		350	MJK	02/04/22 13:43	02/04/22 13:43
Total Xylenes	<350	ug/kg dry		350	MJK	02/04/22 13:43	02/04/22 13:43
Surrogate: 1,2-Dichloroethane-d4	*82 %*		*80-120*		*MJK*	*02/04/22 13:43*	*02/04/22 13:43*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/04/22 13:43*	*02/04/22 13:43*
Surrogate: 4-Bromofluorobenzene	*107 %*		*86-115*		*MJK*	*02/04/22 13:43*	*02/04/22 13:43*

Lab Sample ID#: 2012415-10
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-05 TCLP

Sample Date: 01/28/2022 18:20
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	2.22	mg/L	DM	4.00	TLL	02/10/22 07:32	02/10/22 07:32

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Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-11
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-06

Sample Date: 01/28/2022 18:25
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	13.9	mg/kg dry		13.8	TLL	02/18/22 03:13	02/18/22 03:13
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	68.2	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<324	ug/kg dry		324	MJK	02/04/22 14:08	02/04/22 14:08
Toluene	<324	ug/kg dry		324	MJK	02/04/22 14:08	02/04/22 14:08
Ethyl Benzene	<324	ug/kg dry		324	MJK	02/04/22 14:08	02/04/22 14:08
m,p-Xylenes	<648	ug/kg dry		648	MJK	02/04/22 14:08	02/04/22 14:08
o-Xylene	<324	ug/kg dry		324	MJK	02/04/22 14:08	02/04/22 14:08
Total Xylenes	<324	ug/kg dry		324	MJK	02/04/22 14:08	02/04/22 14:08
Surrogate: 1,2-Dichloroethane-d4	*84 %*		*80-120*		*MJK*	*02/04/22 14:08*	*02/04/22 14:08*
Surrogate: Toluene-d8	*98 %*		*88-110*		*MJK*	*02/04/22 14:08*	*02/04/22 14:08*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/04/22 14:08*	*02/04/22 14:08*

Lab Sample ID#: 2012415-12
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-06 TCLP

Sample Date: 01/28/2022 18:25
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	5.61	mg/L		2.00	TLL	02/10/22 07:51	02/10/22 07:51

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Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-13
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-07

Sample Date: 01/28/2022 18:30
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	16.4	mg/kg dry		14.1	TLL	02/18/22 03:31	02/18/22 03:31
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	71.0	%			BJL	02/01/22 12:13	02/01/22 12:13
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<336	ug/kg dry		336	MJK	02/04/22 14:33	02/04/22 14:33
Toluene	<336	ug/kg dry		336	MJK	02/04/22 14:33	02/04/22 14:33
Ethyl Benzene	<336	ug/kg dry		336	MJK	02/04/22 14:33	02/04/22 14:33
m,p-Xylenes	<672	ug/kg dry		672	MJK	02/04/22 14:33	02/04/22 14:33
o-Xylene	<336	ug/kg dry		336	MJK	02/04/22 14:33	02/04/22 14:33
Total Xylenes	<336	ug/kg dry		336	MJK	02/04/22 14:33	02/04/22 14:33
Surrogate: 1,2-Dichloroethane-d4	*81 %*		*80-120*		*MJK*	*02/04/22 14:33*	*02/04/22 14:33*
Surrogate: Toluene-d8	*98 %*		*88-110*		*MJK*	*02/04/22 14:33*	*02/04/22 14:33*
Surrogate: 4-Bromofluorobenzene	*105 %*		*86-115*		*MJK*	*02/04/22 14:33*	*02/04/22 14:33*

Lab Sample ID#: 2012415-14
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-07 TCLP

Sample Date: 01/28/2022 18:30
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	1.31	mg/L	DM	4.00	TLL	02/10/22 08:10	02/10/22 08:10

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Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-15
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-08

Sample Date: 01/28/2022 18:35
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	32.3	mg/kg dry		14.4	TLL	02/18/22 03:49	02/18/22 03:49
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	68.9	%			BJL	02/01/22 12:16	02/01/22 12:16
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<320	ug/kg dry		320	MJK	02/04/22 16:58	02/04/22 16:58
Toluene	<320	ug/kg dry		320	MJK	02/04/22 16:58	02/04/22 16:58
Ethyl Benzene	<320	ug/kg dry		320	MJK	02/04/22 16:58	02/04/22 16:58
m,p-Xylenes	<639	ug/kg dry		639	MJK	02/04/22 16:58	02/04/22 16:58
o-Xylene	<320	ug/kg dry		320	MJK	02/04/22 16:58	02/04/22 16:58
Total Xylenes	<320	ug/kg dry		320	MJK	02/04/22 16:58	02/04/22 16:58
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/04/22 16:58*	*02/04/22 16:58*
Surrogate: Toluene-d8	*96 %*		*88-110*		*MJK*	*02/04/22 16:58*	*02/04/22 16:58*
Surrogate: 4-Bromofluorobenzene	*106 %*		*86-115*		*MJK*	*02/04/22 16:58*	*02/04/22 16:58*

Lab Sample ID#: 2012415-16
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-08 TCLP

Sample Date: 01/28/2022 18:35
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	22.5	mg/L		4.00	TLL	02/10/22 08:29	02/10/22 08:29

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435 Broad Street
Montoursville, PA 17754
P: (570) 321-9002
F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-17
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-09

Sample Date: 01/28/2022 18:40
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	39.8	mg/kg dry		13.9	TLL	02/18/22 04:07	02/18/22 04:07
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	69.5	%			BJL	02/01/22 12:16	02/01/22 12:16
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<311	ug/kg dry		311	MJK	02/04/22 15:42	02/04/22 15:42
Toluene	<311	ug/kg dry		311	MJK	02/04/22 15:42	02/04/22 15:42
Ethyl Benzene	<311	ug/kg dry		311	MJK	02/04/22 15:42	02/04/22 15:42
m,p-Xylenes	<623	ug/kg dry		623	MJK	02/04/22 15:42	02/04/22 15:42
o-Xylene	<311	ug/kg dry		311	MJK	02/04/22 15:42	02/04/22 15:42
Total Xylenes	<311	ug/kg dry		311	MJK	02/04/22 15:42	02/04/22 15:42
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/04/22 15:42*	*02/04/22 15:42*
Surrogate: Toluene-d8	*100 %*		*88-110*		*MJK*	*02/04/22 15:42*	*02/04/22 15:42*
Surrogate: 4-Bromofluorobenzene	*105 %*		*86-115*		*MJK*	*02/04/22 15:42*	*02/04/22 15:42*

Lab Sample ID#: 2012415-18
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-09 TCLP

Sample Date: 01/28/2022 18:40
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	2.55	mg/L	DM	4.00	TLL	02/10/22 08:48	02/10/22 08:48

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia Street
Indiana, PA 15701
P: (724) 463-8378
F: (724) 465-4209
PADEP: 32-00382

1276 Bentleyville Road
Van Voorhis, PA 15366
P: (724) 258-8378
F: (724) 258-8376
PADEP: 63-04247

435 Broad Street
Montoursville, PA 17754
P: (570) 321-9002
F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 02/24/2022 12:17

Lab Sample ID#: 2012415-19
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-10

Sample Date: 01/28/2022 18:45
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
General Chemistry	**Analytical Method: EPA 9056**				**Prep Method: EPA 9056**		
Chloride	15.0	mg/kg dry		13.6	TLL	02/18/22 04:25	02/18/22 04:25
General Chemistry	**Analytical Method: SM2540G**				**Prep Method: Metals No Prep**		
% Solids	71.8	%			BJL	02/01/22 12:16	02/01/22 12:16
Volatile Organics	**Analytical Method: EPA8260B**				**Prep Method: MeOH Extraction**		
Benzene	<293	ug/kg dry		293	MJK	02/04/22 16:07	02/04/22 16:07
Toluene	<293	ug/kg dry		293	MJK	02/04/22 16:07	02/04/22 16:07
Ethyl Benzene	<293	ug/kg dry		293	MJK	02/04/22 16:07	02/04/22 16:07
m,p-Xylenes	<587	ug/kg dry		587	MJK	02/04/22 16:07	02/04/22 16:07
o-Xylene	<293	ug/kg dry		293	MJK	02/04/22 16:07	02/04/22 16:07
Total Xylenes	<293	ug/kg dry		293	MJK	02/04/22 16:07	02/04/22 16:07
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*80-120*		*MJK*	*02/04/22 16:07*	*02/04/22 16:07*
Surrogate: Toluene-d8	*97 %*		*88-110*		*MJK*	*02/04/22 16:07*	*02/04/22 16:07*
Surrogate: 4-Bromofluorobenzene	*105 %*		*86-115*		*MJK*	*02/04/22 16:07*	*02/04/22 16:07*

Lab Sample ID#: 2012415-20
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: BG-10 TCLP

Sample Date: 01/28/2022 18:45
Receipt Date: 01/31/2022 15:40

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	2.25	mg/L		2.00	TLL	02/10/22 09:07	02/10/22 09:07

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia St.
Indiana, PA 15701
P: 724-463-TEST
F: 724-465-4209

1276 Bentle
Van Voorhi.
P: 724-258-
F: 724-258-

2012415

SAMPLE REQUEST & CHAIN OF CUSTODY

Chain of Custody

(Updated July 2016)

Sample Identification	2012415 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
BG-01	01	1/28/2022	1800	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-02	02	1/28/2022	1805	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-03	03	1/28/2022	1810	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-04	04	1/28/2022	1815	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	Matrix:	Container Type:	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD

1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampled By: (Signature) Tom M Stanley / Moody	Date/Time 1/31/22 1145	Received By: (Signature) Tom Mc	Date/Time 1-31-22 11:45
Relinquished By: (Signature) Tom Mc	Date/Time 1-31-22 1155	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 1530	Received By: (Signature)	Date/Time 1/31/22 1540

Sampler: Marisa Michalski and Jona Stoskey

Project #:	22-004-KS
Project Name:	Speece Sampling
Project Manager:	Katie Sasala
Invoice to:	Bill Directly to SWN c/o Joshua Boyda

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia St.
Indiana, PA 15701
P: 724-463-TEST
F: 724-465-4209

1276 Bentleyville Rd.
Van Voorhis, PA 15366
P: 724-258-TEST
F: 724-258-8376

1200 River A
Williamspo
P: 570-321
F: 570-321-

2012415

SAMPLE REQUEST & CHAIN OF CUSTODY

Chain of Custody

(Updated July 2016)

Sample Identification	2012415 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
BG-05	09/10	1/28/2022	1820	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-06	11/12	1/28/2022	1825	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-07	13/14	1/28/2022	1830	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-08	15/16	1/28/2022	1835	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	**Matrix:**	**Container Type:**	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampled By: (Signature) Jona M Stoskey / Moody	Date/Time 1/31/22 1145	Received By: (Signature) Tom Mc	Date/Time 1/31/22 11:45
Relinquished By: (Signature) Tom Mc	Date/Time 1-31-22 11:55	Received By: (Signature)	Date/Time 1/31/22 1255
Relinquished By: (Signature)	Date/Time 1/31/22 1530	Received By: (Signature)	Date/Time 1/31/22 1510 ICNJSN

Sampler: Marisa Michalski and Jona Stoskey

Project #:	22-004-KS
Project Name:	Speece Sampling
Project Manager:	Katie Sasala
Invoice to:	Bill Directly to SWN c/o Joshua Boyda

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

ENVIRONMENTAL SERVICE LABORATORIES, INC.

1803 Philadelphia St.
Indiana, PA 15701
P: 724-463-TEST
F: 724-465-4209

1276 Bentleyville Rd.
Van Voorhis, PA 15366
P: 724-258-TEST
F: 724-258-8376

1200 River Aven
Williamsport, PA
P: 570-321-900
F: 570-321-1957

MPLE REQUEST & CHAIN OF CUSTODY

2012415

PAGE ___3___ OF __3___

Chain of Custody

(Updated July 2016)

Sample Identification	2012415 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
BG-09	1718	1/28/2022	1840	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP
BG-10	1920	1/28/2022	1845	G	SO	4	1 - Terracore Kit	Methanol Sodium Bisulfate	BTEX
						1	1 - 16oz glass jar	None	PAHS
						1	1 - 4oz glass jar	None	Chloride SPLP

Sample Type:	**Matrix:**	**Container Type:**	
G = Grab	**AQ** = Water	**P** = Plastic	**Other**: list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS

Sampled By: (Signature) / Moody	Date/Time 11/31/22 1145	Received By: (Signature)	Date/Time 1-31-22 11:45
Relinquished By: (Signature)	Date/Time 1-31-22 11:55	Received By: (Signature)	Date/Time 1/31/22 1235
Relinquished By: (Signature)	Date/Time 1/31/22 15:30	Received By: (Signature)	Date/Time 1/31/22 15:40

LAB USE ONLY

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301

Sampler: Marisa Michalski and Jona Stoskey

Project #: 22-004-KS

Project Name: Speece Sampling

Project Manager: Katie Sasala

Invoice to: Bill Directly to SWN c/o Joshua Boyda

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE RECEIPT AND REVIEW FORM

Client: Moody	Work O 2012415

PART A: GENERAL INFORMATION- SATELLITE LABORATORY

Received by/Lab ID:	**Date/Time Received:** / /
Method of Delivery: Client Drop-Off ESL Courier Other: _____	Received on Ice? YES NO
Sample Receipt Temperature: _____ °C	IR Gun ID:
Containers Removed by Satellite Lab for Analysis of: FECAL TC/EC TC MPN EC MPN TC/EC MPN N/A	

PART B: GENERAL INFORMATION- INDIANA LABORATORY

Received by/Lab ID: JM (005582)	**Samples Received on Ice?** (YES) NO
Date/Time Received: 1/31/22 1540	**Date Sampled:** 1/28/22
Method of Delivery: FedEx UPS Client Drop off (ESL courier) Other: _____	
Sample Receipt Temperature: 4.0 °C	IR Gun ID: 3
Sample State of Collection: (PA) NY OH WV Other: _____	**PWSID Compliance Drinking Water Samples:** YES (NO)

PART C: Receipt Details

Completed (if different from above): _____ / / _____
Signature Date Time

Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)
Chain of custody documents included with samples?	(YES) NO	Comments:
COC form is properly signed in relinquished/received sections?	(YES) NO	Comments:
Sample containers intact and sealed?	(YES) NO	Circle Applicable: Damaged Container Leaking Container Custody Seal Broken Other: _____
Number of containers received matches number indicated on COC?	(YES) NO	Sample IDs and Containers Affected:
Sample IDs on COC match IDs on bottles?	(YES) NO	Sample IDs and Containers Affected:
Date and time on COC match date and time on bottles?	(YES) NO	Sample IDs and Containers Affected:
Samples received within holding time?	(YES) NO	Sample IDs and Containers Affected:
Samples received at appropriate pH for analysis requested?	(YES) NO	Sample IDs and Containers Affected and Observed pH:
Samples requiring thermal preservation within 0 ≤ 6°C? Microbiology within 0 ≤ 10°C?	(YES) NO	For non-WV samples outside of thermal preservation range sampled same day and received on ice are considered acceptable as long as the cooling process has begun.
Adequate sample volume received?	(YES) NO	Analyses Affected:
VOA vials free of headspace (defined as < 6 mm bubble)?	YES (NO)	Sample IDs and Containers Affected:
Other Comments:		Deficiency Log Created: YES (NO)

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

February 11, 2022

Mr Richard Rodriguez
Environmental Service Laboratories, Inc.
1803 Philadelphia Street
Indiana, PA 15701

RE: Project: 2012415
Pace Project No.: 30461753

Dear Mr Rodriguez:

Enclosed are the analytical results for sample(s) received by the laboratory on February 01, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Megan A Rager

Megan A. Rager
megan.rager@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Sierra Grguric, Environmental Service Laboratories, Inc.

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 2012415
Pace Project No.: 30461753

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Florida: Cert E871149 SEKS WET
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: 2012415
Pace Project No.: 30461753

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30461753001	**2012415-01**	Solid	01/28/22 18:00	02/01/22 15:30
30461753002	**2012415-03**	Solid	01/28/22 18:05	02/01/22 15:30
30461753003	**2012415-05**	Solid	01/28/22 18:10	02/01/22 15:30
30461753004	**2012415-07**	Solid	01/28/22 18:15	02/01/22 15:30
30461753005	**2012415-09**	Solid	01/28/22 18:20	02/01/22 15:30
30461753006	**2012415-11**	Solid	01/28/22 18:25	02/01/22 15:30
30461753007	**2012415-13**	Solid	01/28/22 18:30	02/01/22 15:30
30461753008	**2012415-15**	Solid	01/28/22 18:35	02/01/22 15:30
30461753009	**2012415-17**	Solid	01/28/22 18:40	02/01/22 15:30
30461753010	**2012415-19**	Solid	01/28/22 18:45	02/01/22 15:30

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 2012415
Pace Project No.: 30461753

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30461753001	**2012415-01**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753002	**2012415-03**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753003	**2012415-05**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753004	**2012415-07**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753005	**2012415-09**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753006	**2012415-11**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753007	**2012415-13**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753008	**2012415-15**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753009	**2012415-17**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461753010	**2012415-19**	EPA 8270D by SIM	DSC	18	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-01 **Lab ID: 30461753001** Collected: 01/28/22 18:00 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	83-32-9	
Acenaphthylene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	208-96-8	
Anthracene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	120-12-7	
Benzo(a)anthracene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	56-55-3	
Benzo(a)pyrene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	50-32-8	
Benzo(b)fluoranthene	**45.2**	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	191-24-2	
Benzo(k)fluoranthene	**45.3**	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	207-08-9	lp
Chrysene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	53-70-3	
Fluoranthene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	206-44-0	
Fluorene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	193-39-5	
Naphthalene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	91-20-3	
Phenanthrene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	85-01-8	
Pyrene	ND	ug/kg	8.5	1	02/10/22 08:58	02/10/22 17:39	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	83	%.	37-88	1	02/10/22 08:58	02/10/22 17:39	321-60-8	
Terphenyl-d14 (S)	84	%.	10-128	1	02/10/22 08:58	02/10/22 17:39	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**23.5**	%	0.10	1		02/03/22 10:44		

Sample: 2012415-03 **Lab ID: 30461753002** Collected: 01/28/22 18:05 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	83-32-9	
Acenaphthylene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	208-96-8	
Anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	50-32-8	
Benzo(b)fluoranthene	**53.8**	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	191-24-2	
Benzo(k)fluoranthene	**53.9**	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	207-08-9	lp
Chrysene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	53-70-3	
Fluoranthene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	206-44-0	
Fluorene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	193-39-5	

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ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-03 **Lab ID: 30461753002** Collected: 01/28/22 18:05 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Naphthalene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	91-20-3	
Phenanthrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	85-01-8	
Pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 18:38	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	37-88	1	02/10/22 08:58	02/10/22 18:38	321-60-8	
Terphenyl-d14 (S)	79	%.	10-128	1	02/10/22 08:58	02/10/22 18:38	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**28.6**	%	0.10	1		02/03/22 10:44		

Sample: 2012415-05 **Lab ID: 30461753003** Collected: 01/28/22 18:10 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	83-32-9	
Acenaphthylene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	208-96-8	
Anthracene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	120-12-7	
Benzo(a)anthracene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	56-55-3	
Benzo(a)pyrene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	50-32-8	
Benzo(b)fluoranthene	**28.0**	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	191-24-2	
Benzo(k)fluoranthene	**28.1**	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	207-08-9	lp
Chrysene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	53-70-3	
Fluoranthene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	206-44-0	
Fluorene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	193-39-5	
Naphthalene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	91-20-3	
Phenanthrene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	85-01-8	
Pyrene	ND	ug/kg	8.0	1	02/10/22 08:58	02/10/22 18:57	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	80	%.	37-88	1	02/10/22 08:58	02/10/22 18:57	321-60-8	
Terphenyl-d14 (S)	81	%.	10-128	1	02/10/22 08:58	02/10/22 18:57	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**17.9**	%	0.10	1		02/03/22 10:44		

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ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-07 **Lab ID: 30461753004** Collected: 01/28/22 18:15 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	83-32-9	
Acenaphthylene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	208-96-8	
Anthracene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	120-12-7	
Benzo(a)anthracene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	56-55-3	
Benzo(a)pyrene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	50-32-8	
Benzo(b)fluoranthene	**39.2**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	191-24-2	
Benzo(k)fluoranthene	**39.3**	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	207-08-9	lp
Chrysene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	53-70-3	
Fluoranthene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	206-44-0	
Fluorene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	193-39-5	
Naphthalene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	91-20-3	
Phenanthrene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	85-01-8	
Pyrene	ND	ug/kg	8.9	1	02/10/22 08:58	02/10/22 19:17	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	37-88	1	02/10/22 08:58	02/10/22 19:17	321-60-8	
Terphenyl-d14 (S)	78	%.	10-128	1	02/10/22 08:58	02/10/22 19:17	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**24.6**	%	0.10	1		02/03/22 10:44		

Sample: 2012415-09 **Lab ID: 30461753005** Collected: 01/28/22 18:20 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	83-32-9	
Acenaphthylene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	208-96-8	
Anthracene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	50-32-8	
Benzo(b)fluoranthene	**37.7**	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	191-24-2	
Benzo(k)fluoranthene	**37.8**	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	207-08-9	lp
Chrysene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	53-70-3	
Fluoranthene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	206-44-0	
Fluorene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	193-39-5	

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ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-09 **Lab ID: 30461753005** Collected: 01/28/22 18:20 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Naphthalene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	91-20-3	
Phenanthrene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	85-01-8	
Pyrene	ND	ug/kg	9.8	1	02/10/22 08:58	02/10/22 19:37	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	37-88	1	02/10/22 08:58	02/10/22 19:37	321-60-8	
Terphenyl-d14 (S)	78	%.	10-128	1	02/10/22 08:58	02/10/22 19:37	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**31.9**	%	0.10	1		02/03/22 10:44		

Sample: 2012415-11 **Lab ID: 30461753006** Collected: 01/28/22 18:25 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	83-32-9	
Acenaphthylene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	208-96-8	
Anthracene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	50-32-8	
Benzo(b)fluoranthene	**38.5**	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	191-24-2	
Benzo(k)fluoranthene	**38.6**	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	207-08-9	lp
Chrysene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	53-70-3	
Fluoranthene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	206-44-0	
Fluorene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	193-39-5	
Naphthalene	**15.2**	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	91-20-3	
Phenanthrene	**13.3**	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	85-01-8	
Pyrene	ND	ug/kg	9.5	1	02/10/22 08:58	02/10/22 19:56	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	74	%.	37-88	1	02/10/22 08:58	02/10/22 19:56	321-60-8	
Terphenyl-d14 (S)	71	%.	10-128	1	02/10/22 08:58	02/10/22 19:56	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**29.9**	%	0.10	1		02/03/22 10:44		

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ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-13 **Lab ID: 30461753007** Collected: 01/28/22 18:30 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	83-32-9	
Acenaphthylene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	208-96-8	
Anthracene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	50-32-8	
Benzo(b)fluoranthene	**56.8**	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	191-24-2	
Benzo(k)fluoranthene	**56.9**	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	207-08-9	lp
Chrysene	**11.1**	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	53-70-3	
Fluoranthene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	206-44-0	
Fluorene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	193-39-5	
Naphthalene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	91-20-3	
Phenanthrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	85-01-8	
Pyrene	ND	ug/kg	9.4	1	02/10/22 08:58	02/10/22 20:16	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	90	%.	37-88	1	02/10/22 08:58	02/10/22 20:16	321-60-8	ST
Terphenyl-d14 (S)	89	%.	10-128	1	02/10/22 08:58	02/10/22 20:16	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**29.0**	%	0.10	1		02/03/22 10:44		

Sample: 2012415-15 **Lab ID: 30461753008** Collected: 01/28/22 18:35 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	83-32-9	
Acenaphthylene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	208-96-8	
Anthracene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	50-32-8	IS
Benzo(b)fluoranthene	**76.7**	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	205-99-2	IS,lp
Benzo(g,h,i)perylene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	191-24-2	IS
Benzo(k)fluoranthene	**76.8**	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	207-08-9	IS,lp
Chrysene	**14.9**	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	53-70-3	IS
Fluoranthene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	206-44-0	
Fluorene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	193-39-5	IS

REPORT OF LABORATORY ANALYSIS

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(724)850-5600

ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-15 **Lab ID: 30461753008** Collected: 01/28/22 18:35 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Naphthalene	**26.2**	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	91-20-3	
Phenanthrene	**23.2**	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	85-01-8	
Pyrene	ND	ug/kg	9.3	1	02/10/22 08:58	02/10/22 20:35	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	103	%.	37-88	1	02/10/22 08:58	02/10/22 20:35	321-60-8	ST
Terphenyl-d14 (S)	97	%.	10-128	1	02/10/22 08:58	02/10/22 20:35	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**29.7**	%	0.10	1		02/03/22 10:44		

Sample: 2012415-17 **Lab ID: 30461753009** Collected: 01/28/22 18:40 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	83-32-9	
Acenaphthylene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	208-96-8	
Anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	50-32-8	
Benzo(b)fluoranthene	**79.0**	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	191-24-2	
Benzo(k)fluoranthene	**79.2**	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	207-08-9	lp
Chrysene	**12.8**	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	53-70-3	
Fluoranthene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	206-44-0	
Fluorene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	193-39-5	
Naphthalene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	91-20-3	
Phenanthrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	85-01-8	
Pyrene	ND	ug/kg	9.2	1	02/10/22 08:58	02/10/22 20:55	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	81	%.	37-88	1	02/10/22 08:58	02/10/22 20:55	321-60-8	
Terphenyl-d14 (S)	79	%.	10-128	1	02/10/22 08:58	02/10/22 20:55	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**28.9**	%	0.10	1		02/03/22 10:44		

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 2012415
Pace Project No.: 30461753

Sample: 2012415-19 **Lab ID: 30461753010** Collected: 01/28/22 18:45 Received: 02/01/22 15:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546 Pace Analytical Services - Greensburg							
Acenaphthene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	83-32-9	
Acenaphthylene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	208-96-8	
Anthracene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	56-55-3	
Benzo(a)pyrene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	50-32-8	
Benzo(b)fluoranthene	**42.1**	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	205-99-2	lp
Benzo(g,h,i)perylene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	191-24-2	
Benzo(k)fluoranthene	**42.2**	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	207-08-9	lp
Chrysene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	53-70-3	
Fluoranthene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	206-44-0	
Fluorene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	193-39-5	
Naphthalene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	91-20-3	
Phenanthrene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	85-01-8	
Pyrene	ND	ug/kg	9.0	1	02/10/22 08:58	02/10/22 21:15	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	80	%.	37-88	1	02/10/22 08:58	02/10/22 21:15	321-60-8	
Terphenyl-d14 (S)	80	%.	10-128	1	02/10/22 08:58	02/10/22 21:15	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg							
Percent Moisture	**26.1**	%	0.10	1		02/03/22 10:44		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 2012415
Pace Project No.: 30461753

QC Batch: 482841
QC Batch Method: EPA 3546
Analysis Method: EPA 8270D by SIM
Analysis Description: 8270D/3546 MSSV PAH by SIM
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461753001, 30461753002, 30461753003, 30461753004, 30461753005, 30461753006, 30461753007, 30461753008, 30461753009, 30461753010

METHOD BLANK: 2333958 Matrix: Solid
Associated Lab Samples: 30461753001, 30461753002, 30461753003, 30461753004, 30461753005, 30461753006, 30461753007, 30461753008, 30461753009, 30461753010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acenaphthene	ug/kg	ND	6.6	02/10/22 15:41	
Acenaphthylene	ug/kg	ND	6.6	02/10/22 15:41	
Anthracene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(a)anthracene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(a)pyrene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(b)fluoranthene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(g,h,i)perylene	ug/kg	ND	6.6	02/10/22 15:41	
Benzo(k)fluoranthene	ug/kg	ND	6.6	02/10/22 15:41	
Chrysene	ug/kg	ND	6.6	02/10/22 15:41	
Dibenz(a,h)anthracene	ug/kg	ND	6.6	02/10/22 15:41	
Fluoranthene	ug/kg	ND	6.6	02/10/22 15:41	
Fluorene	ug/kg	ND	6.6	02/10/22 15:41	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	6.6	02/10/22 15:41	
Naphthalene	ug/kg	ND	6.6	02/10/22 15:41	
Phenanthrene	ug/kg	ND	6.6	02/10/22 15:41	
Pyrene	ug/kg	ND	6.6	02/10/22 15:41	
2-Fluorobiphenyl (S)	%.	84	37-88	02/10/22 15:41	
Terphenyl-d14 (S)	%.	86	10-128	02/10/22 15:41	

LABORATORY CONTROL SAMPLE: 2333959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/kg	129	103	80	47-104	
Acenaphthylene	ug/kg	129	106	82	49-115	
Anthracene	ug/kg	129	108	84	52-115	
Benzo(a)anthracene	ug/kg	129	108	83	54-130	
Benzo(a)pyrene	ug/kg	129	111	86	59-126	
Benzo(b)fluoranthene	ug/kg	129	124	96	55-133	
Benzo(g,h,i)perylene	ug/kg	129	129	100	54-127	
Benzo(k)fluoranthene	ug/kg	129	122	94	56-120	
Chrysene	ug/kg	129	109	84	56-115	
Dibenz(a,h)anthracene	ug/kg	129	137	106	55-129	
Fluoranthene	ug/kg	129	115	89	56-125	
Fluorene	ug/kg	129	108	84	50-114	
Indeno(1,2,3-cd)pyrene	ug/kg	129	138	106	55-129	
Naphthalene	ug/kg	129	90.0	70	45-102	
Phenanthrene	ug/kg	129	108	84	50-110	

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QUALITY CONTROL DATA

Project: 2012415
Pace Project No.: 30461753

LABORATORY CONTROL SAMPLE: 2333959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Pyrene	ug/kg	129	114	89	56-122	
2-Fluorobiphenyl (S)	%.			76	37-88	
Terphenyl-d14 (S)	%.			78	10-128	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2333960 2333961

Parameter	Units	30461753001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acenaphthene	ug/kg	ND	170	170	140	146	82	86	24-109	4	20	
Acenaphthylene	ug/kg	ND	170	170	144	151	85	89	26-119	4	20	
Anthracene	ug/kg	ND	170	170	145	151	85	88	32-115	4	20	
Benzo(a)anthracene	ug/kg	ND	170	170	137	141	81	83	30-133	3	20	
Benzo(a)pyrene	ug/kg	ND	170	170	123	128	72	75	11-151	4	20	
Benzo(b)fluoranthene	ug/kg	45.2	170	170	194	204	88	93	25-140	5	20	
Benzo(g,h,i)perylene	ug/kg	ND	170	170	67.2	63.8	38	36	10-126	5	20	
Benzo(k)fluoranthene	ug/kg	45.3	170	170	172	185	75	82	25-127	7	20	
Chrysene	ug/kg	ND	170	170	139	143	77	80	10-142	3	20	
Dibenz(a,h)anthracene	ug/kg	ND	170	170	113	110	67	65	13-127	3	20	
Fluoranthene	ug/kg	ND	170	170	148	153	86	89	20-139	3	20	
Fluorene	ug/kg	ND	170	170	149	155	88	91	28-114	4	20	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	170	170	99.2	95.8	56	54	15-123	4	20	
Naphthalene	ug/kg	ND	170	170	121	123	70	71	15-104	2	20	
Phenanthrene	ug/kg	ND	170	170	148	152	84	87	10-135	3	20	
Pyrene	ug/kg	ND	170	170	146	150	86	88	13-139	3	20	
2-Fluorobiphenyl (S)	%.						80	81	37-88			
Terphenyl-d14 (S)	%.						79	81	10-128			

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QUALITY CONTROL DATA

Project: 2012415
Pace Project No.: 30461753

QC Batch: 481454
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461753001, 30461753002, 30461753003, 30461753004, 30461753005, 30461753006, 30461753007, 30461753008, 30461753009, 30461753010

SAMPLE DUPLICATE: 2326470

Parameter	Units	30461472001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	28.5	27.1	5	20	

SAMPLE DUPLICATE: 2326471

Parameter	Units	30461643001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	27.7	24.5	13	20	

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QUALIFIERS

Project: 2012415
Pace Project No.: 30461753

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

IS	The internal standard response is below criteria. Results may be biased high.
Ip	Benzo(b)fluoranthene and benzo(k)fluoranthene were separated in the check standard but did not meet the resolution criteria specified in the test method. Sample results included are reported as individual isomers, but the lab and the client must recognize them as an isomeric pair.
ST	Surrogate recovery was above laboratory control limits. Results may be biased high.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2012415
Pace Project No.: 30461753

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30461753001	**2012415-01**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753002	**2012415-03**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753003	**2012415-05**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753004	**2012415-07**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753005	**2012415-09**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753006	**2012415-11**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753007	**2012415-13**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753008	**2012415-15**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753009	**2012415-17**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753010	**2012415-19**	EPA 3546	482841	EPA 8270D by SIM	483191
30461753001	**2012415-01**	ASTM D2974-87	481454		
30461753002	**2012415-03**	ASTM D2974-87	481454		
30461753003	**2012415-05**	ASTM D2974-87	481454		
30461753004	**2012415-07**	ASTM D2974-87	481454		
30461753005	**2012415-09**	ASTM D2974-87	481454		
30461753006	**2012415-11**	ASTM D2974-87	481454		
30461753007	**2012415-13**	ASTM D2974-87	481454		
30461753008	**2012415-15**	ASTM D2974-87	481454		
30461753009	**2012415-17**	ASTM D2974-87	481454		
30461753010	**2012415-19**	ASTM D2974-87	481454		

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SUBCONTRACT ORDER

Environmental Service Laboratories, Inc.

2012415

Please report all results to **reports@envlabs.com**. Contact E

WO# : 30461753

30461753

SENDING LABORATORY:

Environmental Service Laboratories, Inc.
1803 Philadelphia Street
Indiana, PA 15701
Phone: 724-463-8378
Fax: 724-465-4209
Project Manager: Lucas Winner

RECEIVING LABOR

Pace Analytical Servic
1638 Roseytown Road
Greensburg, PA 15601
Phone :(724) 850-5600
Fax: (724) 850-5601

State of Origin: PA

Analysis	Due	Expires	Comments
Sample ID: 2012415-01 **Sampled: 01/28/2022 18:00** **Sample Type: Grab** **Sampled By: Client** 001			
Matrix: Solid	02/10/2022 23:00	02/27/2022 18:00	
PAH SIMS			
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-03 **Sampled: 01/28/2022 18:05** **Sample Type: Grab** **Sampled By: Client** 002			
Matrix: Solid	02/10/2022 23:00	02/27/2022 18:05	
PAH SIMS			
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-05 **Sampled: 01/28/2022 18:10** **Sample Type: Grab** **Sampled By: Client** 003			
Matrix: Solid	02/10/2022 23:00	02/27/2022 18:10	
PAH SIMS			
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-07 **Sampled: 01/28/2022 18:15** **Sample Type: Grab** **Sampled By: Client** 004			
Matrix: Solid	02/10/2022 23:00	02/27/2022 18:15	
PAH SIMS			
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-09 **Sampled: 01/28/2022 18:20** **Sample Type: Grab** **Sampled By: Client** 005			
Matrix: Solid	02/10/2022 23:00	02/27/2022 18:20	
PAH SIMS			
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-11 **Sampled: 01/28/2022 18:25** **Sample Type: Grab** **Sampled By: Client** 006			
Matrix: Solid	02/10/2022 23:00	02/27/2022 18:25	
PAH SIMS			
Containers Supplied:			
Glass Jar, 8 oz. (A)			

Released By 1/31/22 Date — Received By Bill Graham 2/1/22 1125 Date

Released By Bill Graham 2/1/22 1530 Date — Received By [illegible] 2/1/22 15:30 Date

SUBCONTRACT ORDER

Environmental Service Laboratories, Inc.

2012415

Please report all results to **reports@envlabs.com**. Contact ESL with any questions.

Analysis	Due	Expires	Comments
Sample ID: 2012415-13 **Matrix: Solid** **Sampled: 01/28/2022 18:30** **Sample Type: Grab** **Sampled By: Client** 007			
PAH SIMS	02/10/2022 23:00	02/27/2022 18:30	
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-15 **Matrix: Solid** **Sampled: 01/28/2022 18:35** **Sample Type: Grab** **Sampled By: Client** 008			
PAH SIMS	02/10/2022 23:00	02/27/2022 18:35	
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-17 **Matrix: Solid** **Sampled: 01/28/2022 18:40** **Sample Type: Grab** **Sampled By: Client** 009			
PAH SIMS	02/10/2022 23:00	02/27/2022 18:40	
Containers Supplied:			
Glass Jar, 8 oz. (A)			
Sample ID: 2012415-19 **Matrix: Solid** **Sampled: 01/28/2022 18:45** **Sample Type: Grab** **Sampled By: Client** 010			
PAH SIMS	02/10/2022 23:00	02/27/2022 18:45	
Containers Supplied:			
Glass Jar, 8 oz. (A)			

WO# : 30461753
PM: MAR Due Date: 02/15/22
CLIENT: ESL

Released By	1/31/22 Date	Received By	2/1/22 1125 Date
Released By	2/1/22 1530 Date	Received By	2/1/22 1530 Date

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: ESL Project #

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other

Label AF
LIMS Login VPINE

Tracking #: N/A

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☑ no

Thermometer Used AF Type of Ice: (Wet) Blue None

Cooler Temperature Observed Temp 3.4 °C Correction Factor: (0.0) °C Final Temp: 3.4 °C

Temp should be above freezing to 6°C

WO#: 30461753
PM: MAR Due Date: 02/10/22
CLIENT: ESL

Comments:	Yes	No	N/A	pH paper Lot# N/A	Date and Initials of person examining contents: 02/10/22 AF
Chain of Custody Present:	X			1.	
Chain of Custody Filled Out:		X		2. no preservation listed	
Chain of Custody Relinquished:	X			3.	
Sampler Name & Signature on COC:	X	X		4. AF	
Sample Labels match COC: -Includes date/time/ID Matrix: SL	X			5.	
Samples Arrived within Hold Time:	X			6.	
Short Hold Time Analysis (<72hr remaining):		X		7.	
Rush Turn Around Time Requested:		X		8.	
Sufficient Volume:	X			9.	
Correct Containers Used:	X			10.	
-Pace Containers Used:		X			
Containers Intact:	X			11.	
Orthophosphate field filtered			X	12.	
Hex Cr Aqueous sample field filtered			X	13.	
Organic Samples checked for dechlorination:			X	14.	
Filtered volume received for Dissolved tests			X	15.	
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix			X	16.	
All containers meet method preservation requirements.	X			Initial when completed AF	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			X	17.	
Trip Blank Present:		X		18.	
Trip Blank Custody Seals Present			X		
Rad Samples Screened < 0.5 mrem/hr			X	Initial when completed:	Date: Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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PADEP: 63-04247

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PADEP: 41-04880

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P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

09 March 2022

Moody & Associates, Inc. (Washington Office)
Attn: Katie Sasala
1720 Washington Road
Washington, PA 15301

Work Order: 2022298
Project: 22-004-KS Speece Sampling

Report of Analysis

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received	Sample Notes
SO-02	2022298-01	Solid	02/25/2022 00:00	2/28/22 15:20	

Report Narrative

The results contained in this report are only representative of the samples received. Environmental Service Laboratories, Inc. is not responsible for use or interpretation of the data included herein.

Definitions

RL Reporting Limit

Certifications

Analyses performed by Environmental Service Laboratories, Inc., Indiana PA unless otherwise specified.

Approved By

Alicia N Johnston

Alicia Johnston
Project Manager

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 03/09/2022 17:15

Lab Sample ID#: 2022298-01
Sample Type: Solid
Sample Source: Grab
Sampler: Client
Client Sample ID: SO-02

Sample Date: 02/25/2022 00:00
Receipt Date: 02/28/2022 15:20

Analyte	Sample Result	Units	Data Qualifier	RL	Analyst/ Certification	Prep Date/Time	Analysis Date/Time
SPLP Leachate	**Analytical Method: EPA300.0 2.1**				**Prep Method: EPA 1312**		
Chloride	2.86	mg/L		2.00	TLL	03/08/22 15:56	03/08/22 15:56

ENVIRONMENTAL SERVICE LABORATORIES, INC.
1803 Philadelphia St. | 1276 [illegible] | [illegible]enue
Indiana PA 17701
P: 724-[illegible]02
F: 724-4[illegible]57

2022298

SAMPLE REQUEST & CHAIN OF CUSTODY

RUSH!

RUSH

Chain of Custody
(Updated July 2016)

Sample Identification	2022298 ESL#	Sample Date	Sample Time (24-Hour)	Sample Type	Matrix	List Number of Bottles	Container Type (List Size)	Preservative (List Type)	Add/Subtract Parameters/ Comments
SO-02	01	2/25/2022		G	SO	1	1 - 16 oz glass jar	None	Chloride SPLP

Sample Type:	Matrix:	Container Type:	
G = Grab	**AQ** = Water	**P** = Plastic	**Other:** list
C = Composite	**SO** = Soil	**G** = Glass	
D = Discharge	**SL** = Sludge	**AG** = Amber glass	
O = Other	**O** = Other (list)	**VV** = VOA Vial	

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Marisa Michalski 2/25/22 08:00

Sampled By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Marisa Michalski	2/25/22 08:00	Tom McCloskey	2/28/22 08:00
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Tom McCloskey	2/28/22 11:55	Amanda Shay (04247) 2-28-22	11:55
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
(04247)	2/28/22 1330		2/28/22 1330

LAB USE ONLY

Correct Preservations Y / N / NA Correct Containers Y / N / NA Receipt Temperature _____

Moody & Associates, Inc.
1720 Washington Road
Washington, PA 15301
(724) 746-5200

Sampler: Marisa Michalski and ~~Adam Cutlip~~

Project #:	22-004-KS
Project Name:	Speece Sampling
Project Manager:	Katie Sasala
Invoice to:	Bill Directly to SWN c/o Joshua Boyda

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE RECEIPT AND REVIEW FORM

Client: Moody	Work Orc 2022298

PART A: GENERAL INFORMATION- SATELLITE LABORATORY

Received by/Lab ID: 04247	**Date/Time Received:** 2/28/22 11:55
Method of Delivery: (Client Drop-Off) ESL Courier Other: _____	**Received on Ice?** (YES) NO
Sample Receipt Temperature: 11.2 °C	**IR Gun ID:** #7
Containers Removed by Satellite Lab for Analysis of: FECAL TC/EC TC MPN EC MPN TC/EC MPN (N/A)	

PART B: GENERAL INFORMATION- INDIANA LABORATORY

Received by/Lab ID: [illegible]	**Samples Received on Ice?** (YES) NO
Date/Time Received: 2/28 [illegible] 1520	**Date Sampled:** 2/25 [illegible]
Method of Delivery: FedEx UPS Client Drop off ~~ESL courier~~ Other: _____	
Sample Receipt Temperature: 4.5 °C	**IR Gun ID:** 3
Sample State of Collection: (PA) NY OH WV Other: ____	**PWSID Compliance Drinking Water Samples:** YES (NO)

PART C: Receipt Details

Completed (if different from above): _____ / / _____
Signature Date Time

Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)
Chain of custody documents included with samples?	(YES) NO	Comments:
COC form is properly signed in relinquished/received sections?	(YES) NO	Comments:
Sample containers intact and sealed?	(YES) NO	Circle Applicable: Damaged Container Leaking Container Custody Seal Broken Other: _____
Number of containers received matches number indicated on COC?	(YES) NO	Sample IDs and Containers Affected:
Sample IDs on COC match IDs on bottles?	(YES) NO	Sample IDs and Containers Affected:
Date and time on COC match date and time on bottles?	(YES) NO	Sample IDs and Containers Affected:
Samples received within holding time?	(YES) NO	Sample IDs and Containers Affected:
Samples received at appropriate pH for analysis requested?	(YES) NO	Sample IDs and Containers Affected and Observed pH:
Samples requiring thermal preservation within 0 ≤ 6°C? Microbiology within 0 ≤ 10°C?	(YES) NO	For non-WV samples outside of thermal preservation range sampled same day and received on ice are considered acceptable as long as the cooling process has begun.
Adequate sample volume received?	(YES) NO	Analyses Affected:
VOA vials free of headspace (defined as < 6 mm bubble)?	YES (NO)	Sample IDs and Containers Affected:
Other Comments:		**Deficiency Log Created:** YES (NO)

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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PADEP: 43-04934

18 April 2022

Moody & Associates, Inc. (Washington Office)
Attn: Joshua Boyda
1720 Washington Road
Washington, PA 15301

Work Order: 2040865
Project: SWN WV Thurman Spece Stream Sampling

Report of Analysis

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received	Sample Notes
SW-01	2040865-01	Water	04/08/2022 16:25	04/11/2022 16:10	
SW-02	2040865-02	Water	04/08/2022 16:22	04/11/2022 16:10	
SW-03	2040865-03	Water	04/08/2022 15:37	04/11/2022 16:10	
SW-04	2040865-04	Water	04/08/2022 17:02	04/11/2022 16:10	
SW-05	2040865-05	Water	04/08/2022 17:18	04/11/2022 16:10	

Report Narrative

The results contained in this report are only representative of the samples received. Environmental Service Laboratories, Inc. is not responsible for use or interpretation of the data included herein.

Definitions

RL Reporting Limit
CFU Colony Forming Units

Certifications

Analyses performed by Environmental Service Laboratories, Inc., Indiana PA unless otherwise specified.

Environmental Service Laboratories, Inc., Indiana, West Virginia DEP Certificate # 392

Approved By

Alicia N Johnston

Alicia Johnston
Project Manager

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 04/18/2022 14:19

Lab Sample ID#: 2040865-01
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-01

Sample Date: 04/08/2022 16:25
Receipt Date: 04/11/2022 16:10

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	7.05	mg/L		0.303	2.00	EPA300.0 2.1	TLL	04/14/22 22:00

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 04/18/2022 14:19

Lab Sample ID#: 2040865-02
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-02

Sample Date: 04/08/2022 16:22
Receipt Date: 04/11/2022 16:10

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	65.3	mg/L		0.303	2.00	EPA300.0 2.1	TLL	04/14/22 22:20

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 04/18/2022 14:19

Lab Sample ID#: 2040865-03
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-03

Sample Date: 04/08/2022 15:37
Receipt Date: 04/11/2022 16:10

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	7.41	mg/L		0.303	2.00	EPA300.0 2.1	TLL	04/14/22 22:40

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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F: (724) 258-8376
PADEP: 63-04247

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F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
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P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 04/18/2022 14:19

Lab Sample ID#: 2040865-04
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-04

Sample Date: 04/08/2022 17:02
Receipt Date: 04/11/2022 16:10

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	135	mg/L		1.52	10.0	EPA300.0 2.1	TLL	04/17/22 19:25

ENVIRONMENTAL SERVICE LABORATORIES, INC.

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Indiana, PA 15701
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PADEP: 32-00382

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F: (724) 258-8376
PADEP: 63-04247

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F: (570) 321-1957
PADEP: 41-04880

950 West Main Street
Sharpsville, PA 16150
P: (724) 463-8378 x 500
F: (724) 465-4209
PADEP: 43-04934

Moody & Associates, Inc. (Washington Office)
1720 Washington Road
Washington, PA 15301

Reported: 04/18/2022 14:19

Lab Sample ID#: 2040865-05
Sample Type: Water
Sample Source: Grab
Sampler: Client
Client Sample ID: SW-05

Sample Date: 04/08/2022 17:18
Receipt Date: 04/11/2022 16:10

Analyte	Sample Result	Units	Data Qualifier	MDL	RL	Method	Analyst/ Certification	Analysis Date/Time
General Chemistry								
Chloride	166	mg/L		1.52	10.0	EPA300.0 2.1	TLL	04/17/22 19:45

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE REQUEST & CHAIN OF CUSTOD

2040865

HEADQUARTERS
1803 Philadelphia St.
Indiana, PA 15701
(724) 463-TEST
FAX: (724) 465-4209
☐

SOUTHERN DIVISION
1276 Bentleyville Road
Van Voorhis, PA 15366
(724) 258-TEST
FAX: (724) 258-8376
☒

NORTHERN DIVISION
435 Broad Street
Montoursville, PA 17754
(570) 321-9003
FAX: (570) 321-1957
☐

NORTHWEST DIVISION
950 Main Street
Sharpsville, PA 16150
(724) 463-TEST
FAX: (724) 465-4209
☐

Requested TAT:
Rush _____ days ☒x
Standard ☐

FOR INTERNAL LABORATORY USE ONLY

Sample Identification	ESL# 2041865	Sample Type: Composite Date on/off	Composite Time on/off	Grab Date	Grab Time	Matrix	# of Containers	Container Type / Preservative	Analysis Requested
SW-01	01			4-8-22	16:25	W	1	Poly 1000 mL	Chloride
SW-02	02			4-8-22	16:22	W	1	Poly 1000 mL	Chloride
SW-03	03			4-8-22	15:37	W	1	Poly 1000 mL	Chloride
SW-04	04			4-8-22	17:02	W	1	Poly 1000 mL	Chloride
SW-05	05			4-8-22	17:18	W	1	Poly 1000 mL	Chloride

THE UNDERSIGNED PURCHASER HEREBY AGREES TO PAY SERVICE CHARGES ON ACCOUNTS OVER 31 DAYS OLD.
1. THESE SERVICE CHARGES WILL ACCRUE AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM OR THE MAXIMUM ALLOWED BY LAW.)
2. THE UNDERSIGNED PURCHASER AGREES TO PAY, IN THE EVENT HIS ACCOUNT BECOMES DELINQUENT AND IS TURNED OVER TO ANY ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES PLUS ALL COURT AND ATTENDANT COLLECTION COSTS.

Tom McLaughlin	4-8-22 16:00		
Sampled By: (Signature)	Date/ Time		
Tom McLaughlin	4-11-22 11:34	Amanda Shuy	4-11-22 11:34
Relinquished By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
Amanda Shuy	4-11-22 12:30	Amanda Shuy (04247)	4-11-22 12:30
Relinquished By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
(04247)	4/11/22 1436		4/11/22 1436
Relinquished By: (Signature)	Date/ Time	Received By: (Signature)	Date/ Time
	4/11/22 1610		4/11/22 1610

Correct Preservations Y / N / NA **Correct Containers** Y / N / NA **Receipt Temperature** _____

Project Notes:

Thurman Spece Stream Sampling (WV)

Please direct bill SWN (Josh Boyda)

Company/Name:	**Moody & Associates (Washington, PA)**
Address:	1720 Washington Road, Suite 100
	Washington, PA 15301
Contact Person:	Katie Sasala
Phone Number:	724-749-4606
Email Address:	Ksasala@moody-s.com
State of Collection:	WV

Moody Project No.: 22-002-KS

ENVIRONMENTAL SERVICE LABORATORIES, INC.

SAMPLE RECEIPT AND REVIEW FORM

Client: Moody	Work Ord 2040865

PART A: GENERAL INFORMATION- SATELLITE LABORATORY

Received by/Lab ID: 04247	Date/Time Received: 4/11/22 1230
Method of Delivery: Client Drop-Off (ESL Courier) Other: _____	Received on Ice? (YES) NO
Sample Receipt Temperature: _____ °C	IR Gun ID: #7
Containers Removed by Satellite Lab for Analysis of: FECAL TC/EC TC MPN EC MPN TC/EC MPN (N/A)	

PART B: GENERAL INFORMATION- INDIANA LABORATORY

Received by/Lab ID: INDIANA	Samples Received on Ice? (YES) NO
Date/Time Received: 4/11 MV 1610	Date Sampled: 4/8 MV
Method of Delivery: FedEx UPS Client Drop off ~~ESL courier~~ Other: _____	
Sample Receipt Temperature: 4.7 °C	IR Gun ID: 3
Sample State of Collection: PA NY OH (WV) Other: _____	PWSID Compliance Drinking Water Samples: YES (NO)

PART C: Receipt Details

Completed (if different from above): _____ (Signature) / / (Date) _____ (Time)

Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)
Chain of custody documents included with samples?	(YES) NO	Comments:
COC form is properly signed in relinquished/received sections?	(YES) NO	Comments:
Sample containers intact and sealed?	(YES) NO	Circle Applicable: Damaged Container Leaking Container Custody Seal Broken Other: _____
Number of containers received matches number indicated on COC?	(YES) NO	Sample IDs and Containers Affected:
Sample IDs on COC match IDs on bottles?	(YES) NO	Sample IDs and Containers Affected:
Date and time on COC match date and time on bottles?	(YES) NO	Sample IDs and Containers Affected:
Samples received within holding time?	(YES) NO	Sample IDs and Containers Affected:
Samples received at appropriate pH for analysis requested?	(YES) NO	Sample IDs and Containers Affected and Observed pH:
Samples requiring thermal preservation within 0 ≤ 6°C? Microbiology within 0 ≤ 10°C?	(YES) NO	For non-WV samples outside of thermal preservation range sampled same day and received on ice are considered acceptable as long as the cooling process has begun.
Adequate sample volume received?	(YES) NO	Analyses Affected:
VOA vials free of headspace (defined as < 6 mm bubble)?	YES (NO)	Sample IDs and Containers Affected:
Other Comments:		**Deficiency Log Created:** YES (NO)

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

009-00186 Thurman Speece

2 messages

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Thu, Jun 16, 2022 at 10:43 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: "Newlon, Douglas C" <douglas.c.newlon@wv.gov>

Please find the attached draft matrix. I went through the soil results and they were below chloride soil levels on April 8, 2022. I used that as the number of days instead of April 28. I think with the rate changes I was very fair. Please review and let me know your thoughts.

--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

Assessment Matrix SWN NOV 11753.pdf
212K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Jun 16, 2022 at 2:44 PM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>
Cc: "Newlon, Douglas C" <douglas.c.newlon@wv.gov>

Scott,

Under II B. Negligence I would add,
Pad drain did not closed correctly and the brine water leaked continued for an extended amount of time.
Something to that effect Ithink shows negligence for not verifying the drain valve was shut in

Also typo on the API should be 09

Everything else looks good and I think you were very fair.

See my rig report attachment
[Quoted text hidden]

6-17-22.xlsx
12K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

13 3/8" Surface Casing Cementing Log/Details - Well: Charles Jamison MSH 606

1 message

SDC41 <SDC41@swn.com> Thu, Jul 7, 2022 at 10:33 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, SDC41 <SDC41@swn.com>

13 3/8" Surface Casing Cementing Details - Well: Charles Jamison MSH 606

Load lines with 5 bbls and pressure test T/1000 psi low, 3500 psi high, all tests held for 5 mins. Pump 25 bbls of gel spacer @ 8.6 ppg, mix/pump 73 bbls 345 sks of "Class A" Lead cement @ 15.6 ppg, 1.18 yld, tail in 148 bbls 739 sks of "Class A" Tail cement @ 16.0 ppg, 1.12 yld, Shut down, drop top plug and displace w/213 bbls fresh water. Bump plug w/1900 psi (500 psi over FCP) @ 13:50 hrs 07/03/2022. Hold for 5 minutes and check floats. Bled off 1.5 bbl to displacement tank. Floats held. Circulated 53 bbls of cement to surface. Full returns throughout the job.

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Rick Harless 713-725-2389

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

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CHARLES JAMISON MSH 606H_SC.pdf

290K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

13.375” Surface Casing Cementing Details / Log - Charles Jamison MSH 406

1 message

SDC41 <SDC41@swn.com> Mon, Jun 6, 2022 at 10:59 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Joel Still <Joel_Still@swn.com>

13.375” Surface Casing Cementing Details:

Load lines and pressure test iron to 1000 psi low and 2500 psi high, all tests held for 5 mins. Pump 50 bbls of fresh water to load casing, mix/pump 25 bbls of gel spacer w/ 1/2 ppb cemnet @ 8.6 ppg. Pump 99 bbls with 462 sks of "Class A" cement w/1/2 ppb Cemnet in 1st 47 bbl @ 15.6 ppg, 1.19 yld, 5.27 gal/sk. Drop top plug and displace w/54 bbls fresh water. Bump plug w/700 psi (500 psi over FCP) @ 05:35 hrs 06/06/2022. Held for 5 minutes, floats held. Bled off 1/2 bbl to the truck. Circulated 34 bbls of cement to surface.

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Rick Harless 713-725-2389

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

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Surface Casing Cement Log - Charles Jamison MSH 406.pdf
417K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

5.5" Production Casing Cementing Log / Details - Charles Jamison MSH 406

1 message

SDC41 <SDC41@swn.com> Mon, Jun 27, 2022 at 7:43 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

5.5" Production Casing Cementing Details - Charles Jamison MSH 406

Fill cement lines and pressure test 1,000 psi low - 8,500 psi high, all tests held for 5 min.. Pump 150 bbls MPE @ 14.0 ppg 0.900 lb/bbl B389 + 1.0 gal/bbl B553 + 0.1 gal/bbl D047 + 314.658 lb/bbl D031 , Drop bottom plug. Mix and pump tail cement 4145 sks 952 bbls Class "A" 100 BWOB D901 cement slurry @ 15.0 ppg 1.29 yld 6.00 gal/sk 0.40% BWOB D255 + 0.02 BWOB D047 + 0.04% BWOB D208 + 0.71% BWOB D800. Drop top plug, Displace with 505 bbls fresh water (20 bbls sugar water to start 50 lbs/per 10 bbls) w/0.02 gal/bbl L064 + 0.08 gal/bbl M300 + 5 gal/bbl TP110. Bumped plug w/3,750 psi (500 psi over) @ 23:45 hrs 06/26/2022, Held pressure for 5 mins, released pressure to check floats, floats held. Bled back7 bbls to truck. Returned 105 bbls mud flush spacer to surface. Calculated TOC @ 940'. Full returns throughout the job with full rotation, max torque of 27K.

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Rick Harless 713-725-2389

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

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communication to anyone else. If you received this communication in error, please notify us immediately by telephone or return e-mail and promptly delete the original message from your system.

PLOT REPORT.pdf
660K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

77-00030

2 messages

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Mar 11, 2022 at 12:00 PM
To: James A Martin <james.a.martin@wv.gov>, Charles T Brewer <charles.t.brewer@wv.gov>, Jeffrey W McLaughlin <jeffrey.w.mclaughlin@wv.gov>, Douglas C Newlon <Douglas.C.Newlon@wv.gov>, J Scott Rodeheaver <J.Scott.Rodeheaver@wv.gov>

TC energy has revised the plan to reflect not using pits. This is the well on the Lewis property. See revised rec plan and add it to the permit as needed.

Regards,

Gayne

WVDEP Reclamation Plan (site detail) - TA 7398 v.2.pdf
1335K

McLaughlin, Jeffrey W <jeffrey.w.mclaughlin@wv.gov> Fri, Mar 11, 2022 at 12:46 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: James A Martin <james.a.martin@wv.gov>, Charles T Brewer <charles.t.brewer@wv.gov>, Douglas C Newlon <Douglas.C.Newlon@wv.gov>, J Scott Rodeheaver <J.Scott.Rodeheaver@wv.gov>

Received, thank you.

Jeff McLaughlin
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

9 5/8" Intermediate Casing Cementing Log - Details / SWN A WTZ 1

1 message

SDC41 <SDC41@swn.com> Sun, Jan 9, 2022 at 6:25 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

9 5/8" Intermediate Casing Cementing Details / SWN A WTZ 1:

Load lines with 5 bbls and pressure test T/1000 psi low, 3000 psi high, all tests held for 5 mins. Pump 25 bbls of gel spacer @ 8.62 ppg, mix/pump 81 bbls 379 sks of "Class A" Lead cement @ 15.6 ppg, 1.18 yld, tail in 171 bbls 800 sks of "Class A" Tail cement @ 16.0 ppg, 1.12 yld, Shut down, drop top plug and displace w/219 bbls fresh water. Bump plug w/2100 psi (500 psi over FCP) @ 20:27 hrs 01/08/2022. Release pressure, check floats, floats held. Bled back 2.0 bbls. 78 bbls of good cement to surface.

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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A WTZ 1H intermediate job log.pdf
379K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

9 5/8" Intermediate Casing Cementing Log/Details - Well: Charles Jamison MSH 606

1 message

SDC41 <SDC41@swn.com> Thu, Jul 7, 2022 at 10:40 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, SDC41 <SDC41@swn.com>

9 5/8" Intermediate Casing Cementing Details - Well: Charles Jamison MSH 606

Load lines with 5 bbls and pressure test T/1000 psi low, 3500 psi high, all tests held for 5 mins. Pump 25 bbls of gel spacer @ 8.6 ppg, mix/pump 73 bbls 345 sks of "Class A" Lead cement @ 15.6 ppg, 1.18 yld, tail in 148 bbls 739 sks of "Class A" Tail cement @ 16.0 ppg, 1.12 yld, Shut down, drop top plug and displace w/213 bbls fresh water. Bump plug w/1900 psi (500 psi over FCP) @ 13:50 hrs 07/03/2022. Hold for 5 minutes and check floats. Bled off 1.5 bbl to displacement tank. Floats held. Circulated 53 bbls of cement to surface. Full returns throughout the job.

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Rick Harless 713-725-2389

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

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Charles Jamison MSH 606H_IC.pdf

461K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

[External] Hart FWI closure

5 messages

Dawn Keller <Dawn_Keller@swn.com> Fri, Jul 9, 2021 at 1:01 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Scott Hutson <Scott_Hutson@swn.com>

CAUTION: External email. Do not click links or open attachments unless you verify sender.

Hi Gayne,

Will you please visit to Hart Freshwater Impoundment closure in Preston County, at your earliest convenience, and perform the final inspection? We would like to get this permit released and the location released to the landowner. Let me know what you think. We will wait to remove E&S until we hear from you.

Thanks!

Dawn Keller

Senior Environmental Specialist

SWN SWAPP Division

Mobile: 501-697-7230

Dawn_keller@swn.com

Knitowski, Gayne J <Gayne.J.Knitowski@wv.gov> Fri, Jul 9, 2021 at 2:34 PM
To: Dawn Keller <Dawn_Keller@swn.com>

Dawn,

I will get out there next week and get back to you.

Gayne Knitowski
Oil and Gas Inspector
WVDEP Office of Oil and Gas
304-546-8171

On Jul 9, 2021, at 1:01 PM, Dawn Keller <Dawn_Keller@swn.com> wrote:

[Quoted text hidden]

Dawn Keller <Dawn_Keller@swn.com> Fri, Jul 9, 2021 at 2:45 PM
To: "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>

CAUTION: External email. Do not click links or open attachments unless you verify sender.

Thank you!

Dawn Keller

Senior Environmental Specialist

SWN SWAPP Division

Mobile: 501-697-7230

Dawn_keller@swn.com

[Quoted text hidden]

Knitowski, Gayne J <Gayne.J.Knitowski@wv.gov> Mon, Jul 12, 2021 at 4:11 PM
To: Dawn Keller <Dawn_Keller@swn.com>

Dawn,

I went by the Hart impoundment today and everything looked good. Once you remove the soil erosion measures let me now and I will get an inspection report over to Kelly and we can put this one to bed.

Gayne Knitowski
Oil and Gas Inspector
WVDEP Office of Oil and Gas
304-546-8171

[Quoted text hidden]

Dawn Keller <Dawn_Keller@swn.com> Mon, Jul 12, 2021 at 5:12 PM
To: "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>

CAUTION: External email. Do not click links or open attachments unless you verify sender.

Great! Thank you! I will let you know when E&S is removed.

Dawn Keller
Senior Environmental Specialist
SWN SWAPP Division
501-697-7230

> On Jul 12, 2021, at 4:11 PM, Knitowski, Gayne J <Gayne.J.Knitowski@wv.gov> wrote:
>
> Dawn,
> [Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

[External] Vacation

1 message

Dawn Keller <Dawn_Keller@swn.com> Wed, Jul 14, 2021 at 4:19 PM
To: "Stollings, Barry W" <Barry.W.Stollings@wv.gov>, "Harris, Bryan O" <Bryan.O.Harris@wv.gov>, "Ward, Samuel D" <Samuel.D.Ward@wv.gov>, "Haught, Derek M" <Derek.M.Haught@wv.gov>, "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>
Cc: Chad Keilman <Chad_Keilman@swn.com>

CAUTION: External email. Do not click links or open attachments unless you verify sender.

Good Afternoon Gentlemen,

I just wanted to let you all know that I will be on vacation July 15- July 23. If there are any pressing issues or if you need anything please reach out to Chad Keilman at 501-428-3114 or Josh Boyda at 501-428-3636. Thank you and have a great week!

Dawn Keller

Senior Environmental Specialist

SWN SWAPP Division

Mobile: 501-697-7230

Dawn_keller@swn.com

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

****REVISED DETAILS ***13 3/8" Surface Casing Cementing Log/Details - Well: Charles Jamison MSH 606

1 message

SDC41 <SDC41@swn.com> Thu, Jul 7, 2022 at 10:41 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, SDC41 <SDC41@swn.com>

You have received a secure message from Southwestern Energy

Read your secure message by opening the attachment, securedoc_20220707T094127.html. You will be prompted to open (view) the file or save (download) it to your computer. For best results, save the file first, then open it in a Web browser. To access from a mobile device, forward this message to mobile@res.cisco.com to receive a mobile login URL.

If you have concerns about the validity of this message, contact the sender directly.

securedoc_20220707T094127.html
505K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

REVISED Notice of "Intent to Set and Cement Production Casing" on the Charles Jamison MSH 410

1 message

SDC41 <SDC41@swn.com> Sat, Apr 9, 2022 at 1:05 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

You have received a secure message from Southwestern Energy

Read your secure message by opening the attachment, securedoc_20220409T120550.html. You will be prompted to open (view) the file or save (download) it to your computer. For best results, save the file first, then open it in a Web browser. To access from a mobile device, forward this message to mobile@res.cisco.com to receive a mobile login URL.

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securedoc_20220409T120550.html
146K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

REVISED Notice of "Intent to Set and Cement Surface Casing" on the Charles Jamison MSH 406

1 message

SDC41 <SDC41@swn.com> Sat, Jun 4, 2022 at 7:24 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

You have received a secure message from Southwestern Energy

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If you have concerns about the validity of this message, contact the sender directly.

securedoc_20220604T062435.html
144K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

REVISED Notice of "Intent to Spud In" on the Charles Jamison MSH 406

1 message

SDC41 <SDC41@swn.com> Sat, Jun 4, 2022 at 7:22 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>, Steve Bair <stevebair@acnrinc.com>, "BrianHoward@acnrinc.com" <BrianHoward@acnrinc.com>, "HarisAhmed@acnrinc.com" <HarisAhmed@acnrinc.com>

You have received a secure message from Southwestern Energy

Read your secure message by opening the attachment, securedoc_20220604T062227.html. You will be prompted to open (view) the file or save (download) it to your computer. For best results, save the file first, then open it in a Web browser. To access from a mobile device, forward this message to mobile@res.cisco.com to receive a mobile login URL.

If you have concerns about the validity of this message, contact the sender directly.

securedoc_20220604T062227.html
145K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

REVISED Notice of "Intent to Spud In" on the Charles Jamison MSH 810

1 message

SDC41 <SDC41@swn.com> Fri, May 6, 2022 at 10:21 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

You have received a secure message from Southwestern Energy

Read your secure message by opening the attachment, securedoc_20220506T092128.html. You will be prompted to open (view) the file or save (download) it to your computer. For best results, save the file first, then open it in a Web browser. To access from a mobile device, forward this message to mobile@res.cisco.com to receive a mobile login URL.

If you have concerns about the validity of this message, contact the sender directly.

securedoc_20220506T092128.html
147K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Update Notice of "Intent to Set and Cement Production Casing" on the OE Burge MSH 205 H

1 message

SDC41 <SDC41@swn.com> Mon, Dec 13, 2021 at 9:04 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Dave Bert <Dave_Bert@swn.com>, SDC41 <SDC41@swn.com>

You have received a secure message from Southwestern Energy

Read your secure message by opening the attachment, securedoc_20211213T080418.html. You will be prompted to open (view) the file or save (download) it to your computer. For best results, save the file first, then open it in a Web browser. To access from a mobile device, forward this message to mobile@res.cisco.com to receive a mobile login URL.

If you have concerns about the validity of this message, contact the sender directly.

securedoc_20211213T080418.html
146K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

API 47-077-00030-0000 SW 7380 Employee/contractor and fallen trees

2 messages

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Fri, May 20, 2022 at 6:36 PM
To: lorrie_steadman@tcenergy.com, Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>, Gayne.J.Knitowski@wv.gov, CHARLES.T.BREWER@wv.gov

Lorrie the photos are too numerous to send of employees/contractors but I have attached a few of the men onsite without PPE attached - safety glasses and hardhats are they no longer required?

*******PLEASE remove the wilting trees as soon as possible from the site. Our cattle still have access and will eat these leaves which can lead to their deaths.

Joann

3 attachments



DSCF0530.JPG
2311K



DSCF0534.JPG
2384K



DSCF0570.JPG
2423K

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Fri, May 20, 2022 at 6:37 PM

To: lorrie_steadman@tcenergy.com, Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>, Gayne.J.Knitowski@wv.gov, CHARLES.T.BREWER@wv.gov

[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

API 47-077-00030SW 7380 Employee/contractor and fallen trees

1 message

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Fri, May 20, 2022 at 6:37 PM
To: lorrie_steadman@tcenergy.com, Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>, Gayne.J.Knitowski@wv.gov, CHARLES.T.BREWER@wv.gov

Lorrie the photos are too numerous to send of employees/contractors but I have attached a few of the men onsite without PPE attached - safety glasses and hardhats are they no longer required?

*******PLEASE remove the wilting trees as soon as possible from the site. Our cattle still have access and will eat these leaves which can lead to their deaths.

Joann

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

API WELL NO. 47-077-00030-0000 TERRA ALTA WELL 7398

2 messages

Joann Lewis <joann.lewisfarm@gmail.com> Wed, Feb 2, 2022 at 2:04 PM
To: CHARLES.T.BREWER@wv.gov, "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>, JAMES.A.MARTIN@wv.gov
Cc: ralph@lewisfarmwv.com

Mr. Martin, thank you for speaking with me today concerning the plugging of a well on our property in Terra Alta Preston County.
Per our conversation I have attached our comments concerning the plugging of well 7398.

I will be sending this document as well as photos. I will send them to the address provided in the documents from TC Energy/Columbia Gas Transmission.

--
7582 Saltlick Road
Terra Alta WV 26764
3047892232
joann@lewisfarmwv.com

DEP letter 1-31-2022.docx
27K

Joann Lewis <joann.lewisfarm@gmail.com> Fri, May 27, 2022 at 11:20 AM
To: JAMES.A.MARTIN@wv.gov, "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>, ralph@lewisfarmwv.com, CHARLES.T.BREWER@wv.gov

Gentlemen, I believe Gayne and has been in the email thread for the ongoing conversation with TC Energy for the well in front of our home and the inability of TC Energy to identify the issue with gas loss downhole.

We would like to know if the state of WV has a timeline for this type of work. Is it 12 months? And after that time can TC Energy be forced to plug the well?

Joann
---------- Forwarded message ---------
From: **Martin, James A** <james.a.martin@wv.gov>
Date: Wed, Feb 2, 2022 at 2:45 PM
Subject: Re: API WELL NO. 47-077-00030-0000 TERRA ALTA WELL 7398
To: Joann Lewis <joann.lewisfarm@gmail.com>

Ms. Lewis,

I will forward your email to all the pertinent staff here. Your comments will be considered as part of our review and processing of the application. Thank you.
[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

assessments

6 messages

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Mon, Jan 10, 2022 at 2:04 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: "Newlon, Douglas C" <douglas.c.newlon@wv.gov>

Does the fire incident--SWN? warrant an assessment (fine)--any other recent incidents also?

--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Jan 10, 2022 at 2:24 PM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>

I think it does. I am planning to take a ride down tomorrow and do my WR-35. We can discuss if you are in the office tomorrow.
[Quoted text hidden]

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Mon, Jan 10, 2022 at 3:07 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Sounds good.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Jan 11, 2022 at 8:07 AM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>

Not going to make it down there today. Shot for Thursday.
[Quoted text hidden]

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Tue, Jan 11, 2022 at 8:11 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Sounds good.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Jan 13, 2022 at 9:17 AM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>

The NOV #11753 SWN Reinbeau
51-01622
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Automatic reply Re: RE: Columbia Well #7417

1 message

Brewer, Charles T <charles.t.brewer@wv.gov> Mon, Jun 6, 2022 at 8:13 AM
To: gayne.j.knitowski@wv.gov

I will be out of the office June 6th through June 10th.

--

Taylor Brewer, B.S., M.S.

Assistant Chief - Permitting

WVDEP Office of Oil and Gas

601 57th Street, SE

Charleston, WV 25304

304-926-0499 ext. 41108

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Automatic reply: [External] Re: SWN FRAC NOTIFICATION - BETTY SCHAFER PAD

4 messages

Anders Storaune <Anders_Storaune@swn.com> Mon, Mar 14, 2022 at 4:23 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I am currently out of the office and have limited access to e-mail and phone. Will return on 3/21. If urgent pls call my cell.

Anders

Andrea Bond <Andrea_Bond@swn.com> Mon, Mar 14, 2022 at 4:23 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I am currently out of the office and will return Monday, March 21, 2022.

I will be checking my email periodically, please call my cell with anything urgent: 832-302-6921.

Thank you!

Heather Franer <Heather_Franer@swn.com> Mon, Mar 14, 2022 at 4:23 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I will be out of the office working in the field from 3/7 - 3/17. Please expect delays in response. If you need anything urgent please call my cell 832-745-2628.

Thanks,

Heather

Liz Gee <liz_gee@swn.com> Mon, Mar 14, 2022 at 4:23 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I will be out of the office the week of March 14th, checking emails periodically.

For assistance while I am out, please contact:

- Colorado - Karen Maneotis
- Haynesville - Patricia Solis, Jamie McCoy
- Northeast App - Melanie Wiggins
- Southwest App - Denise Grantham, Brittany Woody

All other issues - Carla Suszkowski

Thank you,

Liz Gee

Regulatory Supervisor

Northeast & Southwest Appalachia Divisions

10000 Energy Drive

Spring, TX 77389-4954

Office: 832 796 2873

Cell: 281 900 7484
Liz_Gee@swn.com

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Betty Schafer MSH 1H - Intermediate Cement Job Report

1 message

sdc40 <sdc40@swn.com> Sun, Feb 13, 2022 at 10:11 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Joel Still <Joel_Still@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, sdc40 <sdc40@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

Gayne,

The job report for the Betty Schafer 1H Intermediate cement job and Casing tally is attached. The job was pumped as designed with 46 barrels of cement circulated to surface. If you have any questions, please let us know.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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2 attachments

Betty Schafer MSH 1, Intermediate casing cement job report.pdf
287K

Intermediate Casing Tally.pdf
212K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Betty Schafer MSH 1H - Surface Cement Job Report

1 message

sdc40 <sdc40@swn.com> Thu, Feb 10, 2022 at 5:32 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

Gayne,

The job report for the Betty Schafer 1H Surface cement job is attached. The job was pumped as designed with 26 barrels of cement circulated to surface. If you have any questions, please let us know.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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2 attachments

Surface casing tally,Betty Schafer MSH 1.pdf
209K

BETTY SCHAFER 1H JOB REPORT.pdf
289K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Betty Schafer MSH 3H - Intermediate Cement Job Report

1 message

sdc40 <sdc40@swn.com> Fri, Jan 28, 2022 at 7:09 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Gayne,

The job report for the Betty Schafer 3H Intermediate cement job is attached. The job was pumped as designed with 55 barrels of cement circulated to surface. If you have any questions, please let us know

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Buddy Manuel 405-323-0255

sdc40@swn.com

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cement report Schaffer 3H Intermediate.pdf
335K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Betty Schafer MSH 3H - Surface Cement Job Report

1 message

sdc40 <sdc40@swn.com> Tue, Jan 25, 2022 at 6:31 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Gayne,

The job report for the Betty Schafer 3H Surface cement job is attached. The job was pumped as designed with 26 barrels of cement circulated to surface. If you have any questions, please let us know.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Buddy Manuel 405-323-0255

sdc40@swn.com

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cement report Schaffer 3H Surface.pdf
251K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Betty Schafer MSH 405H

8 messages

Brittany Woody <Brittany_Woody@swn.com> Tue, Jan 4, 2022 at 8:27 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Hey Gayne-

I was going to call, but since this is a lot of information I thought it would be easier to have it in writing..

Drilling has noticed an issue on the Betty Schafer MSH 405H that is set to spud on Thursday. Drilling is wanting to add 20' of surface hole and push the surface casing 25' deeper to better cover the coal interval. They are also wanting to drill the intermediate interval to 1820' and set intermediate casing at 1800'. The reasoning for this is to get a better casing seat below the base of the Big Injun. I attached the updated WBD with the changes highlighted. The problem is we do not have the option to delay the spud to get an approved modification through the system. They requested I speak to you in regards to getting a verbal approval to extend the setting depths so we can get competent rock in which we set the casing- it's really a safety issue at this point.

If this is okay with you, I will send over all of the mod pages ASAP, just let me know.

Thanks!

Brittany Woody

Senior Regulatory Analyst

Southwestern Energy

1300 Fort Pierpont Dr., Suite 201

Morgantown, WV 26508

Office: 304-884-1613

Cell: 304-997-2598

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Betty Schafer 405H WBD-DEP Mod 010122.pdf
850K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Jan 4, 2022 at 12:24 PM
To: Brittany Woody <Brittany_Woody@swn.com>

Send me the Ww-6 so I can verify elevation and water/ coal depths. Should be a problem to give you verbal
[Quoted text hidden]

Brittany Woody <Brittany_Woody@swn.com> Tue, Jan 4, 2022 at 4:36 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Attached is the 6B you requested. Let me know if you are okay with the changes.

Just an FYI- The Betty Schafer 1H and 3H will be getting the same changes.

[Quoted text hidden]
[Quoted text hidden]

EPSON003.PDF
1745K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Jan 5, 2022 at 9:11 AM
To: Brittany Woody <Brittany_Woody@swn.com>

I am good with the changes for the depths of the casing.
[Quoted text hidden]

Brittany Woody <Brittany_Woody@swn.com> Wed, Jan 5, 2022 at 9:15 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thanks Gayne!! I'll be sending the new documents for the 1H and 3H to you today for you to sign.

[Quoted text hidden]
[Quoted text hidden]

Brittany Woody <Brittany_Woody@swn.com> Wed, Jan 5, 2022 at 10:54 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Here are the modifications that require your signature for Betty Schafer MSH 1H, Betty Shafer MSH 3H, and Betty Schafer MSH 405H.

From: Knitowski, Gayne J <gayne.j.knitowski@wv.gov>
Sent: Wednesday, January 05, 2022 9:12 AM

[Quoted text hidden]

[Quoted text hidden]
[Quoted text hidden]

3 attachments

Betty Schafer MSH 1H_Mod.pdf
2141K

Betty Schafer MSH 3H_Mod.pdf
2167K

Betty Schafer 405H WBD-DEP Mod 010122.pdf
850K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Jan 6, 2022 at 3:03 PM
To: Brittany Woody <Brittany_Woody@swn.com>

Attached are the Schafer mods. I will try to look at the others you sent me tomorrow
[Quoted text hidden]

---

3 attachments

Betty Schafer 405H WBD-DEP Mod 010122.pdf
914K

MSH 1H.pdf
2226K

MSH 3H_Mod.pdf
2251K

Brittany Woody <Brittany_Woody@swn.com> Thu, Jan 6, 2022 at 3:04 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Sounds good. Thank you!

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Betty Shafer MSH 1H - Production Cement Job Report

1 message

sdc40 <sdc40@swn.com> Thu, Feb 24, 2022 at 7:43 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Gayne,

The job report for the Betty Shafer MSH 1H Production cement job is attached. The job was pumped as designed with 57 barrels of cement circulated to surface. If you have any questions, please let us know.

Thank you!

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

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PLOT REPORT.pdf
541K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Betty Shafer MSH 3H - Production Cement Job Report

1 message

sdc40 <sdc40@swn.com> Tue, Feb 8, 2022 at 5:49 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>

Gayne,

The job report for the Betty Shafer MSH 3H Production cement job is attached. If you have any questions, please let us know.

Thank you!

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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Betty Schafer MSH 1, Cementing Job Report.pdf
452K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Betty Shafer MSH 405H - Production Cement Job Report

1 message

sdc40 <sdc40@swn.com> Sun, Jan 23, 2022 at 7:08 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>

Gayne,

The job report for the Betty Shafer MSH 405H Production cement job is attached. The job was pumped as designed with 20 barrels of spacer circulated to surface. If you have any questions, please let us know.

Thank you!

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Buddy Manuel 405-323-0255

sdc40@swn.com

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Betty Schafer MSH 405H-Schlumberger-5.5 in job log.pdf
671K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Brian Teslovich BRK 1 Surface Bond Log

1 message

sdc40 <sdc40@swn.com> Wed, Nov 17, 2021 at 6:49 PM
To: Derek Motley <Derek_Motley@swn.com>, "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>, Dave Bert <Dave_Bert@swn.com>, sdc40 <sdc40@swn.com>

For your approval

SDC 40

Office: 304-884-1864

WSS Days: Chris Johnson 870-598-7390

WSS Nights: Jeff Hill 501-428-2672

sdc40@swn.com

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swn_teslovich1h_rcbl_17_nov_2021.pdf
1244K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Cancel Permit

3 messages

Brittany Woody <Brittany_Woody@swn.com> Thu, Jan 13, 2022 at 11:43 AM
To: "Stansberry, Wade A" <Wade.A.Stansberry@wv.gov>
Cc: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I overnighted a new permit for the Edward Dremak UP OHI 2H to you yesterday. Can you please cancel the existing permit, please? API 47-069-00332.

Thanks!

Brittany Woody

Senior Regulatory Analyst

Southwestern Energy

1300 Fort Pierpont Dr., Suite 201

Morgantown, WV 26508

Office: 304-884-1613

Cell: 304-997-2598

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Jan 13, 2022 at 3:07 PM
To: Brittany Woody <Brittany_Woody@swn.com>

Brittany,

Did not get the permit today but I will get the existing one canceled. Also make sure the site for the pad you want walked is completely staked out. I can probably get to next Thursday the 20th or any day the following week.

Regards,

Gayne
[Quoted text hidden]

Brittany Woody <Brittany_Woody@swn.com> Thu, Jan 13, 2022 at 3:17 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

You already signed the Dremak, I sent it Wade yesterday. I just CC'd you so you knew I would be cancelling the existing permit.

The 20th works for me. I can be there around 10am. I'll send you the coordinates. Thanks!!

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Carl Rotter AST

2 messages

Dawn Keller <Dawn_Keller@swn.com> Tue, Mar 15, 2022 at 4:17 PM
To: Gayne J Knitowski <Gayne.J.Knitowski@wv.gov>

Hi Gayne,

We will be mobilizing in the equipment to start the Rotter AST on Monday, installing E&S on Tuesday and breaking ground on Wednesday, if everything goes to plan.

Thanks!

Dawn Keller
Senior Environmental Specialist
SWN SWAPP Division
501-697-7230
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Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Mar 15, 2022 at 4:25 PM
To: Dawn Keller <Dawn_Keller@swn.com>

Ok
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Carl Rotter OHI 10 - Surface Cement Job Report

1 message

sdc40 <sdc40@swn.com> Fri, Apr 15, 2022 at 6:20 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

Gayne,

The job report for the Carl Rotter OHI 10, Surface cement job is attached. The job was pumped as designed with 39 barrels of cement circulated to surface. If you have any questions, please let us know.

Thank you

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

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2 attachments

cement report Carl Rotter 10H Surface.pdf
312K

Surface tally 10H.pdf
210K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Carl Rotter OHI 10H - Intermediate Cement Job Report

1 message

sdc40 <sdc40@swn.com> Mon, Apr 18, 2022 at 12:48 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

Gayne,

The job report for the Carl Rotter OHI 10H Intermediate cement job is attached. The job was pumped as designed with 25 barrels of cement circulated to surface. If you have any questions, please let us know.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

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2 attachments

Carl Rotter OHI 10H_IC.pdf
365K

Intermediate tally 10H REV 1.pdf
217K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Carl Rotter OHI 10H - Production Cement Job Report

1 message

sdc40 <sdc40@swn.com> Wed, Apr 27, 2022 at 7:02 AM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, sdc40 <sdc40@swn.com>

Strader / Gayne,

The job report for the Carl Rotter OHI 10H Production cement job is attached. The job was pumped as designed with 11 barrels of cement circulated to surface. ETOC @ 0' If you have any questions, please let us know.

Thank you!

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

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2 attachments

Carl Rotter OHI 10 5.5 Production Rev..pdf
356K

Carl Rotter OHI 10H, Cement Job Report.pdf
743K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Carl Rotter OHI 206H - Intermediate Cement Job Report

1 message

sdc40 <sdc40@swn.com> Sun, Mar 6, 2022 at 9:53 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

Gayne,

The job report for the Carl Rotter OHI 206H Intermediate cement job is attached. The job was pumped as designed with 48 barrels of cement circulated to surface. If you have any questions, please let us know.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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2 attachments

CARL ROTTER 206H INT JOB REPORT.pdf
284K

Carl Rotter OHI 206, Intermediate Casing Tally.pdf
229K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Carl Rotter OHI 206H - Production Cement Job Report

1 message

sdc40 <sdc40@swn.com> Wed, Mar 16, 2022 at 12:34 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Gayne,

The job report for the Carl Rotter OHI 206H Production cement job is attached. The job was pumped as designed with 48 barrels of cement circulated to surface. If you have any questions, please let us know.

Thank you!

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

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PLOT REPORT.pdf
588K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Carl Rotter OHI 206H - Surface Cement Job Report

1 message

sdc40 <sdc40@swn.com> Thu, Mar 3, 2022 at 9:38 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

Gayne,

The job report for the Carl Rotter OHI 206H Surface cement job is attached. The job was pumped as designed with 75 barrels of cement circulated to surface. If you have any questions, please let us know.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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2 attachments

Carl Rotter OHI 206, Surface Cement Report.pdf
1232K

Carl Rotter OHI 206H, Surface Casing Tally.pdf
210K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Carl Rotter OHI 6 - Surface Cement Job Report

1 message

sdc40 <sdc40@swn.com> Sat, Mar 19, 2022 at 8:58 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

Gayne,

The job report for the Carl Rotter OHI 6 Surface cement job is attached. The job was pumped as designed with 47 barrels of cement circulated to surface. If you have any questions, please let us know.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

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2 attachments

Plot Report Configuration.pdf
171K

Surface tally.pdf
210K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Carl Rotter OHI 6H - Intermediate Cement Job Report

1 message

sdc40 <sdc40@swn.com> Mon, Mar 21, 2022 at 6:15 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

Gayne,

The job report for the Carl Rotter OHI 6H Intermediate cement job is attached. The job was pumped as designed with 37 barrels of cement circulated to surface. If you have any questions, please let us know.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

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2 attachments

cement report Carl Rotter 6H Intermediate.pdf
254K

Intermediate Tally.pdf
216K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Carl Rotter OHI 6H - Production Cement Job Report

1 message

sdc40 <sdc40@swn.com> Tue, Mar 29, 2022 at 11:38 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Gayne,

The job report for the Carl Rotter OHI 6H Production cement job is attached. The job was pumped as designed with 64 barrels of spacer circulated to surface. If you have any questions, please let us know.

Thank you!

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

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CARL ROTTER 6H PRO JOB REPORT.pdf
397K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Carl Rotter OHI 8 - Surface Cement Job Report

1 message

sdc40 <sdc40@swn.com> Thu, Mar 31, 2022 at 7:28 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

Gayne,

The job report for the Carl Rotter OHI 8, Surface cement job is attached. The job was pumped as designed with 52 barrels of cement circulated to surface. If you have any questions, please let us know.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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2 attachments

CARL ROTTER 8H SURFACE.pdf
516K

Surface Casing Tally.pdf
307K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Carl Rotter OHI 8H - Intermediate Cement Job Report

1 message

sdc40 <sdc40@swn.com> Sat, Apr 2, 2022 at 6:38 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, sdc40 <sdc40@swn.com>

Gayne,

The job report for the Carl Rotter OHI 8H Intermediate cement job is attached. The job was pumped as designed with 33 barrels of cement circulated to surface. If you have any questions, please let us know.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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2 attachments

Intermediate Casing Tally.pdf
269K

CARL ROTTER 8H INTERMEDIATE.pdf
245K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Carl Rotter OHI 8H - Production Cement Job Report

1 message

sdc40 <sdc40@swn.com> Tue, Apr 12, 2022 at 10:16 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Gayne,

The job report for the Carl Rotter OHI 8H Production cement job is attached. The job was pumped as designed with 0 barrels of spacer circulated to surface. ETOC @ 4,078' If you have any questions, please let us know.

Thank you!

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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cement report Rotter 8H Production.pdf
370K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Cement Files, Brian Teslovich BRK 5H

2 messages

sdc40 <sdc40@swn.com> Fri, Nov 5, 2021 at 2:50 PM
To: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>, "Stollings, Barry W" <barry.w.stollings@wv.gov>
Cc: Derek Motley <Derek_Motley@swn.com>, Dave Bert <Dave_Bert@swn.com>

SDC 40

Office: 304-884-1864

WSS Days: Daniel Martinez 479-209-5893

WSS Nights: Ron Rudd 724-840-6381

sdc40@swn.com

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cement report Teslovich 5 Production.pdf
347K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Nov 5, 2021 at 3:06 PM
To: sdc40 <sdc40@swn.com>

On Fri, Nov 5, 2021 at 2:50 PM sdc40 <sdc40@swn.com> wrote:

> Thanks
>
> [Quoted text hidden]
> [Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

cement report OE Burge 205H Intermediate job log

1 message

SDC41 <SDC41@swn.com> Mon, Dec 6, 2021 at 6:53 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, TC energy DMR <TCenergyDMR@swnenergy.onmicrosoft.com>
Cc: Matt Weems <Matt_Weems@swn.com>

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Donny Newby 501-269-0361

Office: 281-833-2645

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cement report OE Burge 205H Intermediate.pdf
264K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

CHARLES JAMISON 410H SURFACE CEMENT REPORT

1 message

SDC41 <SDC41@swn.com> Tue, Mar 22, 2022 at 6:03 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>

Regards,

SDC 41

Day WSS: Jeff Hill 501-428-2672

Night WSS: Donny Newby 501-269-0361

Rig Office Cell 724-231-3151

Office: 281-833-2645 / 713-423-6942

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CHARLES JAMISON 410H CEMENT REPORT.pdf
250K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Charles Jamison 610 H Surface cement report

1 message

SDC41 <SDC41@swn.com> Thu, Apr 14, 2022 at 6:33 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Dicky Hall <Dicky_Hall@swn.com>
Cc: Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

Charles Jamison 610H Surface cement report.

Regards,

SDC 41

Day WSS: Jeff Hill 501-428-2672

Night WSS: Donny Newby 501-269-0361

Rig Office Cell 724-231-3151

Office: 281-833-2645 / 713-423-6942

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cement report Jamison 610H Surface.pdf
328K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Charles Jamison MSH 410 - Intermediate Cement

1 message

SDC41 <SDC41@swn.com> Sat, Mar 26, 2022 at 7:35 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

Gayne,

The job report for the Charles Jamison MSH 410 intermediate cement is attached. The job was pumped as designed with 65 barrels of cement circulated to surface. If you have any questions, please let us know.

Thanks

Regards,

SDC 41

Day WSS: Jeff Hill 501-428-2672

Night WSS: Donny Newby 501-269-0361

Rig Office Cell 724-231-3151

Office: 281-833-2645 / 713-423-6942

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Charles Jamison MSH 410 - Intermediate Cement Job Log.pdf
447K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Charles Jamison MSH 410 - Surface Cement

1 message

SDC41 <SDC41@swn.com> Mon, Mar 21, 2022 at 1:03 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

Gayne,

We just finished pumping our surface cement job on the Charles Jamison MSH 410 and did not circulate cement to surface. We will perform a top out job and bring cement to surface this afternoon and plan to run a CBL sometime in the morning. We hope to have a finished log for your review late tomorrow morning. You'll receive a call once the finished log has been sent. If you have any questions, please let us know.

Thanks

Regards,

SDC 41

Day WSS: Jeff Hill 501-428-2672

Night WSS: Donny Newby 501-269-0361

Rig Office Cell 724-231-3151

Office: 281-833-2645 / 713-423-6942

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Charles Jamison MSH 610 - Production Cement Report

1 message

SDC41 <SDC41@swn.com> Mon, Apr 11, 2022 at 6:32 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

Gayne,

The cement report for the Charles Jamison MSH 410 production cement job is attached. The job was pumped as designed with 26 barrels of spacer circulated to surface. If you have any questions, please let us know.

Thanks

Regards,

SDC 41

Day WSS: Jeff Hill 501-428-2672

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

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Charles Jamison 410H Production Cement Report.pdf
422K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Charles Jamison MSH 810 - Production Casing Cement Log - Details

1 message

SDC41 <SDC41@swn.com> Thu, Jun 2, 2022 at 6:33 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

Charles Jamison MSH 810 - Production Casing Cement Details:

Fill cement lines and pressure test 1,000 psi low - 7000 psi high, all tests held for 5 min.. Pump 150 bbls MPE @ 14.0 ppg 0.900 lb/bbl B389 + 1.0 gal/bbl B553 + 0.1 gal/bbl D047 + 314.658 lb/bbl D031 , Drop bottom plug. Mix and pump tail cement 4624 sks 1,065 bbls Class "A" 100 BWOB D901 cement slurry @ 15.0 ppg 1.29 yld 6.00 gal/sk 0.40% BWOB D255 + 0.02 BWOB D047 + 0.04% BWOB D208 + 0.71% BWOB D800. Drop top plug, Displace with 604 bbls fresh water (20 bbls sugar water to start 50 lbs/per 10 bbls) w/0.02 gal/bbl L064 + 0.08 gal/bbl M300 + 5 gal/bbl TP110. Bumped plug w/3,850 psi (500 psi over) @ 20:03 hrs 06/01/2022, Held pressure for 5 mins, released pressure to check floats, floats held. Bled back 9 bbls to truck. Returned 0 bbls mud flush spacer to surface. Estimated TOC @ 3,730' using mud volume returned from well for calculation. Full returns throughout the whole job, with full rotation, max torque of 32k.

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Rick Harless 713-725-2389

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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Charles Jamison MSH 810 - Production Casing Cement Log.pdf
3575K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Charles Jamison MSH Revisions

3 messages

Brittany Woody <Brittany_Woody@swn.com> Thu, Jan 20, 2022 at 3:40 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Hey Gayne-

Apparently drilling had a typo when they sent me the coal depths for these wells. The changes are highlighted, if you could sign and send back to me, please.

The Charles Jamison MSH 410H, 610H, 810H and 406H are currently pending at the DEP.

The Charles Jamison MSH 606H has not yet been submitted to the DEP.

Let me know if you have any questions.

Thanks!

Brittany Woody

Senior Regulatory Analyst

Southwestern Energy

1300 Fort Pierpont Dr., Suite 201

Morgantown, WV 26508

Office: 304-884-1613

Cell: 304-997-2598

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5 attachments

EPSON005.PDF
1200K

EPSON001.PDF
1195K

EPSON002.PDF
1195K

EPSON003.PDF
1191K

EPSON004.PDF
1189K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Jan 21, 2022 at 8:22 AM
To: Brittany Woody <Brittany_Woody@swn.com>

Attached are the signed revised permits. Have a good day.
[Quoted text hidden]

5 attachments

EPSON001.PDF
1272K

EPSON002.PDF
1272K

EPSON005.PDF
1277K

EPSON004.PDF
1266K

EPSON003.PDF
1268K

Brittany Woody <Brittany_Woody@swn.com> Fri, Jan 21, 2022 at 8:45 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thanks! You, too!

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Charles Jamison Pad Inspections

3 messages

Gary Kerans <domeaz@me.com> Tue, Apr 26, 2022 at 1:28 PM
To: Gayne.J.Knitowski@wv.gov

Hello, I have noticed your inspection reports regarding the new wells on the Charles Jamison Pad in Marshall Co and the fact that drilling was commenced on the 51-2425 & 2426 wells. On 51-2427 & 2434 the 20" conductor casing was reported on your 2/22/22 inspections. No inspections are listed on the 51-2436 well. Since Southwestern Energy normally drills all wells on a site when equipment is in place I wondered if you could confirm if in fact the drilling process has commenced on all 5 new wells. My wife and I are royalty owners on the new 2434 & 2436 wells and 3 of the producing wells on the pad.

Any information is appreciated and I will continue to monitor your reports as the best way to track progress on the Jamison site.

Thank you,

Gary Kerans
domeaz@me.com
928 925-5099

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Apr 26, 2022 at 3:27 PM
To: Gary Kerans <domeaz@me.com>

Gary,

All 5 conductors for the five wells were set. The reason why the fifth one was not drilled until a later is because SWN was waiting on the permit to be issued. Hope that answers your question.

Regards,

Gayne Knitowski
[Quoted text hidden]

Gary Kerans <domeaz@me.com> Tue, Apr 26, 2022 at 4:49 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thank you Gayne for your quick reply. I figured the conductor on the 2436 well was delayed due to the permit. We will await your future inspection reports as the drilling and fracking process continues on the Charles Jamison pad.

Regards

Gary Kerans
domeaz@me.com

[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Chevron/EQT

2 messages

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Jan 25, 2022 at 9:50 AM
To: Jackie N Thornton <jackie.n.thornton@wv.gov>

Jackie,

Attached is the permit cancellation for the site in Marshall that was never drilled and the pad reclaimed.

Thanks,

Gayne

51-02210.pdf
616K

Thornton, Jackie N <jackie.n.thornton@wv.gov> Tue, Jan 25, 2022 at 9:50 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thank you.
[Quoted text hidden]
--
Jackie Thornton
Environmental Resource Analyst
WVDEP-Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
jackie.n.thornton@wv.gov
304-206-6015

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Columbia Plugging permit

6 messages

Martin, James A <james.a.martin@wv.gov> Wed, Feb 2, 2022 at 12:05 PM
To: "McLaughlin, Jeffrey W" <jeffrey.w.mclaughlin@wv.gov>, Taylor Brewer <charles.t.brewer@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

All--I just got off the phone with Jo Ann Lewis about a plugging permit for a well on her property. The well operator is Columbia Gas Transmission and the well number is 7398 (not sure what the permit number is). She has concerns about the placement of pits on the property and will be filling comments later today. I don't know when we received the application but I want to make sure that we are able to consider her comments. She is supposed to email those to Taylor and Gayne.

McLaughlin, Jeffrey W <jeffrey.w.mclaughlin@wv.gov> Wed, Feb 2, 2022 at 1:27 PM
To: "Martin, James A" <james.a.martin@wv.gov>
Cc: Taylor Brewer <charles.t.brewer@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thanks for the update.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Feb 2, 2022 at 2:01 PM
To: "McLaughlin, Jeffrey W" <jeffrey.w.mclaughlin@wv.gov>
Cc: "Martin, James A" <james.a.martin@wv.gov>, Taylor Brewer <charles.t.brewer@wv.gov>

I talked with Joann earlier this week. She said that Columbia Gas notified her of proposed plugging on her property. We did not receive the permit yet. In the package she received it said if she had any objection to notify the Chief at OOG. From what she sent me they are proposing two large pits that seem like overkill. I will forward them to you all.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Feb 3, 2022 at 2:10 PM
To: "McLaughlin, Jeffrey W" <jeffrey.w.mclaughlin@wv.gov>
Cc: "Martin, James A" <james.a.martin@wv.gov>, Taylor Brewer <charles.t.brewer@wv.gov>

I received the plugging permits today. I would think you should get them in Charleston late next week. The well Joann is concerned about is API No. 77-00030
[Quoted text hidden]

McLaughlin, Jeffrey W <jeffrey.w.mclaughlin@wv.gov> Thu, Feb 3, 2022 at 3:16 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: "Martin, James A" <james.a.martin@wv.gov>, Taylor Brewer <charles.t.brewer@wv.gov>

Thanks for the update.
[Quoted text hidden]

McLaughlin, Jeffrey W <jeffrey.w.mclaughlin@wv.gov> Thu, Feb 3, 2022 at 3:16 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: "Martin, James A" <james.a.martin@wv.gov>, Taylor Brewer <charles.t.brewer@wv.gov>

[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

CPG Data Gathering & Troubleshooting Well - WV Tract No.: 6-43-6 Preston County, West Virginia

23 messages

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Fri, Feb 25, 2022 at 11:36 AM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>
Cc: Ralph Lewis <ralph@lewisfarmwv.com>

Lorrie work began on February 15 2022 and with Monday February 21 2022 being a holiday the project has been ongoing for 8 days. Steve had said he could have the project complete and be out in 7 days. And we were told Steve would be complete and moving offsite yesterday February 24 2022.

There is now a pipe segment removed from the well head arm and lying on the ground.

Please update us on the findings and the future plans as this is worrisome.

Joann

Lorrie Steadman <lorrie_steadman@tcenergy.com> wrote ..
> Ralph & Joann:
>
> The project team plans to arrive Monday to begin installing the mats and kick off
> this project. Let me know if you have any questions.
>
> Thanks,
>
> Lorrie Steadman
> Land Representative
> Land Services
> Columbia Gas Transmission LLC/ TC Energy
> 12001 Industrial Park St.
> Cumberland, MD 21502
> Office: (301)729-5624
> Cell: (304)290-7572
> Lorrie_Steadman@tcenergy.com<mailto:Lorrie_Steadman@tcenergy.com>
>
> From: Ralph Lewis <ralph@lewisfarmwv.com>
> Sent: Thursday, February 3, 2022 8:20 AM
> To: Lorrie Steadman <lorrie_steadman@tcenergy.com>
> Cc: 'Joann Lewis' <joann@lewisfarmwv.com>
> Subject: RE: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract No.:
> 6-43-6 Preston County, West Virginia
>
> Friday the 4th at 10 Am or Monday the 7th at 10 AM. I would prefer not to push
> this out too far so that work can commence and be complete prior to spring.
>
>
> From: Lorrie Steadman [mailto:lorrie_steadman@tcenergy.com]
> Sent: Wednesday, February 02, 2022 4:30 PM
> To: Ralph Lewis
> Cc: Joann Lewis
> Subject: RE: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract No.:
> 6-43-6 Preston County, West Virginia
> Importance: High
>
> Ralph & Joann:
>
> We now have a winter weather advisory beginning at 7am tomorrow, so I need to reschedule

> our site visit. Would next Wednesday, February 9th at 10:00 work for you?
>
> Lorrie Steadman
> Land Representative
> Land Services
> Columbia Gas Transmission LLC/ TC Energy
> 12001 Industrial Park St.
> Cumberland, MD 21502
> Office: (301)729-5624
> Cell: (304)290-7572
> Lorrie_Steadman@tcenergy.com<mailto:Lorrie_Steadman@tcenergy.com>
>
> From: Lorrie Steadman <lorrie_steadman@tcenergy.com<mailto:lorrie_steadman@tcenergy.com>>
> Sent: Monday, January 31, 2022 8:55 AM
> To: Ralph Lewis <ralph@lewisfarmwv.com<mailto:ralph@lewisfarmwv.com>>
> Subject: Re: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract No.:
> 6-43-6 Preston County, West Virginia
>
> Thursday works, can we meet around 10:00?
>
> Lorrie
>
> Get Outlook for iOS<https://urldefense.proofpoint.com/v2/url?u=https-3A__aka.ms_o0ukef&d=DwMFAg&c=Q5SXIsxPryShfyrkNJViwkWBHuTWASXd1LyNpDogBFY&r=4W1VrB5n105ELuVmwmpL1zAO2xRQKTwv2G6UcSZiQHo&m=TkvITPF7G2v-HVY2rX3eMPFLlmFhIDEZkO5eqzaVP9P3bIlmYO-1pHmNLTAk7csp&s=Tv7TkjgLw03kpnajwst6KsLBVMEWB0hNtvoPUK7vH64&e=>
> _____
> From: Ralph Lewis <ralph@lewisfarmwv.com<mailto:ralph@lewisfarmwv.com>>
> Sent: Sunday, January 30, 2022 11:13:45 AM
> To: Lorrie Steadman <lorrie_steadman@tcenergy.com<mailto:lorrie_steadman@tcenergy.com>>
> Subject: RE: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract No.:
> 6-43-6 Preston County, West Virginia
>
> The weather looks fair and we will be available to meet at the site Thursday
> 2-3-22.
>
> -----Original Message-----
> From: Lorrie Steadman [mailto:lorrie_steadman@tcenergy.com]
> Sent: Friday, January 28, 2022 11:30 AM
> To: Lorrie Steadman; Joann Lewis
> Cc: Lorrie Steadman
> Subject: Re: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract
> No.: 6-43-6 Preston County, West Virginia
>
> I consulted with the team and perhaps it would be best to meet to discuss
> your concerns. We can meet when everyone it is convenient for you. Next
> week's weather looks to be a little milder. Is there a day and time that
> suits you?
>
> Lorrie
>
> Get Outlook for iOS<https://urldefense.proofpoint.com/v2/url?u=https-3A__aka.ms_o0ukef&d=DwICAg&c=Q5SXIsxPryShfyrkNJViwkWBHuTWASXd1LyNpDogBFY&r=4W1VrB5n105ELuVmwmpL1zAO2xRQKTwv2G6UcSZiQHo&m=Q7Xkz_JQmKRAhthaEkCqet2EUICb00W8gqAEFK1k5FpDKeQ0MjQ80K99bvw1wFf-&s=smKnu-g2NF_uWntIdiP73MgYsRWxpQkIkg9cPqviEyc&e=
> <https://urldefense.proofpoint.com/v2/url?u=https-3A__aka.ms_o0ukef&d=DwICAg&c=Q5SXIsxPryShfyrkNJViwkWBHuTWASXd1LyNpDogBFY&r=4W1VrB5n105ELuVmwmpL1zAO2xRQKTwv2G6UcSZiQHo&m=Q7Xkz_JQmKRAhthaEkCqet2EUICb00W8gqAEFK1k5FpDKeQ0MjQ80K99bvw1wFf-&s=smKnu-g2NF_uWntIdiP73MgYsRWxpQkIkg9cPqviEyc&e=%20>
> > _____
> From: Lorrie Steadman <lorrie_steadman@tcenergy.com<mailto:lorrie_steadman@tcenergy.com>>
> Sent: Thursday, January 20, 2022 10:41:05 AM
> To: Ralph Lewis <ralph@lewisfarmwv.com<mailto:ralph@lewisfarmwv.com>>; joann@lewisfarmwv.com<mailto:joann@lewisfarmwv.com>
> <joann@lewisfarmwv.com<mailto:joann@lewisfarmwv.com>>

> Cc: Karen Franks <karen_franks@tcenergy.com<mailto:karen_franks@tcenergy.com>>;
> 'Ralph Lewis'
> <ralph@lewisfarmwv.com<mailto:ralph@lewisfarmwv.com>>
> Subject: Re: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract
> No.: 6-43-6 Preston County, West Virginia
>
> Ralph
>
> Let me check with the team and get back to you.
>
> Lorrie
>
> Get Outlook for iOS<https://urldefense.proofpoint.com/v2/url?u=https-3A__aka.ms_o0ukef&d=DwICAg&c=Q5SXIsxPryShfyrkNJViwkWBHuTWASXd1LyNpDogBFY&r=4W1VrB5n105ELuVmwmpL1zAO2xRQKTwv2G6UcSZiQHo&m=Q7Xkz_JQmKRAhthaEkCqet2EUICb00W8gqAEFK1k5FpDKeQ0MjQ80K99bvw1wFf-&s=smKnu-g2NF_uWntIdiP73MgYsRWxpQkIkg9cPqviEyc&e=>
> <https://urldefense.proofpoint.com/v2/url?u=https-3A__aka.ms_o0ukef&d=DwICAg&c=Q5SXIsxPryShfyrkNJViwkWBHuTWASXd1LyNpDogBFY&r=4W1VrB5n105ELuVmwmpL1zAO2xRQKTwv2G6UcSZiQHo&m=Q7Xkz_JQmKRAhthaEkCqet2EUICb00W8gqAEFK1k5FpDKeQ0MjQ80K99bvw1wFf-&s=smKnu-g2NF_uWntIdiP73MgYsRWxpQkIkg9cPqviEyc&e=%20>
> > _____
> From: Ralph Lewis <ralph@lewisfarmwv.com<mailto:ralph@lewisfarmwv.com>>
> Sent: Thursday, January 20, 2022 9:27:47 AM
> To: Lorrie Steadman <lorrie_steadman@tcenergy.com<mailto:lorrie_steadman@tcenergy.com>>;
> joann@lewisfarmwv.com<mailto:joann@lewisfarmwv.com>
> <joann@lewisfarmwv.com<mailto:joann@lewisfarmwv.com>>
> Cc: Karen Franks <karen_franks@tcenergy.com<mailto:karen_franks@tcenergy.com>>;
> 'Ralph Lewis'
> <ralph@lewisfarmwv.com<mailto:ralph@lewisfarmwv.com>>
> Subject: RE: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract
> No.: 6-43-6 Preston County, West Virginia
>
> Ms Steadman,
> The info you have sent seems reasonable. If the work area is as you attest
> to on the attached map there should not be any issues. However we would like
> to see more site specifics such as:
> Where Environmental controls (EC) will be located?
> Will top soil be stripped, if so where stockpiled?
> Where will the frac tank be placed?
> Will the entire site be safety fenced to keep pets out, workers in?
> Porta john, staging area, parking etc.
> Ralph Lewis
>
> -----Original Message-----
> From: Lorrie Steadman [mailto:lorrie_steadman@tcenergy.com]
> Sent: Wednesday, January 12, 2022 2:23 PM
> To: joann@lewisfarmwv.com<mailto:joann@lewisfarmwv.com>
> Cc: Ralph@Lewisfarmwv.com<mailto:Ralph@Lewisfarmwv.com>; Karen Franks
> Subject: RE: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract
> No.: 6-43-6 Preston County, West Virginia
>
> Ralph & Joann:
>
> In response to your concerns regarding the data gathering and
> troubleshooting to be completed on Well 7417. . Columbia will continue to
> use only the historically agreed upon access for this project (map
> attached); . Blowdowns will be conducted in a controlled manner to reduce
> noise levels; . I will notify you at least 24 hours prior to any blowdown;
> . An Environmental Inspector is to be assigned to this project and will
> determine if any erosion control devices are required and when they can be
> removed; . Columbia will make every effort to restrict work hours between
> 8am and 5pm, of course excepting unforeseen situations requiring us to
> continue after hours in order to safely complete an activity or reach a
> stopping point that is conducive to securing the well overnight; . Below is
> the summary of our plans, which will likely occur in two phases, as outlined

> below:
>
> PHASE 1 - Investigate and Diagnose
>
> Concise Scope of Work
> 1. Disconnect pipeline from wellhead.
> 2. Prepare access road and well site to accommodate scope of work.
> 3. Obtain wireline logs and install mechanical bridge plug.
> 4. Manipulate and monitor well pressures for diagnostic purposes.
>
> Estimated Start/Duration
> . Work to begin mid-February when 45-day landowner notification
> period expires.
> . It is estimated Phase 1 will take 2-4 weeks.
>
> PHASE 2 - Mitigate/Repair/Resolve
>
> Concise Scope of Work
> 1. Scope of work TBD, based on results in Phase 1.
>
> Estimated Start/Duration
> . Start date TBD based on scope of work, clearances, permits,
> material, resources, etc.
> . Duration TBD based on scope of work.
>
> Please let me know if I can be of further assistance.
>
> Thanks,
> Lorrie Steadman
> Land Representative
> U.S. Land Services East
>
> | Columbia Gas Transmission
> Lorrie_Steadman@tcenergy.com<mailto:Lorrie_Steadman@tcenergy.com>
>
> 12001 Industrial Park Street
> Cumberland, MD
> USA 21502
>
> Tel: 301.729.5624
> Fax: 301.729.5639
> Cell: 304.290.7572
>
> -----Original Message-----
> From: Lorrie Steadman
> Sent: Monday, January 10, 2022 8:29 AM
> To: joann@lewisfarmwv.com<mailto:joann@lewisfarmwv.com>
> Cc: Ralph@Lewisfarmwv.com<mailto:Ralph@Lewisfarmwv.com>
> Subject: RE: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract
> No.: 6-43-6 Preston County, West Virginia
>
> I am working to gather answers to your questions.
>
> Lorrie Steadman
> Land Representative
> U.S. Land Services East
>
> | Columbia Gas Transmission
> Lorrie_Steadman@tcenergy.com<mailto:Lorrie_Steadman@tcenergy.com>
>
> 12001 Industrial Park Street
> Cumberland, MD
> USA 21502
>
> Tel: 301.729.5624

> Fax: 301.729.5639
> Cell: 304.290.7572
>
> -----Original Message-----
> From: joann@lewisfarmwv.com<mailto:joann@lewisfarmwv.com> <joann@lewisfarmwv.com<mailto:joann@lewisfarmwv.com>>
> Sent: Friday, December 31, 2021 1:56 PM
> To: Karen Franks <karen_franks@tcenergy.com<mailto:karen_franks@tcenergy.com>>;
> Lorrie Steadman
> <lorrie_steadman@tcenergy.com<mailto:lorrie_steadman@tcenergy.com>>; US Land
<us_land@tcenergy.com<mailto:us_land@tcenergy.com>>
> Cc: Ralph@Lewisfarmwv.com<mailto:Ralph@Lewisfarmwv.com>
> Subject: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract
> No.: 6-43-6 Preston County, West Virginia
> Importance: High
>
> EXTERNAL EMAIL: PROCEED WITH CAUTION.
> This e-mail has originated from outside of the organization. Do not respond,
> click on links or open attachments unless you recognize the sender or know
> the content is safe. If this email looks suspicious, report it.
>
> ==
> Hello,
>
> We understand that there are issues with the casing and or annulus on SW7417
> that need to be investigated and corrected.
>
>
> Ralph Lewis and I (Joann Lewis) have many concerns with the upcoming
> disturbances that will occur as a result of the investigation and repair. We
> currently have a court approved agreement in place with TC Energy (Columbia
> Gas Transmission), to utilize specific egress and ingress points on our
> property. This agreement has been working for all parties to this point.
>
> We *do not* approve of any "new or modified access" to SW7417 in our
> hay/pasture field or appurtenances added. Nor do we approve of TC Energy,
> their employees or contractors to use our personal driveway for access or
> any other activity. Further we do not approve of any TC employees or
> contracted workers roaming outside the agreed work area. We would like to
> stress to you that we live approximately 100 feet from SW7417 that needs to
> be blown down with pressures in excess of 2000 PSI. We have pets, livestock,
> and most importantly young children that must be considered. Our pets and
> grandchildren are frequently in the yard and driveway, and their safety
> against hearing damage and possible accidental injury is paramount. Also due
> to the proximately of the project we would appreciate no work commence prior
> to 8AM and be prolonged beyond 5PM.
>
> Lastly we have concerns that TC Energy, in more than one instance, has left
> their filter socks, fencing, and other environmental control material on our
> property far longer than is required, presumably left to deteriorate and be
> forgotten. This has caused issues with our livestock and the aesthetic of
> our property. The last experience with construction, in regards to TC
> Energy/ Columbia Gas, TC did not correct or compensate for any of these
> property damages. We were forced to obtain legal counsel to address this in
> 2015 and 2017. There is no reason why this would not be expected to happen
> yet again.
>
> Ralph was ultimately forced to correct the damage to our property himself,
> on our time and at our expense.
>
> I believe we all want the project to be successful without incident on
> either side however mutually agreed boundaries must be set in place first.
>
> Joann and Ralph Lewis
>

> ---
>
>
>
>
>
>
> We respect your right to choose which electronic messages you receive. To
> stop receiving this and similar communications from TC Energy please Click
> here to unsubscribe.
>
>
>
> If you are unable to click the request link, please reply to this email and
> change subject line to "UNSUBSCRIBE".
>
> This electronic message and any attached documents are intended only for the
> named addressee(s). This communication from TC Energy may contain
> information that is privileged, confidential or otherwise protected from
> disclosure and it must not be disclosed, copied, forwarded or distributed
> without authorization. If you have received this message in error, please
> notify the sender immediately and delete the original message.
>
> Thank you
>
>
> _____
>
>
>
> We respect your right to choose which electronic messages you receive. To stop
> receiving this and similar communications from TC Energy please Click here to unsubscribe.<mailto:lorrie_steadman@tcenergy.com?subject=Unsubscribe%20Request%20-%20RE:%20[EXTERNAL]%20CPG%20Data%20Gathering%20&%20Troubleshooting%20Well%20-%20WV%20Tract%20No.:%206-43-6%20Preston%20County,%20West%20Virginia&body=Subject%20of%20Email:RE:%20[EXTERNAL]%20CPG%20Data%20Gathering%20&%20Troubleshooting%20Well%20-%20WV%20Tract%20No.:%206-43-6%20Preston%20County,%20West%20Virginia%0D%0A%20Sender%20of%20Original%20Email:lorrie_steadman@tcenergy.com%0D%0ACurrent%20Date:2022-02-02%0D%0ACurrent%20Time:14:30:21>
>
>
>
> If you are unable to click the request link, please reply to this email and change
> subject line to "UNSUBSCRIBE".
>
> This electronic message and any attached documents are intended only for the named
> addressee(s). This communication from TC Energy may contain information that is
> privileged, confidential or otherwise protected from disclosure and it must not
> be disclosed, copied, forwarded or distributed without authorization. If you have
> received this message in error, please notify the sender immediately and delete
> the original message.
>
> Thank you

Ralph Lewis <ralph@lewisfarmwv.com> Fri, Feb 25, 2022 at 8:02 PM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>, joann@lewisfarmwv.com
Cc: GAYNE.J.KNITOWSKI@wv.gov

No it does not as we are unaware of what "Phase 2" entails. Please clarify as to what is it and the duration.

-----Original Message-----
From: Lorrie Steadman [mailto:lorrie_steadman@tcenergy.com]
Sent: Friday, February 25, 2022 12:56 PM

To: joann@lewisfarmwv.com
Cc: Ralph Lewis
Subject: RE: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract No.: 6-43-6 Preston County, West Virginia

Joann & Ralph:

Steve did finish his work yesterday. We'll continue to monitor. The pipe lying on the ground is where they disconnected the well from the pipeline. For clarification, the matting and safety fencing will remain until phase 2 of the work is completed. I hope this answers your questions, but if not, please let me know.

I'll have more information coming once the team has reviewed the findings from Phase 1.

Thanks,

Lorrie Steadman
Land Representative
Land Services
Columbia Gas Transmission LLC/ TC Energy
12001 Industrial Park St.
Cumberland, MD 21502
Office: (301)729-5624
Cell: (304)290-7572
Lorrie_Steadman@tcenergy.com

-----Original Message-----
From: joann@lewisfarmwv.com <joann@lewisfarmwv.com>
Sent: Friday, February 25, 2022 11:36 AM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>
Cc: Ralph Lewis <ralph@lewisfarmwv.com>
Subject: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract No.: 6-43-6 Preston County, West Virginia
Importance: High

EXTERNAL EMAIL: PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe. If this email looks suspicious, report it.

==========

[Quoted text hidden]

Lorrie Steadman <lorrie_steadman@tcenergy.com> Mon, Feb 28, 2022 at 10:07 AM
To: Ralph Lewis <ralph@lewisfarmwv.com>, "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>
Cc: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>

Ralph & Joann:

In a previous email (dated Jan. 12th) we outlined Phase 1 and 2 as follows:

PHASE 1 - Investigate and Diagnose
>
> Concise Scope of Work
> 1. Disconnect pipeline from wellhead.
> 2. Prepare access road and well site to accommodate scope of work.
> 3. Obtain wireline logs and install mechanical bridge plug.
> 4. Manipulate and monitor well pressures for diagnostic purposes.
>
> Estimated Start/Duration
> . Work to begin mid-February when 45-day landowner
> notification period expires.
> . It is estimated Phase 1 will take 2-4 weeks.
>
> PHASE 2 - Mitigate/Repair/Resolve
>
> Concise Scope of Work

> 1. Scope of work TBD, based on results in Phase 1.
>
> Estimated Start/Duration
> . Start date TBD based on scope of work, clearances, permits,
> material, resources, etc.
> . Duration TBD based on scope of work.

Phase 1 is complete and I'm waiting to learn when Phase 2 will begin.
[Quoted text hidden]

Ralph Lewis <ralph@lewisfarmwv.com> Thu, Mar 10, 2022 at 11:25 AM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>, joann@lewisfarmwv.com
Cc: GAYNE.J.KNITOWSKI@wv.gov

What if anything has been the result of all the testing and monitoring and what is the timeline for reassembling and moving off site?
[Quoted text hidden]

Lorrie Steadman <lorrie_steadman@tcenergy.com> Thu, Mar 10, 2022 at 2:54 PM
To: Ralph Lewis <ralph@lewisfarmwv.com>, "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>
Cc: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>

Let me check with the team and get back to you.

[Quoted text hidden]

Lorrie Steadman <lorrie_steadman@tcenergy.com> Fri, Mar 11, 2022 at 9:38 AM
To: Ralph Lewis <ralph@lewisfarmwv.com>, "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>
Cc: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>

Ralph & Joann:

The diagnostics are still ongoing - we need to monitor pressures over time to determine the trend and steps forward.
[Quoted text hidden]

---

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Mon, Apr 4, 2022 at 10:27 AM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>
Cc: Ralph Lewis <ralph@lewisfarmwv.com>, "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>

Lorrie is there any more information as to when the project will be complete at SW7417 and the mats-fence-and silt socks removed?

If it will be more than 14 days I need the mats between the entrance gate and spring gates moved. I need to mow that area and cannot with the mats in place because they will cause damage to my equipment.
[Quoted text hidden]

Lorrie Steadman <lorrie_steadman@tcenergy.com> Mon, Apr 4, 2022 at 10:36 AM
To: "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>
Cc: Ralph Lewis <ralph@lewisfarmwv.com>, "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>

I'm checking with the crew now.
[Quoted text hidden]

---

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Fri, Apr 8, 2022 at 12:00 PM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>
Cc: Ralph Lewis <ralph@lewisfarmwv.com>, "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>, Karen Franks <karen_franks@tcenergy.com>, Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>

Lorrie do you have a day when the mats can be moved inside the spring gates? The project has been idle for more than a month and I need to mow next week before the holiday.

[Quoted text hidden]

Lorrie Steadman <lorrie_steadman@tcenergy.com> Fri, Apr 8, 2022 at 1:45 PM
To: "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>
Cc: Ralph Lewis <ralph@lewisfarmwv.com>, "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>, Karen Franks <karen_franks@tcenergy.com>, Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>

They said they can move them aside next week on whatever day best suits you.
[Quoted text hidden]
> > == Lorrie work began on February 15 2022 and with Monday February 21
[Quoted text hidden]

Ralph Lewis <ralph@lewisfarmwv.com> Mon, Apr 11, 2022 at 11:37 AM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>, joann@lewisfarmwv.com
Cc: GAYNE.J.KNITOWSKI@wv.gov, Karen Franks <karen_franks@tcenergy.com>, Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>

Please move them inside the fenced area where the others are stored and not "aside" so that the path between the access gate and spring gate is clear.
[Quoted text hidden]

Lorrie Steadman <lorrie_steadman@tcenergy.com> Mon, Apr 11, 2022 at 11:39 AM
To: Ralph Lewis <ralph@lewisfarmwv.com>, "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>
Cc: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>, Karen Franks <karen_franks@tcenergy.com>, Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>

Ok, forwarding to the team.
[Quoted text hidden]

Ralph Lewis <ralph@lewisfarmwv.com> Mon, Apr 11, 2022 at 11:42 AM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>, joann@lewisfarmwv.com
Cc: GAYNE.J.KNITOWSKI@wv.gov, Karen Franks <karen_franks@tcenergy.com>, Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>

Also it has been 2 months when will "phase two" be complete?
[Quoted text hidden]

Lorrie Steadman <lorrie_steadman@tcenergy.com> Mon, Apr 11, 2022 at 2:12 PM
To: Ralph Lewis <ralph@lewisfarmwv.com>, "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>
Cc: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>, Karen Franks <karen_franks@tcenergy.com>, Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>

Ralph & Joann:

We are not done with the diagnostic of the well. We continue to monitor every other day for annulus pressure.
[Quoted text hidden]

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joann@lewisfarmwv.com <joann@lewisfarmwv.com> Wed, May 11, 2022 at 10:02 AM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>
Cc: Ralph Lewis <ralph@lewisfarmwv.com>, "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>

Lorrie it has now been 3 months and the last time Steve or anyone was at the well was Friday April 29 2022. Is there a diagnosis and a plan to move off the location?
[Quoted text hidden]

Ralph Lewis <ralph@lewisfarmwv.com> Thu, May 12, 2022 at 11:17 AM
To: joann@lewisfarmwv.com, Lorrie Steadman <lorrie_steadman@tcenergy.com>
Cc: GAYNE.J.KNITOWSKI@wv.gov

Lorrie next month is hay making season for us what is the status of the work on SW7417?
[Quoted text hidden]

Lorrie Steadman <lorrie_steadman@tcenergy.com> Thu, May 12, 2022 at 11:20 AM
To: Ralph Lewis <ralph@lewisfarmwv.com>, "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>
Cc: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>

Ralph & Joann:

We are unable to move off location due to phased diagnostic plan requiring to test multiple zones of the well for integrity. This length of diagnostic period at each zone will depend on well condition, waiting on a distinctive pressure trend result. We will again have to monitor the well every other day for a period of ~2 weeks, maybe more, from the new depth of the bridge plug. We may have a result right away or may have to go deeper in the well to diagnose the other potential leak zones.

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> > == Lorrie work began on February 15 2022 and with Monday February 21

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> > > From: Lorrie Steadman
> > > <lorrie_steadman@tcenergy.com<mailto:lorrie_steadman@tcenergy.com>
> > > >
> > > Sent: Thursday, January 20, 2022 10:41:05 AM
> > > To: Ralph Lewis
> > > <ralph@lewisfarmwv.com<mailto:ralph@lewisfarmwv.com>>;
> > > joann@lewisfarmwv.com<mailto:joann@lewisfarmwv.com>
> > > <joann@lewisfarmwv.com<mailto:joann@lewisfarmwv.com>>
> > > Cc: Karen Franks
> > > <karen_franks@tcenergy.com<mailto:karen_franks@tcenergy.com>>;

> > > 'Ralph Lewis'
> > > <ralph@lewisfarmwv.com<mailto:ralph@lewisfarmwv.com>>
> > > Subject: Re: [EXTERNAL] CPG Data Gathering & Troubleshooting Well
> > > - WV Tract
> > > No.: 6-43-6 Preston County, West Virginia
> > >
> > > Ralph
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> > > Let me check with the team and get back to you.
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Ralph Lewis <ralph@lewisfarmwv.com> Mon, May 16, 2022 at 11:06 AM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>, joann@lewisfarmwv.com
Cc: GAYNE.J.KNITOWSKI@wv.gov

After 3 months still no diagnostics? Will the rig be back to move or lower the plug? This plans seems rather loose.

Any plans on perhaps plugging if this diagnostic phase goes into a period 6 months or a year and TC Energy cannot resolve the issue of the well losing pressure? A well that has an operating pressure of 3500 PSI and has issues is more than concerning.

[Quoted text hidden]

Lorrie Steadman <lorrie_steadman@tcenergy.com> Mon, May 16, 2022 at 11:09 AM
To: Ralph Lewis <ralph@lewisfarmwv.com>, "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>
Cc: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>

Ralph & Joann:

I've forwarded your comments to the team for review and response. I'll be in touch.

Thanks,
Lorrie Steadman
Land Representative
Land Services
Columbia Gas Transmission LLC/ TC Energy
12001 Industrial Park St.
Cumberland, MD 21502
Office: (301)729-5624
Cell: (304)290-7572
Lorrie_Steadman@tcenergy.com

-----Original Message-----
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Lorrie Steadman <lorrie_steadman@tcenergy.com> Tue, May 24, 2022 at 11:51 AM
To: "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>
Cc: Ralph Lewis <ralph@lewisfarmwv.com>, "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>

Ralph & Joann:

Here's an update from the team:

- To date we verified surface equipment integrity, diagnosed and ruled out a shallow casing leak and a shallow charged pressure zone leak path. As part of the maintenance investigation we need to continue diagnosing casing string components and other potential leak paths deeper in the wellbore.
- At this time there is nothing that recommends the abandonment of the well.
- We will continue to keep you aware of our activities and respond as necessary to your concerns. The bottom line is that the well is isolated and controlled and does not present a safety or environmental risk to anyone.

In addition, we did get the gas sample results back recently. We'll be coming back soon to reset the bridge plug deeper in the well to continue with the investigation.
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> > == Lorrie work began on February 15 2022 and with Monday February 21
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> > > From: Lorrie Steadman
> > > <lorrie_steadman@tcenergy.com<mailto:lorrie_steadman@tcenergy.com>
> > > >
> > > Sent: Thursday, January 20, 2022 10:41:05 AM
> > > To: Ralph Lewis
> > > <ralph@lewisfarmwv.com<mailto:ralph@lewisfarmwv.com>>;
> > > joann@lewisfarmwv.com<mailto:joann@lewisfarmwv.com>
> > > <joann@lewisfarmwv.com<mailto:joann@lewisfarmwv.com>>
> > > Cc: Karen Franks
> > > <karen_franks@tcenergy.com<mailto:karen_franks@tcenergy.com>>;
> > > 'Ralph Lewis'
> > > <ralph@lewisfarmwv.com<mailto:ralph@lewisfarmwv.com>>
> > > Subject: Re: [EXTERNAL] CPG Data Gathering & Troubleshooting Well
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Ralph Lewis <ralph@lewisfarmwv.com> Fri, May 27, 2022 at 9:53 AM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>, joann@lewisfarmwv.com
Cc: GAYNE.J.KNITOWSKI@wv.gov

Surely this cannot be an indefinite process. It is stressful to have this ongoing.

I need to cut these fields for hay in the next 2 weeks.
[Quoted text hidden]

Ralph Lewis <ralph@lewisfarmwv.com> Tue, Jun 7, 2022 at 9:29 AM
To: Ralph Lewis <ralph@lewisfarmwv.com>, Lorrie Steadman <lorrie_steadman@tcenergy.com>, joann@lewisfarmwv.com
Cc: GAYNE.J.KNITOWSKI@wv.gov

Lorrie is there a reason we had no notice that they were showing up today with a rig?

-----Original Message-----
From: Ralph Lewis [mailto:ralph@lewisfarmwv.com]
Sent: Friday, May 27, 2022 9:54 AM
To: 'Lorrie Steadman'; 'joann@lewisfarmwv.com'
Cc: 'GAYNE.J.KNITOWSKI@WV.GOV'
Subject: RE: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract No.: 6-43-6 Preston County, West Virginia

Surely this cannot be an indefinite process. It is stressful to have this ongoing.

I need to cut these fields for hay in the next 2 weeks.

-----Original Message-----
From: Lorrie Steadman [mailto:lorrie_steadman@tcenergy.com]
Sent: Tuesday, May 24, 2022 11:52 AM
[Quoted text hidden]

---

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Wed, Jun 8, 2022 at 9:45 AM
To: Karen Franks <karen_franks@tcenergy.com>, "<lorrie_steadman"@tcenergy.com, Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>
Cc: Ralph Lewis <ralph@lewisfarmwv.com>, GAYNE.J.KNITOWSKI@wv.gov

To ALL Steve and your contractor, Baker Hughes, chose to blow off high pressure gas into our white pines and bamboo. I will photograph the conditions of both toady and let you know if they brown or die so that we may be reimbursed.

Ralph Lewis <ralph@lewisfarmwv.com> wrote ..
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

David Reinbeau MSH 1H & 201H mods

3 messages

Brittany Woody <Brittany_Woody@swn.com> Mon, Apr 18, 2022 at 2:14 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Hey Gayne-

Disregard the documents I sent you last week and please sign the attached. We are wanting to extend the laterals.

Thanks!

Brittany Woody

Senior Regulatory Analyst

Southwestern Energy

1300 Fort Pierpont Dr., Suite 201

Morgantown, WV 26508

Office: 304-884-1613

Cell: 304-997-2598

Notice: This e-mail may contain privileged and/or confidential information and is intended only for the addressee. If you are not the addressee or the person responsible for delivering it to the addressee, you may not copy or distribute this communication to anyone else. If you received this communication in error, please notify us immediately by telephone or return e-mail and promptly delete the original message from your system.

2 attachments

David Reinbeau MSH 201H mod.pdf
4746K

Reinbeau MSH 1H Mod.pdf
4874K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Apr 18, 2022 at 5:46 PM
To: Brittany Woody <Brittany_Woody@swn.com>

Attached are the signed mods. Did the SSP plan change with the lateral length? It usually has to change in there also.
[Quoted text hidden]

2 attachments

David Reinbeau MSH 201H Mod.pdf
4820K

Reinbeau MSH 1H Mod.pdf
4948K

Brittany Woody <Brittany_Woody@swn.com> Tue, Apr 19, 2022 at 9:31 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thanks! There is nothing in our SSP's that mentions a lateral length change.

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

David Reinbeau MSH 201H Mod

1 message

Brittany Woody <Brittany_Woody@swn.com> Thu, Jun 16, 2022 at 2:49 PM
To: Strader C Gower <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Hey There-

Attached for your signature is a modification for the above mentioned well. The team would like to extend the lateral again. Please let me know if you have any questions.

Thanks!

Brittany Woody

Senior Regulatory Analyst

Southwestern Energy

1300 Fort Pierpont Dr., Suite 201

Morgantown, WV 26508

Office: 304-884-1613

Cell: 304-997-2598

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David Reinbeau MSH 201H Mod.pdf
2892K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

David Reinbeau MSH 3H Modification

3 messages

Brittany Woody <Brittany_Woody@swn.com> Thu, Apr 7, 2022 at 2:14 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Hey Gayne-

Attached is a modification for the recently approved David Reinbeau MSH 3H. We would like to extend the lateral. Please let me know if you have any questions.

Thanks!

Brittany Woody

Senior Regulatory Analyst

Southwestern Energy

1300 Fort Pierpont Dr., Suite 201

Morgantown, WV 26508

Office: 304-884-1613

Cell: 304-997-2598

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David Reinbeau MSH 3H Mod.pdf
2992K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Apr 8, 2022 at 8:10 AM
To: Brittany Woody <Brittany_Woody@swn.com>

Brittany,

Attached is the signed mod.

Gayne
[Quoted text hidden]

David Reinbeau MSH 3H Mod.pdf
3065K

Brittany Woody <Brittany_Woody@swn.com> Fri, Apr 8, 2022 at 9:37 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thank you! Have a good weekend.

Thanks!

Brittany Woody
Senior Regulatory Analyst

> On Apr 8, 2022, at 8:11 AM, Knitowski, Gayne J <gayne.j.knitowski@wv.gov> wrote:
>
> Brittany,
>
> Attached is the signed mod.
>
> Gayne
>
> On Thu, Apr 7, 2022 at 2:14 PM Brittany Woody <Brittany_Woody@swn.com> wrote:
>
> > Hey Gayne-
> >
> > Attached is a modification for the recently approved David Reinbeau MSH 3H. We would like to extend the lateral. Please let me know if you have any questions.
> >
> > Thanks!
> >
> > Brittany Woody
> > Senior Regulatory Analyst
> >
> > 1300 Fort Pierpont Dr., Suite 201
> > Morgantown, WV 26508
> > Office: 304-884-1613
> > Cell: 304-997-2598

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[Quoted text hidden]

3 attachments



image001.png
4K



image001.png
4K

David Reinbeau MSH 3H Mod.pdf
3065K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

David Reinbeau MSH Mod's

3 messages

Brittany Woody <Brittany_Woody@swn.com> Wed, May 25, 2022 at 11:45 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Strader C Gower <strader.c.gower@wv.gov>

Attached for your review and signature are lateral modification's for David Reinbeau MSH 1H & 201H. Please let me know if you have any questions.

Thanks!

Brittany Woody

Senior Regulatory Analyst

Southwestern Energy

1300 Fort Pierpont Dr., Suite 201

Morgantown, WV 26508

Office: 304-884-1613

Cell: 304-997-2598

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2 attachments

David Reinbeau MSH 1H_Lateral Mod.pdf
3293K

David Reinbeau MSH 201H Lateral Mod.pdf
2861K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, May 26, 2022 at 9:19 AM
To: Brittany Woody <Brittany_Woody@swn.com>
Cc: Strader C Gower <strader.c.gower@wv.gov>

Attached are the signed modifications.

Regards,

Gayne
[Quoted text hidden]

2 attachments

David Reinbeau MSH 201H Lateral Mod.pdf
2935K

David Reinbeau MSH 1H_Lateral Mod.pdf
3366K

Brittany Woody <Brittany_Woody@swn.com> Thu, May 26, 2022 at 9:23 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thanks!

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Deep Horizontal H6A Well Work Permit API: (47-051-02424)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Wed, Jan 26, 2022 at 12:07 PM
To: Amy Morris <amorris@tug-hillop.com>, Eric Buzzard <ebuzzard@marshallcountywv.org>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-051-02424 - WILLETT S-17HU

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **47-051-02424 - Copy.pdf** 7134K
- **WMP02474 Willett 2021.12.13.pdf** 1037K
- **IR-26 Blank.pdf** 169K
- **51-02424 SSP signed.pdf** 17163K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Deep Horizontal H6A Well Work Permit API: 47-069-00333)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Tue, Mar 1, 2022 at 8:45 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Tiffany Hoffman <thoffman@assessor.state.wv.us>, mpowell@wvassessor.com

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00333 - EDWARD DREMAK OHI UP 2H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry
Environmental Resource Specialist 3
West Virginia Department of Environmental Protection
Office of Oil & Gas
601 57th St. SE
Charleston, WV 25304
(304) 926-0499 ext. 41115
(304) 926-0452 fax
Wade.A.Stansberry@wv.gov

4 attachments

- **47-069-00333 - Copy.pdf** 4390K
- **WMP02288 Edward Dremak OHI mod 2022.01.26.pdf** 418K
- **69-00333 SSP signed.pdf** 3837K
- **IR-26 Blank.pdf** 169K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

East Dolly Sods 2 1932

3 messages

Keri Fieno <keri.fieno@chk.com> Mon, Jan 31, 2022 at 3:52 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>

Classification: DCL-Internal

Good afternoon,

Per our conversation this afternoon, I've attached the P&A summary packet for our East Dolly Sods 2 1932 well. I've also attached the Drilling/Completion information we have on file. Let me know if you have any questions and if the plugging procedure is acceptable.

Thank you,

Keri Fieno

HSER, Regulatory Specialist

Chesapeake Energy Corporation

6100 N Western Avenue

Oklahoma City, OK 73118

Office: 405-935-1154

Email: keri.fieno@chk.com

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3 attachments

East Dolly Sods 2 1932 P&A Summary Packet (Draft).pdf
402K

Seneca Completion.pdf
37K

2020-06-03_Business Development Correspondence.pdf
198K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Feb 1, 2022 at 10:59 AM
To: Keri Fieno <keri.fieno@chk.com>

There are two things that I would add or change.

1. Attempt to pull all free pipe at a min. of 1-1/2x string weight

2. Class A cement must be used. You can apply for a waiver from the Chief to use Class H cement.

Any questions let me know.

Regards,

Gayne
[Quoted text hidden]

Keri Fieno <keri.fieno@chk.com> Tue, Feb 1, 2022 at 5:25 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Classification: DCL-Internal

Thank you for reviewing the plan. I will pass this information along to our engineers.

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

EPSON001.PDF

1 message

Gayne J Knitowski via DocHub <no-reply@dochub.com> Wed, Nov 10, 2021 at 1:53 PM
Reply-To: Gayne J Knitowski <gayne.j.knitowski@wv.gov>
To: gayne.j.knitowski@wv.gov

DocHub

Gayne J Knitowski sent you a document EPSON001.PDF

Gayne J Knitowski
gayne.j.knitowski@wv.gov

> Please see the attached document.
>
> Sent from my DocHub

Sent by Gayne J Knitowski (gayne.j.knitowski@wv.gov, IP: 50.110.214.152).

Powered by DocHub.com - View, edit and sign PDFs in your web browser

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EPSON001.PDF.pdf
622K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited H6A Horizontal Well Work Permit (API: 47-069-00340) CORRECTED COPY

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Mon, May 16, 2022 at 10:29 AM
To: Brittany Woody <Brittany_Woody@swn.com>, Liz Gee <liz_gee@swn.com>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Strader C Gower <strader.c.gower@wv.gov>, THOFFMAN@wvassessor.com

I apologize. I confused my folders I was working out of.

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00340 - OCC-A OHI 1H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **47-069-00340 - Copy.pdf** 4878K
- **WMP01967 OCC A OHI mod 2022.04.22.pdf** 436K
- **IR-26 Blank.pdf** 169K
- **69-00340 SSP signed.pdf** 3087K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited H6A Horizontal Well Work Permit (API: 47-069-00340)

3 messages

Stansberry, Wade A <wade.a.stansberry@wv.gov> Mon, May 16, 2022 at 10:21 AM
To: Brittany Woody <Brittany_Woody@swn.com>, Liz Gee <liz_gee@swn.com>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Strader C Gower <strader.c.gower@wv.gov>, THOFFMAN@wvassessor.com

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00340 - OCC-A OHI 201H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **47-069-00340 - Copy.pdf** 4878K
- **69-00341 SSP signed.pdf** 3119K
- **IR-26 Blank.pdf** 169K
- **WMP01967 OCC A OHI mod 2022.04.22.pdf** 436K

Stansberry, Wade A <wade.a.stansberry@wv.gov> Mon, May 16, 2022 at 10:26 AM
To: Brittany Woody <Brittany_Woody@swn.com>, Liz Gee <liz_gee@swn.com>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Strader C Gower <strader.c.gower@wv.gov>, THOFFMAN@wvassessor.com

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00341 - OCC-A OHI 201H

[Quoted text hidden]

4 attachments

47-069-00341 - Copy.pdf
4675K

IR-26 Blank.pdf
169K

WMP01967 OCC A OHI mod 2022.04.22.pdf
436K

69-00341 SSP signed.pdf
3119K

Stansberry, Wade A <wade.a.stansberry@wv.gov> Mon, May 16, 2022 at 10:27 AM
To: Brittany Woody <Brittany_Woody@swn.com>, Liz Gee <liz_gee@swn.com>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Strader C Gower <strader.c.gower@wv.gov>, THOFFMAN@wvassessor.com

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

[Quoted text hidden]

69-00340 SSP signed.pdf
3087K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited H6A Horizontal Well Work Permit (API: 47-069-00341) CORRECTED COPY

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Mon, May 16, 2022 at 10:28 AM
To: Brittany Woody <Brittany_Woody@swn.com>, Liz Gee <liz_gee@swn.com>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Strader C Gower <strader.c.gower@wv.gov>, THOFFMAN@wvassessor.com

I apologize. I confused my folders I was working out of.

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00341 - OCC-A OHI 201H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **47-069-00341 - Copy.pdf** 4675K
- **69-00341 SSP signed.pdf** 3119K
- **WMP01967 OCC A OHI mod 2022.04.22.pdf** 436K
- **IR-26 Blank.pdf** 169K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited H6A Horizontal Well Work Permit (API: 47-069-00342)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Mon, May 23, 2022 at 9:06 AM
To: Brittany Woody <Brittany_Woody@swn.com>, Liz Gee <liz_gee@swn.com>, THOFFMAN@wvassessor.com, mpowell@wvassessor.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Strader C Gower <strader.c.gower@wv.gov>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00342 - OCC-A OHI 401H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **IR-26 Blank.pdf** 169K
- **47-069-00342 - Copy.pdf** 4874K
- **WMP01967 OCC A OHI mod 2022.04.22.pdf** 436K
- **69-00342 SSP signed.pdf** 3199K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited H6A Horizontal Well Work Permit (API: 47-069-00343)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Mon, May 23, 2022 at 9:52 AM
To: Brittany Woody <Brittany_Woody@swn.com>, Liz Gee <liz_gee@swn.com>, THOFFMAN@wvassessor.com, mpowell@wvassessor.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Strader C Gower <strader.c.gower@wv.gov>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00343 - OCC-A OHI 601H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **47-069-00343 - Copy.pdf** 4386K
- **69-00343 SSP signed.pdf** 4086K
- **WMP01967 OCC A OHI mod 2022.04.22.pdf** 436K
- **IR-26 Blank.pdf** 169K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited H6A Horizontal Well Work Permit API: 47-051-02436)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Fri, Mar 4, 2022 at 9:56 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Eric Buzzard <ebuzzard@marshallcountywv.org>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-051-02436 - CHARLES JAMISON MSH 606H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry
Environmental Resource Specialist 3
West Virginia Department of Environmental Protection
Office of Oil & Gas
601 57th St. SE
Charleston, WV 25304
(304) 926-0499 ext. 41115
(304) 926-0452 fax
Wade.A.Stansberry@wv.gov

4 attachments

- **IR-26 Blank.pdf** 169K
- **47-051-02436 - Copy.pdf** 10811K
- **WMP02427 Charles Jamison MSH mod 2022.02.02.pdf** 1430K
- **51-02436 SSP signed.pdf** 2871K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit (API: 47-051-02417)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Mon, Nov 29, 2021 at 11:36 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, "Knitowski, Gayne J" <e026012@wv.gov>, Eric Buzzard <ebuzzard@marshallcountywv.org>

CORRECTED SUBJECT LINE

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-051-02417- BETTY SCHAFER MSH 3H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **47-051-02417 - Copy.pdf** 4760K
- **WMP02104 Betty Schafer MSH 2021.11.03.pdf** 1778K
- **51-02417 SSP signed.pdf** 3078K
- **IR-26 Blank.pdf** 152K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: (47-051-02425)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Fri, Jan 21, 2022 at 1:08 PM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Eric Buzzard <ebuzzard@marshallcountywv.org>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-051-02425 - CHARLES JAMISON MSH 410H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **IR-26 Blank.pdf** 169K
- **47-051-02425 - Copy.pdf** 10175K
- **WMP02427 Charles Jamison MSH mod 2021.12.14.pdf** 1821K
- **410H SSP.pdf** 6085K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: (47-051-02426)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Fri, Jan 21, 2022 at 1:27 PM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Eric Buzzard <ebuzzard@marshallcountywv.org>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-051-02426 - CHARLES JAMISON MSH 610H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **IR-26 Blank.pdf** 169K
- **47-051-02426 - Copy.pdf** 10138K
- **WMP02427 Charles Jamison MSH mod 2021.12.14.pdf** 1821K
- **610H SSP.pdf** 106K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: (47-051-02427)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Fri, Jan 21, 2022 at 1:50 PM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Eric Buzzard <ebuzzard@marshallcountywv.org>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-051-02427 - CHARLES JAMISON MSH 810H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

IR-26 Blank.pdf
169K

WMP02427 Charles Jamison MSH mod 2021.12.14.pdf
1821K

47-051-02427 - Copy.pdf
10283K

810H SSP.pdf
6084K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: 47-009-00328)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Tue, Feb 8, 2022 at 12:13 PM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, Charles Brewer <charles.t.brewer@wv.gov>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Tom Oughton <toughton@assessor.state.wv.us>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-009-00328 - BROWNLEE LAND VENTURES BRK 6

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry
Environmental Resource Specialist 3
West Virginia Department of Environmental Protection
Office of Oil & Gas
601 57th St. SE
Charleston, WV 25304
(304) 926-0499 ext. 41115
(304) 926-0452 fax
Wade.A.Stansberry@wv.gov
<47-085-10414 - Copy.pdf><47-085-10415 - Copy.pdf><47-085-10417 - Copy.pdf>

4 attachments

- **47-009-00328 - Copy.pdf**
  3638K
- **WMP02544 Brownlee Land Ventures 2021.11.02.pdf**
  1806K
- **9-00328 SSP signed.pdf**
  2939K
- **IR-26 Blank.pdf**
  169K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: 47-009-00329)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Tue, Apr 19, 2022 at 8:40 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, Strader C Gower <strader.c.gower@wv.gov>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-009-00329 - MIKE RYNIAWEC BRK 6H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **47-009-00329 - Copy.pdf** 4221K
- **IR-26 Blank.pdf** 169K
- **9-00329 SSP signed.pdf** 2974K
- **WMP02334 Mike Ryniawec BRK mod 2022.03.21.pdf** 1650K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: 47-051-02438)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Tue, Apr 26, 2022 at 11:05 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, Strader C Gower <strader.c.gower@wv.gov>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Eric Buzzard <ebuzzard@marshallcountywv.org>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-051-02438 - DAVID REINBEAU MSH 1H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

5 attachments

- **47-051-02438 - Copy.pdf** 4058K
- **IR-26 Blank.pdf** 169K
- **51-02438 SSP signed.pdf** 3410K
- **WMP01992 Source Addition 2022.03.30.pdf** 143K
- **WMP01992 David Reinbeau MSH mod 2022.03.30.pdf** 1668K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: 47-051-02439)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Wed, Apr 6, 2022 at 3:28 PM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, Eric Buzzard <ebuzzard@marshallcountywv.org>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-051-02439 - DAVID REINBEAU MSH 3H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **47-051-02439 - Copy.pdf** 4130K
- **WMP01992 Source Addition 2022.03.30.pdf** 143K
- **IR-26 Blank.pdf** 169K
- **3H SSP.pdf** 7796K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: 47-051-02440)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Tue, Apr 26, 2022 at 11:34 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Strader C Gower <strader.c.gower@wv.gov>, Eric Buzzard <ebuzzard@marshallcountywv.org>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-051-02440 - DAVID REINBEAU MSH 201H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

6 attachments

- **47-051-02440 - Copy.pdf** 4248K
- **WMP01992 Source Addition 2022.03.30.pdf** 143K
- **WMP01992 David Reinbeau MSH mod 2022.03.30.pdf** 1668K
- **WMP01992 David Reinbeau MSH mod 2022.03.18.pdf** 1653K
- **51-02440 SSP signed.pdf** 3193K
- **IR-26 Blank.pdf** 169K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: 47-069-00328)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Tue, Mar 8, 2022 at 11:21 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, THOFFMAN@wvassessor.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00328 - CARL ROTTER OHI 10H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry
Environmental Resource Specialist 3
West Virginia Department of Environmental Protection
Office of Oil & Gas
601 57th St. SE
Charleston, WV 25304
(304) 926-0499 ext. 41115
(304) 926-0452 fax
Wade.A.Stansberry@wv.gov

2 attachments

47-069-00328 - mod.pdf
2976K

IR-8 Blank.pdf
228K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: 47-069-00334)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Mon, Mar 21, 2022 at 2:45 PM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, THOFFMAN@wvassessor.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00334 - SHANNON FIELD OHI 210H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry
Environmental Resource Specialist 3
West Virginia Department of Environmental Protection
Office of Oil & Gas
601 57th St. SE
Charleston, WV 25304
(304) 926-0499 ext. 41115
(304) 926-0452 fax
Wade.A.Stansberry@wv.gov

4 attachments

- **47-069-00334 - Copy.pdf** 5047K
- **WMP02647 Shannon Fields OHI 2022.02.07.pdf** 289K
- **IR-26 Blank.pdf** 169K
- **69-00334 SSP signed.pdf** 2823K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: 47-069-00335)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Thu, Apr 7, 2022 at 8:26 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, THOFFMAN@wvassessor.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00335 - TIMMY MINCH OHI 8H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **IR-26 Blank.pdf** 169K
- **47-069-00335 - Copy.pdf** 4867K
- **69-00335 SSP signed.pdf** 7952K
- **WMP01833 Timmy Minch OHI mod 2022.03.18.pdf** 1654K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: 47-069-00336)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Thu, Apr 7, 2022 at 8:35 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, THOFFMAN@wvassessor.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00336 - TIMMY MINCH OHI 10H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **47-069-00336 - Copy.pdf** 4997K
- **WMP01833 Timmy Minch OHI mod 2022.03.18.pdf** 1654K
- **69-00336 SSP signed.pdf** 3041K
- **IR-26 Blank.pdf** 169K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: 47-069-00337)

2 messages

Stansberry, Wade A <wade.a.stansberry@wv.gov> Thu, Apr 7, 2022 at 8:39 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, THOFFMAN@wvassessor.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00337 - TIMMY MINCH OHI 210H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **47-069-00337 - Copy.pdf** 4768K
- **WMP01833 Timmy Minch OHI mod 2022.03.18.pdf** 1654K
- **69-00337 SSP signed.pdf** 3038K
- **IR-26 Blank.pdf** 169K

Brittany Woody <Brittany_Woody@swn.com> Thu, Apr 7, 2022 at 8:40 AM
To: "Stansberry, Wade A" <wade.a.stansberry@wv.gov>, Liz Gee <liz_gee@swn.com>, "THOFFMAN@wvassessor.com" <THOFFMAN@wvassessor.com>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

Thank you!

[Quoted text hidden]

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: 47-069-00338)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Mon, Apr 11, 2022 at 11:59 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, THOFFMAN@wvassessor.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, J Scott Rodeheaver <j.scott.rodeheaver@wv.gov>

Scott,

Pass this onto the new inspector for the Northern Panhandle. I've attached Gayne to this for backup.

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00338 - SHANNON FIELDS OHI 10H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **47-069-00338 - Copy.pdf** 4281K
- **69-00338 SSP signed.pdf** 3219K
- **WMP02647 Shannon Fields OHI 2022.03.18.pdf** 1646K
- **IR-26 Blank.pdf** 169K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Horizontal H6A Well Work Permit API: 47-069-00339)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Tue, Apr 19, 2022 at 9:16 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, Strader C Gower <strader.c.gower@wv.gov>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, THOFFMAN@wvassessor.com

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00339 - ROTH OHI 10H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **IR-26 Blank.pdf** 169K
- **47-069-00339 - Copy.pdf** 3643K
- **WMP02727 Roth OHI Well pad 2022.03.21.pdf** 1645K
- **Roth 10 SSP signed.pdf** 6452K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Modification Horizontal H6A Well Work Permit API: 47-051-02425, 02426, 02427)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Tue, Feb 8, 2022 at 7:57 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Eric Buzzard <ebuzzard@marshallcountywv.org>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-051-02425 - CHARLES JAMISON MSH 410H
47-051-02426 - CHARLES JAMISON MSH 610H
47-051-02427 - CHARLES JAMISON MSH 810H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry
Environmental Resource Specialist 3
West Virginia Department of Environmental Protection
Office of Oil & Gas
601 57th St. SE
Charleston, WV 25304
(304) 926-0499 ext. 41115
(304) 926-0452 fax
Wade.A.Stansberry@wv.gov
<47-085-10414 - Copy.pdf><47-085-10415 - Copy.pdf><47-085-10417 - Copy.pdf>

3 attachments

47-051-02425 - mod.pdf
1007K

47-051-02427 - mod.pdf
1009K

47-051-02426 - mod.pdf
1002K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Modification Horizontal H6A Well Work Permit API: 47-069-00334)

2 messages

Stansberry, Wade A <wade.a.stansberry@wv.gov> Mon, Mar 28, 2022 at 8:01 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, Tiffany Hoffman <thoffman@assessor.state.wv.us>, mpowell@wvassessor.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-069-00334 - SHANNON FIELD OHI 210H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry
Environmental Resource Specialist 3
West Virginia Department of Environmental Protection
Office of Oil & Gas
601 57th St. SE
Charleston, WV 25304
(304) 926-0499 ext. 41115
(304) 926-0452 fax
Wade.A.Stansberry@wv.gov

2 attachments

IR-26 Blank.pdf
169K

47-069-00334 - mod.pdf
4593K

Brittany Woody <Brittany_Woody@swn.com> Mon, Mar 28, 2022 at 8:02 AM
To: "Stansberry, Wade A" <wade.a.stansberry@wv.gov>, Liz Gee <liz_gee@swn.com>, Tiffany Hoffman <thoffman@assessor.state.wv.us>, "mpowell@wvassessor.com" <mpowell@wvassessor.com>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

Thanks!

[Quoted text hidden]

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Expedited Modification Horizontal H6A Well Work Permits API: (47-051-02438)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Mon, Jun 13, 2022 at 11:50 AM
To: Brittany Woody <Brittany_Woody@swn.com>, Liz Gee <liz_gee@swn.com>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>, Strader C Gower <strader.c.gower@wv.gov>, Eric Buzzard <ebuzzard@marshallcountywv.org>

I have attached a copy of the newly issued well permit numbers:

47-051-02438 - DAVID REINBEAU MSH 1H

These will serve as your copy.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

47-051-02438 - mod.pdf
5752K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

FW: [External] Re: Betty Schafer MSH Questions

4 messages

Brittany Woody <Brittany_Woody@swn.com> Wed, Nov 10, 2021 at 8:28 AM
To: "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>

Morning Gayne-

Wade is currently reviewing the Betty Schafer MSH 3H and requested that I change the permit listed in the source of FW- see attached. Please sign and send back to me so this permit can be approved.

Let me know if you have any questions.

From: Stansberry, Wade A <wade.a.stansberry@wv.gov>
Sent: Tuesday, November 09, 2021 7:47 AM
To: Brittany Woody <Brittany_Woody@SWN.COM>; Harris, Bryan O <bryan.o.harris@wv.gov>
Subject: [External] Re: Betty Schafer MSH Questions

That shouldn't be a problem. Please submit an updated copy and I will place it with the permit. We have a new/current inspector for Marshall County too. Bryan Harris is covering for Barry since he has retired.

Reach out to him to sign off on the update.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

On Mon, Nov 8, 2021 at 4:24 PM Brittany Woody <Brittany_Woody@swn.com> wrote:

> After digging into this, it appears the issue is that the 210H was drilled on the first trip to the pad. The 8H and 10H were drilled on a subsequent trip to the pad and has the correct depths to match the permit in question.

Is it possible to change the source listed from the 210H to Betty Schafer MSH 8H API 47-051-02297.

From: Stansberry, Wade A <wade.a.stansberry@wv.gov>
Sent: Friday, November 05, 2021 11:54 AM
To: Brittany Woody <Brittany_Woody@SWN.COM>; Liz Gee <liz_gee@swn.com>
Subject: [External] Betty Schafer MSH Questions

All,

I was reviewing the newly submitted 47-051-02417 Betty Schafer MSH 3H and I also pulled the WR-35 for the 47-051-01777 that was listed as a source for the casing plan, FW, Coal and SW depths.

Could you take a look at it because the information on the WR-35 doesn't match up with the information given on the new application in order to approve the casing plan.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

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EPSON001.PDF
610K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Nov 10, 2021 at 9:26 AM
To: Brittany Woody <Brittany_Woody@swn.com>

I will take a look at it when I get home
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Nov 10, 2021 at 2:33 PM
To: Brittany Woody <Brittany_Woody@swn.com>, "Stansberry, Wade A" <wade.a.stansberry@wv.gov>

Please find the attached signed revised permit page correcting the FW depth.

Regards,

Gayne

On Wed, Nov 10, 2021 at 8:28 AM Brittany Woody <Brittany_Woody@swn.com> wrote:
[Quoted text hidden]

EPSON001.PDF.pdf
622K

Brittany Woody <Brittany_Woody@swn.com> Wed, Nov 10, 2021 at 2:34 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thank you!

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

FW: Betty Schafer MSH 3H remedial cement procedure

1 message

Josh Boyda <Josh_Boyda@swn.com> Wed, Apr 13, 2022 at 6:17 PM
To: "Douglas.c.newlon@wv.gov" <Douglas.c.newlon@wv.gov>, "Gayne.J.Knitowski@wv.gov" <Gayne.J.Knitowski@wv.gov>

Good afternoon Doug,

Per our phone conversation earlier this week, please see the email below as well as the two attachments. These items detail the remedial cement procedure at our (SWN's) Betty Schafer well pad. If you need any further information, please let me know!

Thank you,

Joshua Boyda

Senior Environmental Specialist – West Virginia Division

Southwestern Energy

1300 Fort Pierpont Dr.

Suite 201

Morgantown, WV 26508

Office: 304-884-1713

Cell: 501-428-3636

From: Kevin Porsch <Kevin_Porsch@SWN.COM>
Sent: Tuesday, April 12, 2022 10:17 AM
To: Aaron Balderson <Aaron_Balderson@SWN.COM>; Nick Flesher <Nick_Flesher@SWN.COM>; Ed Blystone <Ed_Blystone@SWN.COM>
Cc: Carla Suszkowski <Carla_Suszkowski@SWN.COM>; Josh Boyda <Josh_Boyda@SWN.COM>; Joseph Andrus <Joseph_Andrus@SWN.COM>; Matt Briggs <Matt_Briggs@SWN.COM>
Subject: Betty Schafer MSH 3H remedial cement procedure

All,

I have attached a revised remedial cement procedure. Doug with the DEP asked that we bring cement up and above the 9-5/8" casing. The new cement volume is approx. 230 bbls. Steps 1-8 have already been completed by the WL crew after frac.

Thanks,
KevinH reme

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2 attachments

BETTY SCHAFER MSH 3 Remedial Cement Procedure.docx
77K

FasDrill-Operating-Instructions-802-90004.pdf
83K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

FW: Brownlee Land Ventures BRK 6H Modification

1 message

Brittany Woody <Brittany_Woody@swn.com> Thu, Dec 9, 2021 at 10:24 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: "Newlon, Douglas C" <Douglas.C.Newlon@wv.gov>

Hey Gayne-

Sorry I sent this to Doug and I believe you are covering Brooke County, correct?

From: Brittany Woody
Sent: Thursday, December 02, 2021 1:27 PM
To: Newlon, Douglas C <Douglas.C.Newlon@wv.gov>
Subject: Brownlee Land Ventures BRK 6H Modification

Hey Doug-

Taylor Brewer is currently handling this permit that was previously signed by Barry, and requested we make some changes (highlighted on the attachment). Also, you will see a text box added on the bottom of pg. 2- that was per Taylor's request as well. Can you sign off and get this back to me at your earliest convenience, please?

Let me know if you have any questions.

Thanks!

Brittany Woody

Senior Regulatory Analyst

SWN Southwestern Energy

1300 Fort Pierpont Dr., Suite 201

Morgantown, WV 26508

Office: 304-884-1613

Cell: 304-997-2598

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Brownlee Land Ventures BRK 6H_Mod.pdf
1187K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

FW: Notice of "Intent to Set and Cement Production Casing" on the O E Berge MSH 1H, the following is the well info:

1 message

SDC41 <SDC41@swn.com> Tue, Nov 2, 2021 at 2:03 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Jeff Hill 501-428-2672

Office: 281-833-2645

Southwestern Energy

From: SDC41
Sent: Sunday, October 31, 2021 5:54 AM
To: Brad_nelson@tcenergy.com; barry.w.stollings@wv.gov; james_amos@tcenergy.com; adam_chain@tcenergy.com; luke_stull@tcenergy.com
Cc: Matt Weems <Matt_Weems@SWN.COM>; Dave Bert <Dave_Bert@SWN.COM>; SDC41 <SDC41@SWN.COM>
Subject: Notice of "Intent to Set and Cement Production Casing" on the O E Berge MSH 1H, the following is the well info:

Notice of "Intent to Set and Cement Production Casing" on the O E Berge MSH 1 H, the following is the well info:

- Well Name: OE Burge 1 H
- API #: 47-0510-23870-00-00
- Proposed depth for setting casing: 21,395’
- Proposed date for cementing production casing: 11/3/2021
- Casing size & type: 5.5” 20# P-110 CDC HTQ+

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Jeff Hill 501-428-2672

Office: 281-833-2645



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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

FW: Reinbeau expansion preconstruction meeting

1 message

Dawn Keller <Dawn_Keller@swn.com> Thu, Apr 7, 2022 at 8:26 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

-----Original Appointment-----
From: John Dubowski <John_Dubowski@swn.com>
Sent: Thursday, April 07, 2022 8:17 AM
To: John Dubowski; Dawn Keller; Scott Hutson; Karl Radcliffe; Zach Kelley; Nyle Burns; Andrew Burns
Subject: Reinbeau expansion preconstruction meeting
When: Monday, April 11, 2022 10:30 AM-11:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Reinbeau pad

All,

A preconstruction meeting will be held Monday, 04/11/2022 at 10:30. Please invite the DEP inspector, RPG, and any other invested party.

Thank you.

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invite.ics
4K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

FW: Roth Farms Construction Precon meeting

1 message

Dawn Keller <Dawn_Keller@swn.com> Thu, Apr 21, 2022 at 10:22 AM
To: Emily Uzar <euzar@rpgres.com>, "David J. Schuster" <dschuster@rpgres.com>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>

-----Original Appointment-----
From: John Dubowski <John_Dubowski@swn.com>
Sent: Thursday, April 21, 2022 10:17 AM
To: John Dubowski; 'Jerame Schwing (jschwing@andersonexcavating.com)'; Johnny Richards; mhinzman78@gmail.com; Dawn Keller; Michael Yates; Eric Short (eric@ascentconsultingengineers.com); Zach Kelley
Subject: Roth Farms Construction Precon meeting
When: Monday, May 02, 2022 10:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Roth Farms pad location - 40 09 03.17N, 80 40 48.43W

All,

This will be for a preconstruction meeting to get alignment from all involved parties. Please feel free to add invitations to parties you feel should attend.

Thanks,

John Dubowski

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invite.ics
4K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Fwd: 35-26673 (A) Notification of Emergency Spill

1 message

Gower, Strader C <strader.c.gower@wv.gov> Tue, May 31, 2022 at 10:32 AM
To: Gayne J Knitowski <Gayne.J.Knitowski@wv.gov>

---------- Forwarded message ---------
From: **Gower, Strader C** <strader.c.gower@wv.gov>
Date: Mon, May 30, 2022 at 6:44 AM
Subject: Re: 35-26673 (A) Notification of Emergency Spill
To: Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov>
CC: Newlon, Douglas C <douglas.c.newlon@wv.gov>

Ok, I'll check it out.

On Sun, May 29, 2022 at 11:14 PM Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> wrote:

> Check this out. I don't think it needs checked out tomorrow other than maybe a phone call to SWN.
>
> ---------- Forwarded message ---------
> From: <dep.online@wv.gov>
> Date: Sun, May 29, 2022 at 2:01 PM
> Subject: 35-26673 (A) Notification of Emergency Spill
> To: <DEP.OOGSpill@wv.gov>
> CC: <david.c.simmons@wv.gov>, <douglas.c.newlon@wv.gov>, <Rusty.T.Joins@wv.gov>, <Tina.C.Larue@wv.gov>, <Nathan.c.meadows@wv.gov>, <Paul.J.Legg@wv.gov>, <Scott.W.Lucas@wv.gov>, <Gregory.A.Parsons@wv.gov>, <Rebecca.J.Wiseman@wv.gov>, <Judy.E.Vallandingham@wv.gov>, <J.D.Douglas@wv.gov>, <Lee.E.Orr@wv.gov>, <Brian.A.Carr@wv.gov>, <Meredith.J.Vance@wv.gov>, <Brandon.S.Lewis@wv.gov>, <David.I.Wellman@wv.gov>, <J.Scott.Rodeheaver@wv.gov>, <Tera.E.Patton@wv.gov>, <Jackie.N.Thornton@wv.gov>
>
> This message was sent by an automatic mailer built with cfmail:
> = = =

nearby which are downhill from the release area, the caller was only able to confirm the potential for contamination. **Exact Location:** 375 Realtree Road, Valley Grove, WV. **Spill - Additional Information:** The specified address is the caller's residence and is a reference point for the spill rather than its actual location, which is either before or past it on the roadside. Additionally, while this could not be confirmed as related to oil and gas production, the caller stated there was a wellpad nearby. **Material Spilled:** Unspecified Black/Brown Sludge **Quantity Spilled:** Unknown **Is Material Hazardous or Toxic:** Unknown **Has spill caused Fishkill:** No **Stream Affected:** Little Wheeling Creek (Unconfirmed)		douglas.c.newlon@wv.gov	

--

J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Fwd: [External] Re: Re: Re: Re: SWN Brownlee Comments

3 messages

Brewer, Charles T <charles.t.brewer@wv.gov> Tue, Feb 1, 2022 at 11:15 AM
To: Gayne J Knitowski <gayne.j.knitowski@wv.gov>, Douglas C Newlon <Douglas.C.Newlon@wv.gov>

Gayne,

I'm ok with this updated casing plan if you can sign and return to me.

---------- Forwarded message ---------
From: **Carla Suszkowski** <Carla_Suszkowski@swn.com>
Date: Mon, Jan 31, 2022 at 3:32 PM
Subject: RE: [External] Re: Re: Re: Re: SWN Brownlee Comments
To: Brewer, Charles T <charles.t.brewer@wv.gov>

Sorry about that – this is why they don't let me fill out the permit application forms. Here you go.

Carla L. Suszkowski, P.E.

Environmental and Regulatory Manager

Direct: 832-796-6372

Cell: 724-561-8129

Email: Carla_Suszkowski@SWN.com

From: Brewer, Charles T <charles.t.brewer@wv.gov>
Sent: Monday, January 31, 2022 2:27 PM
To: Carla Suszkowski <Carla_Suszkowski@SWN.COM>
Subject: [External] Re: Re: Re: Re: SWN Brownlee Comments

Carla,

The coal depth should be added on the first page.

On Mon, Jan 31, 2022 at 3:20 PM Carla Suszkowski <Carla_Suszkowski@swn.com> wrote:

> Updated page 2 for the coal casing. Sorry about that.
>
> Carla L. Suszkowski, P.E.
>
> Environmental and Regulatory Manager

Direct: 832-796-6372

Cell: 724-561-8129

Email: Carla_Suszkowski@SWN.com

From: Brewer, Charles T <charles.t.brewer@wv.gov>
Sent: Monday, January 31, 2022 2:06 PM
To: Carla Suszkowski <Carla_Suszkowski@SWN.COM>
Subject: [External] Re: Re: Re: SWN Brownlee Comments

I'll need the changes reflected on the 3 page ww 6B for the inspector to sign.

On Mon, Jan 31, 2022 at 3:03 PM Carla Suszkowski <Carla_Suszkowski@swn.com> wrote:

> Here you go Taylor. If there are any issues with it, let me know.
>
> Carla L. Suszkowski, P.E.
>
> Environmental and Regulatory Manager
>
> Direct: 832-796-6372
>
> Cell: 724-561-8129
>
> Email: Carla_Suszkowski@SWN.com
>
> ---
>
> **From:** Brewer, Charles T <charles.t.brewer@wv.gov>
> **Sent:** Monday, January 31, 2022 1:44 PM
> **To:** Carla Suszkowski <Carla_Suszkowski@SWN.COM>
> **Subject:** [External] Re: Re: SWN Brownlee Comments
>
> Dont forget to send me the new casing program when you can.
>
> On Mon, Jan 31, 2022 at 2:30 PM Carla Suszkowski <Carla_Suszkowski@swn.com> wrote:
>
> > No problem at all sir!
> >
> > Carla L. Suszkowski, P.E.
> >
> > Environmental and Regulatory Manager
> >
> > Direct: 832-796-6372
> >
> > Cell: 724-561-8129
> >
> > Email: Carla_Suszkowski@SWN.com
> >
> > ---

From: Brewer, Charles T <charles.t.brewer@wv.gov>
Sent: Monday, January 31, 2022 1:29 PM
To: Carla Suszkowski <Carla_Suszkowski@SWN.COM>
Subject: [External] Re: SWN Brownlee Comments

Thanks Carla.

On Mon, Jan 31, 2022 at 2:28 PM Carla Suszkowski <Carla_Suszkowski@swn.com> wrote:

> I think I forwarded them all to you – let me know if you didn't get the ones that you needed.
>
> Carla L. Suszkowski, P.E.
>
> Environmental and Regulatory Manager
>
> Direct: 832-796-6372
>
> Cell: 724-561-8129
>
> Email: Carla_Suszkowski@SWN.com

From: Brewer, Charles T <charles.t.brewer@wv.gov>
Sent: Monday, January 31, 2022 1:03 PM
To: Carla Suszkowski <Carla_Suszkowski@SWN.COM>
Subject: [External] SWN Brownlee Comments

Comments I am having trouble locating:

- City of Weirton Utility Director Comment
- Myers
- Beagle
- Reinard
- Giannamore
- Sirback
- Hauldren
- Felt
- Guzzo

I had a note regarding all of these but can't locate the comments. Any help is greatly appreciated.

--

Taylor Brewer, B.S., M.S.

Assistant Chief - Permitting

WVDEP Office of Oil and Gas

601 57th Street, SE

Charleston, WV 25304

304-926-0499 ext. 41108

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Charleston, WV 25304

304-926-0499 ext. 41108

BrownleeLandVenturesBRK6H.FormWW-6B.01.31.2022.pdf
1233K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Feb 1, 2022 at 12:47 PM
To: "Brewer, Charles T" <charles.t.brewer@wv.gov>

Taylor,

Attached is the signed permit. Have a good day!
[Quoted text hidden]

BrownleeLandVenturesBRK6H.FormWW-6B.01.31.2022.pdf
1315K

Brewer, Charles T <charles.t.brewer@wv.gov> Tue, Feb 1, 2022 at 1:21 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thanks Gayne.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Fwd: [External] Re: Reinbeau Consent Order - Second Discussion

3 messages

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Tue, Mar 22, 2022 at 8:04 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

fyi

---------- Forwarded message ---------
From: **Carla Suszkowski** <Carla_Suszkowski@swn.com>
Date: Tue, Mar 15, 2022 at 2:37 PM
Subject: RE: [External] Re: Reinbeau Consent Order - Second Discussion
To: Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov>

Good afternoon Scott!! I hope you are doing well this week. Just checking back in on this one to see if you have any time to discuss either this week or next – with Marty of course.

Just for a little background on what I'm thinking, here is what I have looked at. Per Marty's request / suggestion, I went back and looked at the required corrective actions and associated dates with those. I have outlined this information below:

1. Gain control of activities occurring on the pad: This was done on the day of the incident 10/22/2021
2. Submit a report that includes the following:
    a. Demonstrates a knowledge and understanding of incident cause: Incident investigation began on 10/23, the day after the incident occurred. The investigation report was completed and dated 11/13/2021 and demonstrates the knowledge of understanding of what caused the incident. As such, I would say we complied with this on the date of the report.
    b. Demonstrates the ability to safety resume operations on the well pad: I would say that the incident investigation report details the steps that were necessary to re-start the pad and to not have the incident happen again, via the corrective actions that are required per the report. Therefore, we complied with this on 11/13/2021 as well.
    c. Explains future plans of SOPs that will safeguard personnel: Again, I would say that the Corrective Actions section of the report details what will be done moving forward; thus, we complied with this on the date of the report as well – 11/13/2021
    d. Confirms that any possible pollutants were confined to the well pad: Our third-party consultant was on site on 10/28/2021 and confirmed that the pad drains were closed, that nothing was flowing from the drains and that there was no visual evidence of any contaminants leaving site and no visual evidence of any impact off site. I would say that we complied with this condition on 10/28/2021.

As such, the date where all compliance was complete was 11/13/2021, the date of the Incident Investigation Report. When I do the day count, from 10/25/2021 (the date of the NOV) to 11/13/2021 I get 19 days.

Happy to discuss your and Marty's thoughts on this when you have time over the next week or so. Thanks Scott!

Carla L. Suszkowski, P.E.

Environmental and Regulatory Manager

Direct: 832-796-6372

Cell: 724-561-8129

Email: Carla_Suszkowski@SWN.com

From: Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov>
Sent: Thursday, March 10, 2022 1:52 PM
To: Carla Suszkowski <Carla_Suszkowski@SWN.COM>
Subject: [External] Re: Reinbeau Consent Order - Second Discussion

I will check with Marty and get back. Thank you.

On Thu, Mar 10, 2022 at 2:29 PM Carla Suszkowski <Carla_Suszkowski@swn.com> wrote:

> Scott,
>
> Thanks for the time this morning – certainly appreciate both you and Marty sitting down for a quick conversation. I think I've identified a few ways that we can reduce he number of days that we were out of compliance on that pad. I've got time Monday afternoon, Tuesday morning and Wednesday morning if you guys have time in any of those slots. I will also put my thoughts in an email as soon as I get a chance so that you can start thinking through what I am proposing.
>
> Just let me know when you guys are available and I will get it on the calendar.
>
> Thanks again!!
>
> Carla L. Suszkowski, P.E.
>
> Environmental and Regulatory Manager
>
> SWN Southwestern Energy
>
> 10000 Energy Drive
>
> Spring, TX 77389-4954
>
> Direct: 832-796-6372
>
> Cell: 724-561-8129
>
> Email: Carla_Suszkowski@SWN.com
>
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--

J. Scott Rodeheaver

WV DEP Office of Oil and Gas

601 57th Street, SE

Charleston, WV 25304

304-926-0499 ext 41107

304-382-4296

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304-926-0499 ext 41107
304-382-4296

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Mar 22, 2022 at 8:08 AM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>

I am good with the reduced days. Her email explains the rationale. I was looking at the the two reports and they dates were later. But I say it's good to go the way you currently have it assessed.
[Quoted text hidden]

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Tue, Mar 22, 2022 at 8:17 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thank you sir!
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Fwd: Herbicide Treatment SW 7380

1 message

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Tue, May 17, 2022 at 5:03 PM
To: "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>

joann@lewisfarmwv.com wrote ..
> Resent to include landowner@tcenergy.com
>
> Lorrie well 7380 is part of our pasture for our cattle.
>
> We do not want any herbicide sprayed anywhere on our property.
>
> If this needs further discussion please let us know.
>
> Joann

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Fwd: Herbicide Treatment SW 7380

6 messages

Joann Lewis <joann.lewisfarm@gmail.com> Tue, May 17, 2022 at 5:13 PM
To: "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>, JAMES.A.MARTIN@wv.gov

Gayne I sent notification that we do not want any herbicides sprayed on our property. What is the stance of the DEP concerning our rights for no herbicides?
Is there someone I can call - Travis Hayes?

TC Energy is notifying us of three locations including the well that is being plugged SW 7398, the well 7417 that still has mats over a 40FT X 150FT area and no resolution to the gas loss issue in the near future.
And SW 7380 which is a part of our pasture.

Joann

---------- Forwarded message ---------
From: <joann@lewisfarmwv.com>
Date: Tue, May 17, 2022 at 5:05 PM
Subject: Fwd: Herbicide Treatment SW 7380
To: Joann Lewis <joann.lewisfarm@gmail.com>

joann@lewisfarmwv.com wrote ..
> joann@lewisfarmwv.com wrote ..
> > Resent to include landowner@tcenergy.com
> >
> > Lorrie well 7380 is part of our pasture for our cattle.
> >
> > We do not want any herbicide sprayed anywhere on our property.
> >
> > If this needs further discussion please let us know.
> >
> > Joann

--
7582 Saltlick Road
Terra Alta WV 26764
3047892232
joann@lewisfarmwv.com

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, May 18, 2022 at 7:34 AM
To: Douglas C Newlon <Douglas.C.Newlon@wv.gov>

See email below. I wouldn't think we have a say if they are using it correctly only in the row/easement. Your thoughts?
[Quoted text hidden]

Newlon, Douglas C <Douglas.C.Newlon@wv.gov> Wed, May 18, 2022 at 7:50 AM

To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I don't know if a regulation we have. Going to get with Marty. The company should work with the landowner in my opinion

[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, May 18, 2022 at 7:58 AM
To: "Newlon, Douglas C" <Douglas.C.Newlon@wv.gov>

I agree they should. This is ongoing with this landowner and TC energy for as long as I have had the area.

[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, May 18, 2022 at 8:08 AM
To: Joann Lewis <joann.lewisfarm@gmail.com>
Cc: JAMES.A.MARTIN@wv.gov

Joann,

I talked with TC Energy and they said it is form letter that gets sent out. Some landowners do not want any application and they will not spray their property. You should be hearing back from Lori regarding your request.

Regards,

Gayne

[Quoted text hidden]

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Wed, May 18, 2022 at 9:56 AM
To: "Newlon, Douglas C" <Douglas.C.Newlon@wv.gov>
Cc: "Martin, James A" <james.a.martin@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Charles T Brewer <charles.t.brewer@wv.gov>, Henry J Harmon <henry.j.harmon@wv.gov>

I talked to Marty and his position is that the landowner has the right to decline herbicides and/or pesticides from being sprayed on their property. Putting out a sign to that effect is highly recommended as well as notifying the company. Once that occurs, the company (operator) needs to mow, cut brush etc. the old fashion way.

If the company sprays anyway, we do not have an enforcement mechanism that I know of, but it would be a civil issue between them and the company.

On Wed, May 18, 2022 at 8:37 AM Newlon, Douglas C <Douglas.C.Newlon@wv.gov> wrote:

> Gayne talked to TC Energy and they send a letter out and if landowner doesn't want spayed they don't spray.
>
> On Wed, May 18, 2022 at 8:04 AM Martin, James A <james.a.martin@wv.gov> wrote:
>
> ---------- Forwarded message ---------
> From: **Joann Lewis** <joann.lewisfarm@gmail.com>
> Date: Tue, May 17, 2022 at 5:13 PM
> Subject: Fwd: Herbicide Treatment SW 7380
> To: Knitowski, Gayne J <Gayne.J.Knitowski@wv.gov>, <JAMES.A.MARTIN@wv.gov>
>
> [Quoted text hidden]
> [Quoted text hidden]

--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Fwd: Message from MFD 2064

1 message

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Mon, Oct 25, 2021 at 10:21 AM
To: "Knitowski, Gayne J" <e026012@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, James A Martin <james.a.martin@wv.gov>

The incident reported in 2018 about a fire on 051-01622 did not have an NOV or Cease Order written to it--nothing in RBDMS. I did not find any reference to the incident in my notebook/phone log either.

Idid find the attached looking at the compliance history for Antero Resources--the rule number is listed on the display of information.

---------- Forwarded message ---------
From: <Copy.Center.2064@wv.gov>
Date: Mon, Oct 25, 2021 at 10:06 AM
Subject: Message from MFD 2064
To: <j.scott.rodeheaver@wv.gov>

--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

SMFD 206421102509490.pdf
145K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Fwd: Notification Site Visit for Terra Alta Storage Field Well 7417 & Pipeline X76W7417 / Lewis property

4 messages

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Thu, Jun 23, 2022 at 11:22 PM
To: GAYNE.J.KNITOWSKI@wv.gov, CHARLES.T.BREWER@wv.gov, JAMES.A.MARTIN@wv.gov
Cc: Ralph@lewisfarmwv.com

Gayne any idea what is going on that this site visit is being scheduled for Tuesday and will you be there?

Anthony Winters <anthony_winters@tcenergy.com> wrote ..
> Good afternoon Mr. and Mrs. Lewis.
> I just wanted to provide notice and make you aware that our Project Team members,
> as well as, contractors would like to plan and schedule a site visit on your property.
> This said site visit is currently set to occur sometime between 9am to 12pm (noon)
> on Tuesday (06-28-2022). This involves internal and external representatives of
> our company conducting field walkthroughs within our pipeline easements-right of
> ways and around our Well 7417.
>
> Please feel free to reach out in the event you have any concerns/questions. Do
> not hesitate in calling my work cell (412-491-0444) if you should want to further
> discuss.
> Thanks.
>
>
> Sincerely,
>
>
> Anthony Winters
> Land Representative
> U. S. Land Services - East
> anthony_winters@tcenergy.com<mailto:anthony_winters@tcenergy.com>
>
> 4115 Cork Bocktown Road
> Clinton, PA
> USA 15026
>
> Tel: 724-223-3944
> Cell: 412-491-0444
> Fax: 724-223-3965
> _____
>
> [cid:image002.png@01D8870B.1C1B2280]
>
> TCEnergy.com<http://www.transcanada.com/>
> _____
>
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>
>
>

>
>
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> receiving this and similar communications from TC Energy please Click here to unsubscribe.
>
>
>
> If you are unable to click the request link, please reply to this email and change
> subject line to "UNSUBSCRIBE".
>
> This electronic message and any attached documents are intended only for the named
> addressee(s). This communication from TC Energy may contain information that is
> privileged, confidential or otherwise protected from disclosure and it must not
> be disclosed, copied, forwarded or distributed without authorization. If you have
> received this message in error, please notify the sender immediately and delete
> the original message.
>
> Thank you
>
>

2 attachments

image001.png
1K



image002.png
4K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Jun 24, 2022 at 8:09 AM
To: joann@lewisfarmwv.com

Joann,

I'm am off this week but have not heard anything about about the site visit. I will make a few calls on Monday and see if I can find anything else. I will be out Tuesday either way.

Regards,

Gayne
[Quoted text hidden]

---

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Fri, Jun 24, 2022 at 8:40 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: joann@lewisfarmwv.com

Thank you and I apologize for interrupting your vacation. Have a great weekend!

Joann

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> wrote ..
[Quoted text hidden]
> > <https://www.google.com/maps/search/m+%0D%0A%3E+%0D%0A%3E+4?entry=gmail&source=g>ents
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Jun 27, 2022 at 9:07 AM
To: joann@lewisfarmwv.com

Joanne,

I talked with the engineer who is over seeing the project on well #7417. She said the meeting tomorrow is not about the process/fix of well 7417. She is not attending the meeting. From what I understand the meeting is about reclamation on your property but that sounded vague to me. I will stop out tomorrow and see what is going on.

Thanks,

Gayne
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Fwd: PHMSA Inspection - Columbia Gas Transmission-Victory Storage

1 message

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Wed, Oct 20, 2021 at 2:08 PM
To: "Knitowski, Gayne J" <e026012@wv.gov>
Cc: "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, david.hippchen@dot.gov

The field portion is next Tuesday and Wednesday. The fields are in Marshall County. Please plan to attend. David Hippchen can provide additional details.

---------- Forwarded message ---------
From: **Hippchen, David (PHMSA)** <david.hippchen@dot.gov>
Date: Thu, Oct 14, 2021 at 3:02 PM
Subject: RE: PHMSA Inspection - Columbia Gas Transmission-Victory Storage
To: Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov>

The sessions on the 19th and 20th will be conducted by a virtual meeting link with Microsoft Teams. The link to the meeting is as follows:

Click here to join the meeting

I have attached the question sets for the subject areas that we will cover.

Thanks.

David A. Hippchen

General Engineer/Inspector, Office of Pipeline Safety-Eastern Region

US Department of Transportation
Pipeline and Hazardous Materials Safety Administration

840 Bear Tavern Road, Suite 300, West Trenton, New Jersey 08628

Mobile: 412.953.7707 ◊ Alternate: 304.552.1053

PHMSA Home | LinkedIn | Twitter | HAZMAT | OPS





From: Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov>
Sent: Thursday, October 14, 2021 1:23 PM
To: Hippchen, David (PHMSA) <david.hippchen@dot.gov>
Cc: James A Martin <james.a.martin@wv.gov>; Newlon, Douglas C <douglas.c.newlon@wv.gov>
Subject: PHMSA Inspection - Columbia Gas Transmission-Victory Storage

CAUTION: This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

I am with the WV DEP Office of Oil and Gas. I have the agenda. The presentations scheduled for October 19th and 20th--are they virtual or in person? If in-person please provide meeting location information. If virtual, log-in information.

Thank you.

--

J. Scott Rodeheaver

WV DEP Office of Oil and Gas

601 57th Street, SE

Charleston, WV 25304

304-926-0499 ext 41107

304-382-4296

--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

21-200151_Columbia_2616_Victory A B UNGS_88028_88027 - Export Questions (2021-9-29).pdf
181K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Fwd: RE: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract No.: 6-43-6 Preston County, West Virginia

1 message

Joann Lewis <joann.lewisfarm@gmail.com> Sat, Jan 15, 2022 at 11:27 AM
To: "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>, TRAVIS.D.HAYS@wv.gov

Columbia will be starting in February and the details are below.

---------- Forwarded message ---------
From: <joann@lewisfarmwv.com>
Date: Sat, Jan 15, 2022 at 10:02 AM
Subject: Fwd: RE: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract No.: 6-43-6 Preston County, West Virginia
To: Joann Lewis <joann.lewisfarm@gmail.com>

Lorrie Steadman <lorrie_steadman@tcenergy.com> wrote ..
> Ralph & Joann:
>
> In response to your concerns regarding the data gathering and troubleshooting to
> be completed on Well 7417…
> • Columbia will continue to use only the historically agreed upon access for
> this project (map attached);
> • Blowdowns will be conducted in a controlled manner to reduce noise levels;
> • I will notify you at least 24 hours prior to any blowdown;
> • An Environmental Inspector is to be assigned to this project and will determine
> if any erosion control devices are required and when they can be removed;
> • Columbia will make every effort to restrict work hours between 8am and 5pm,
> of course excepting unforeseen situations requiring us to continue after hours
> in order to safely complete an activity or reach a stopping point that is conducive
> to securing the well overnight;
> • Below is the summary of our plans, which will likely occur in two phases,
> as outlined below:
>
> PHASE 1 – Investigate and Diagnose
>
> Concise Scope of Work
> 1. Disconnect pipeline from wellhead.
> 2. Prepare access road and well site to accommodate scope of work.
> 3. Obtain wireline logs and install mechanical bridge plug.
> 4. Manipulate and monitor well pressures for diagnostic purposes.
>
> Estimated Start/Duration
> • Work to begin mid-February when 45-day landowner notification period expires.
> • It is estimated Phase 1 will take 2-4 weeks.
>
> PHASE 2 – Mitigate/Repair/Resolve
>
> Concise Scope of Work
> 1. Scope of work TBD, based on results in Phase 1.
>
> Estimated Start/Duration
> • Start date TBD based on scope of work, clearances, permits, material, resources,
> etc.
> • Duration TBD based on scope of work.

> Please let me know if I can be of further assistance.
>
> Thanks,
> Lorrie Steadman
> Land Representative
> U.S. Land Services East
>
> | Columbia Gas Transmission
> Lorrie_Steadman@tcenergy.com
>
> 12001 Industrial Park Street
> Cumberland, MD
> USA 21502
>
> Tel: 301.729.5624
> Fax: 301.729.5639
> Cell: 304.290.7572
>
> -----Original Message-----
> From: Lorrie Steadman
> Sent: Monday, January 10, 2022 8:29 AM
> To: joann@lewisfarmwv.com
> Cc: Ralph@Lewisfarmwv.com
> Subject: RE: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract No.:
> 6-43-6 Preston County, West Virginia
>
> I am working to gather answers to your questions.
>
> Lorrie Steadman
> Land Representative
> U.S. Land Services East
>
> | Columbia Gas Transmission
> Lorrie_Steadman@tcenergy.com
>
> 12001 Industrial Park Street
> Cumberland, MD
> USA 21502
>
> Tel: 301.729.5624
> Fax: 301.729.5639
> Cell: 304.290.7572
>
> -----Original Message-----
> From: joann@lewisfarmwv.com <joann@lewisfarmwv.com>
> Sent: Friday, December 31, 2021 1:56 PM
> To: Karen Franks <karen_franks@tcenergy.com>; Lorrie Steadman <lorrie_steadman@tcenergy.com>;
> US Land <us_land@tcenergy.com>
> Cc: Ralph@Lewisfarmwv.com
> Subject: [EXTERNAL] CPG Data Gathering & Troubleshooting Well - WV Tract No.: 6-43-6
> Preston County, West Virginia
> Importance: High
>
> EXTERNAL EMAIL: PROCEED WITH CAUTION.
> This e-mail has originated from outside of the organization. Do not respond, click
> on links or open attachments unless you recognize the sender or know the content
> is safe. If this email looks suspicious, report it.
>
> ==========
> Hello,
>
> We understand that there are issues with the casing and or annulus on SW7417 that
> need to be investigated and corrected.
>

>
> Ralph Lewis and I (Joann Lewis) have many concerns with the upcoming disturbances
> that will occur as a result of the investigation and repair. We currently have
> a court approved agreement in place with TC Energy (Columbia Gas Transmission),
> to utilize specific egress and ingress points on our property. This agreement has
> been working for all parties to this point.
>
> We *do not* approve of any "new or modified access" to SW7417 in our hay/pasture
> field or appurtenances added. Nor do we approve of TC Energy, their employees or
> contractors to use our personal driveway for access or any other activity. Further
> we do not approve of any TC employees or contracted workers roaming outside the
> agreed work area. We would like to stress to you that we live approximately 100
> feet from SW7417 that needs to be blown down with pressures in excess of 2000 PSI.
> We have pets, livestock, and most importantly young children that must be considered.
> Our pets and grandchildren are frequently in the yard and driveway, and their safety
> against hearing damage and possible accidental injury is paramount. Also due to
> the proximately of the project we would appreciate no work commence prior to 8AM
> and be prolonged beyond 5PM.
>
> Lastly we have concerns that TC Energy, in more than one instance, has left their
> filter socks, fencing, and other environmental control material on our property
> far longer than is required, presumably left to deteriorate and be forgotten. This
> has caused issues with our livestock and the aesthetic of our property. The last
> experience with construction, in regards to TC Energy/ Columbia Gas, TC did not
> correct or compensate for any of these property damages. We were forced to obtain
> legal counsel to address this in 2015 and 2017. There is no reason why this would
> not be expected to happen yet again.
>
> Ralph was ultimately forced to correct the damage to our property himself, on our
> time and at our expense.
>
> I believe we all want the project to be successful without incident on either side
> however mutually agreed boundaries must be set in place first.
>
> Joann and Ralph Lewis
>
> ---
>
>
>
>
>
>
> We respect your right to choose which electronic messages you receive. To stop
> receiving this and similar communications from TC Energy please Click here to unsubscribe.
>
>
>
> If you are unable to click the request link, please reply to this email and change
> subject line to "UNSUBSCRIBE".
>
> This electronic message and any attached documents are intended only for the named
> addressee(s). This communication from TC Energy may contain information that is
> privileged, confidential or otherwise protected from disclosure and it must not
> be disclosed, copied, forwarded or distributed without authorization. If you have
> received this message in error, please notify the sender immediately and delete
> the original message.
>
> Thank you

--
7582 Saltlick Road
Terra Alta WV 26764
3047892232

joann@lewisfarmwv.com

access map.pdf
116K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Fwd: RE: Columbia Well #7417

2 messages

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Sun, Jun 5, 2022 at 11:35 AM
To: Gayne.J.Knitowski@wv.gov, CHARLES.T.BREWER@wv.gov, JAMES.A.MARTIN@wv.gov

Gayne August 30 2021 was the first notification of the well having pressure issues and almost a year later TC Energy has no idea what the issues are and are not any closer to a resolution. Plugging that well would be in everyone's best interest.

Joann

- Ralph Lewis <ralph@lewisfarmwv.com> wrote ..
> Please copy Joann in the future.
>
> What does this entail? Pressure testing the seals?
>
>
>
> And perhaps it would be a good opportunity to lubricate the leaking valve on
> the receiver (leaking since May 2021) and the end cap per usual is leaking
> since March 2021.
>
>
>
>
>
> From: Lorrie Steadman [mailto:lorrie_steadman@tcenergy.com]
> Sent: Monday, August 30, 2021 10:30 AM
> To: Ralph Lewis
> Subject: Columbia Well #7417
>
>
>
> Ralph & Joann:
>
>
>
> I have a well tech that needs to pressure test the seals on well #7417.
> He's scheduled the work for Thursday, Sept. 2, weather permitting. Let me
> know if you have any questions.
>
>
>
> Thanks,
>
>
>
> Lorrie Steadman
>
> Land Representative
>
> U.S. Land Services East
>
>
>
> TC_ENERGY_FULLCOLOUR_RGB_300DPI | Columbia Gas Transmission
>
> Lorrie_Steadman@tcenergy.com
>

> 12001 Industrial Park Street
> Cumberland, MD
> USA 21502
>
> Tel: 301.729.5624
> Fax: 301.729.5639
> Cell: 304.290.7572
>
> _____
>
> We respect your right to choose which electronic messages you receive. To
> stop receiving this and similar communications from TC Energy please Click
> here to unsubscribe.
> <mailto:lorrie_steadman@tcenergy.com?subject=Unsubscribe%20Request%20-%20Col
> umbia%20Well%20#7417&body=Subject of Email:Columbia Well #7417%0D%0A Sender
> of Original Email:lorrie_steadman@tcenergy.com%0D%0ACurrent
> Date:2021-08-30%0D%0ACurrent Time:08:30:31>
>
> If you are unable to click the request link, please reply to this email and
> change subject line to "UNSUBSCRIBE".
>
> This electronic message and any attached documents are intended only for the
> named addressee(s). This communication from TC Energy may contain
> information that is privileged, confidential or otherwise protected from
> disclosure and it must not be disclosed, copied, forwarded or distributed
> without authorization. If you have received this message in error, please
> notify the sender immediately and delete the original message.
>
> Thank you
>



image001.png
5K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Jun 6, 2022 at 8:13 AM
To: joann@lewisfarmwv.com
Cc: CHARLES.T.BREWER@wv.gov, JAMES.A.MARTIN@wv.gov

Joanne,

This week TC energy is suppose to set a bridge plug down hole to try to isolate the zone that is leaking. If the do not get any results from this attempt our office will talk with them to see the best solution moving forward.

Regards,

Gayne

[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Hart FWI closure

3 messages

Dawn Keller <Dawn_Keller@swn.com> Mon, Jul 26, 2021 at 1:32 PM
To: "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>
Cc: "Kees, Kelly L" <Kelly.L.Kees@wv.gov>, Chad Keilman <Chad_Keilman@swn.com>

Hi Gayne,

All E&S has been removed from the Hart FWI closure. Please let me know when you submit the final inspection report to Kelly and we will inform the landowner that the location is turned back over to him. Thanks and have a good day!

Dawn Keller

Senior Environmental Specialist

Southwestern Energy

1300 Fort Pierpont Drive Suite 201

Morgantown, WV 26508

O: 304-884-1683

C: 501-697-7230

From: Knitowski, Gayne J <Gayne.J.Knitowski@wv.gov>
Sent: Monday, July 12, 2021 4:12 PM
To: Dawn Keller <Dawn_Keller@SWN.COM>
Subject: [External] Re: RE: Re: Hart FWI closure

Dawn,

I went by the Hart impoundment today and everything looked good. Once you remove the soil erosion measures let me now and I will get an inspection report over to Kelly and we can put this one to bed.

Gayne Knitowski

Oil and Gas Inspector

WVDEP Office of Oil and Gas

304-546-8171

On Jul 9, 2021, at 2:45 PM, Dawn Keller <Dawn_Keller@swn.com> wrote:

CAUTION: External email. Do not click links or open attachments unless you verify sender.

Thank you!

Dawn Keller

Senior Environmental Specialist

SWN SWAPP Division

Mobile: 501-697-7230

Dawn_keller@swn.com

From: Knitowski, Gayne J <Gayne.J.Knitowski@wv.gov>
Sent: Friday, July 09, 2021 2:35 PM
To: Dawn Keller <Dawn_Keller@SWN.COM>
Subject: [External] Re: Hart FWI closure

Dawn,

I will get out there next week and get back to you.

Gayne Knitowski

Oil and Gas Inspector

WVDEP Office of Oil and Gas

304-546-8171

> On Jul 9, 2021, at 1:01 PM, Dawn Keller <Dawn_Keller@swn.com> wrote:
>
> CAUTION: External email. Do not click links or open attachments unless you verify sender.
>
> Hi Gayne,

Will you please visit to Hart Freshwater Impoundment closure in Preston County, at your earliest convenience, and perform the final inspection? We would like to get this permit released and the location released to the landowner. Let me know what you think. We will wait to remove E&S until we hear from you.

Thanks!

Dawn Keller

Senior Environmental Specialist

SWN SWAPP Division

Mobile: 501-697-7230

Dawn_keller@swn.com

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Jul 28, 2021 at 8:18 AM
To: Dawn Keller <Dawn_Keller@swn.com>

Dawn,

Hope you enjoyed your days off. I sent Kelly an inspection for release of the Hart impoundment. Everything looked good.

Thanks,

Gayne
[Quoted text hidden]

Dawn Keller <Dawn_Keller@swn.com> Wed, Jul 28, 2021 at 8:55 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Great! Thank you!

Dawn Keller

Senior Environmental Specialist

Southwestern Energy

1300 Fort Pierpont Drive Suite 201

Morgantown, WV 26508

O: 304-884-1683

C: 501-697-7230

[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Intermediate Casing and Cement Notifications Brian Teslovich BRK 1 H

1 message

sdc40 <sdc40@swn.com> Wed, Nov 17, 2021 at 6:12 AM
To: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>
Cc: Dave Bert <Dave_Bert@swn.com>, Derek Motley <Derek_Motley@swn.com>, sdc40 <sdc40@swn.com>

- Well Name: Brian Teslovich BRK 1H
- API #: 47-009-00-325-00-00
- Proposed depth for setting intermediate casing: 1,616’
- Proposed date for setting intermediate casing: 11/18/2021
- Casing size & type: 9.625” 36# J-55 LTC

SDC 40

Office: 304-884-1864

WSS Days: Chris Johnson 870-598-7390

WSS Nights: Jeff Hill 501-428-2672

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Intermediate Casing and Cement Notifications, Betty Schafer MSH 405

1 message

sdc40 <sdc40@swn.com> Sat, Jan 8, 2022 at 3:36 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Danny Martinez <Danny_Martinez@swn.com>, sdc40 <sdc40@swn.com>

- Well Name: Betty Schafer MSH 405H
- API #: 47-051-02-383-00-00
- Proposed depth for setting intermediate casing: 1,800’
- Proposed date for setting intermediate casing: 01/10/2022
- Casing size & type: 9.625” 36# J-55 LTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Intermediate Casing Cement Log - Details / OE Burge MSH 3

2 messages

SDC41 <SDC41@swn.com> Wed, Nov 10, 2021 at 11:18 AM
To: Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>, SDC41 <SDC41@swn.com>

9 5/8” Intermediate Casing Cementing Details / OE Burge MSH 3

Load lines with 5 bbls and pressure test T/700 psi low, 3000 psi high, all tests held for 5 mins. Pump 25 bbls of gel spacer @ 8.62 ppg, mix/pump 240 bbls with 1205 sks of "Class A" cement @ 16.0 ppg, 1.12 yld, Shut down, drop top plug and displace w/208 bbls fresh water. Bump plug w/1900 psi (500 psi over FCP) @ 09:45 hrs 11/10/2021. Release pressure, check floats, floats did not hold, pressure back up, re-check floats, floats still didn't hold, pressure back up and shut in cementing head. 72 bbls of good cement to surface.

Regards,

SDC 41

Day WSS: Ben Waldner 620-330-7879

Night WSS: Johnny Hale 918-773-7746

Office: 713-423-6942 / 281-833-2645

swn Southwestern Energy

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OE BURGE 3H INT REPORT.pdf
332K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Nov 10, 2021 at 1:36 PM
To: SDC41 <SDC41@swn.com>

Thanks

[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Intermediate Casing Cement Report, Betty Schafer MSH 405

1 message

sdc40 <sdc40@swn.com> Wed, Jan 12, 2022 at 6:11 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Danny Martinez <Danny_Martinez@swn.com>, Joel Still <Joel_Still@swn.com>

Bumped plug 1-12-22 @ 12:08 am (46 bbls of cement to surface)

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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BETTY SCHAFER 405H INT JOB REPORT.pdf
304K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Intermediate Casing Cement Report

1 message

sdc40 <sdc40@swn.com> Mon, Nov 8, 2021 at 4:31 PM
To: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>

SDC 40

Office: 304-884-1864

WSS Days: Daniel Martinez 479-209-5893

WSS Nights: Ron Rudd 724-840-6381

sdc40@swn.com

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Brian Teslovich 3 intermediate job log.pdf
199K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Lucy C. Hipp 1 P&A Application

1 message

Keri Fieno <keri.fieno@chk.com> Thu, Jul 7, 2022 at 4:12 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Classification: DCL-Internal

Good afternoon,

Attached you will find the P&A application for Chesapeake's Lucy C Hipp well. Let me know if you have any questions.

Please sign and return once you have had a chance to review.

Thank you,

Keri Fieno

HSER, Regulatory Specialist

Chesapeake Energy Corporation

6100 N Western Avenue

Oklahoma City, OK 73118

Office: 405-766-8791

Email: keri.fieno@chk.com

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Plugging Permit Packet. LUCY C HIPP 1 2022-07-07.pdf
1271K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Modification Horizontal H6A Well Work Permit (API: 47-051-01914, 01916, 01917, 02128, 02129, 02130, 02131, 02132)

2 messages

Stansberry, Wade A <wade.a.stansberry@wv.gov> Wed, Dec 22, 2021 at 2:24 PM
To: John <JZavatchan@eqt.com>, Todd <tklaner@eqt.com>, Erin Spine <espine@eqt.com>, "Shrum, Becky" <bshrum@eqt.com>, Olivia Pishioneri <opishioneri@eqt.com>, Eric Buzzard <ebuzzard@marshallcountywv.org>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

I have attached a copy of the newly issued well permit numbers:

47-051-01914 - LONGWORTH M05H
47-051-01916 - LONGWORTH M06H
47-051-01917 - LONGWORTH M07H
47-051-02128- LONGWORTH M08H
47-051-02129 - LONGWORTH M09H
47-051-02130 - LONGWORTH M10H
47-051-02131 - LONGWORTH M11H
47-051-02132 - LONGWORTH M12H

This will serve as your copy.

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

8 attachments

47-051-01914 - mod.pdf
1225K

47-051-02129 - mod.pdf
1254K

47-051-01916 - mod.pdf
1174K

47-051-01917 - mod.pdf
1153K

47-051-02130 - mod.pdf
1513K

47-051-02131 - mod.pdf
2053K

47-051-02128 - mod.pdf
1180K

47-051-02132 - mod.pdf
1342K

Zavatchan, John <JZavatchan@eqt.com> Wed, Dec 22, 2021 at 2:28 PM
To: "Stansberry, Wade A" <wade.a.stansberry@wv.gov>, "Klaner, Todd" <TKlaner@eqt.com>, "Spine, Erin" <ESpine@eqt.com>, "Shrum, Becky" <BShrum@eqt.com>, "Wilson, Olivia" <OPishioneri@eqt.com>, Eric Buzzard <ebuzzard@marshallcountywv.org>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

Got ‘em all! Thanks Wade, and have a great Christmas!

JZ

From: Stansberry, Wade A <wade.a.stansberry@wv.gov>
Sent: Wednesday, December 22, 2021 2:25 PM
To: Zavatchan, John <JZavatchan@eqt.com>; Klaner, Todd <TKlaner@eqt.com>; Spine, Erin <ESpine@eqt.com>; Shrum, Becky <BShrum@eqt.com>; Wilson, Olivia <OPishioneri@eqt.com>; Eric Buzzard <ebuzzard@marshallcountywv.org>; Gayne J. Knitowski <gayne.j.knitowski@wv.gov>
Subject: [EXTERNAL] Modification Horizontal H6A Well Work Permit (API: 47-051-01914, 01916, 01917, 02128, 02129, 02130, 02131, 02132)

.::This email is from an external source. Please use caution when clicking links or opening attachments::.

[Quoted text hidden]

To learn about EQT's environmental, social and governance efforts visit: https://esg.eqt.com

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Modifications- Shannon Fields OHI & Carl Rotter OHI

2 messages

Brittany Woody <Brittany_Woody@swn.com> Mon, Feb 28, 2022 at 12:41 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Hey Gayne-

I attached 2 modifications that need your signature.

Shannon Fields OHI 210H is the horizontal revision to the permit pending at the DEP (vertical).

Carl Rotter OHI 10H is to extend the lateral.

Let me know if you have any questions.

Thanks!

Brittany Woody

Senior Regulatory Analyst

Southwestern Energy

1300 Fort Pierpont Dr., Suite 201

Morgantown, WV 26508

Office: 304-884-1613

Cell: 304-997-2598

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2 attachments

Shannon Fields OHI 210H mod.pdf
5989K

Carl Rotter OHI 10H Mod.pdf
5855K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Mar 1, 2022 at 8:27 AM
To: Brittany Woody <Brittany_Woody@swn.com>

Brittany,

Attached are the signed permit modifications.

Regards,

Gayne
[Quoted text hidden]

---

2 attachments

Carl Rotter OHI 10H Mod.pdf
5939K

Shannon Fields OHI 210H mod.pdf
6074K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Nick Ballato Dewatering Notification

1 message

Dawn Keller <Dawn_Keller@swn.com> Thu, Apr 14, 2022 at 1:34 PM
To: "Kees, Kelly L" <kelly.l.kees@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: Jim Childers <Jim_Childers@swn.com>, Casey Bartkus <Casey_Bartkus@swn.com>, Chad Keilman <Chad_Keilman@swn.com>, Stephen Scott <Stephen_Scott@swn.com>, Emily Uzar <euzar@rpgres.com>

Hi Gayne and Kelly,

SWN plans to dewater the Nick Ballato Freshwater Impoundment in Brooke County according to the approved dewatering plan to maintain freeboard. The earliest anticipated date to begin dewatering is 4/18/2022, weather permitting. I have attached recent water sampling results for your review.

Please let me know if you have any questions or concerns.

Thanks

Dawn Keller

Senior Environmental Specialist

Southwestern Energy

1300 Fort Pierpont Drive Suite 201

Morgantown, WV 26508

O: 304-884-1683

C: 501-697-7230

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Ballato- 2032542_1 ESL 04 14 2022 1207.pdf
1495K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Drill Into the TC Energy Gas Storage Zone" on the O E Berge MSH 3 H

1 message

SDC41 <SDC41@swn.com> Sat, Nov 6, 2021 at 10:16 AM
To: TC energy DMR <TCenergyDMR@swnenergy.onmicrosoft.com>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>

Hello All,

Notice of "Intent to Drill Into the TC Energy Gas Storage Zone" on the O E Berge MSH 3 H, the following is the well info:

- Well Name: OE Burge MSH 3 H
- API #: 47051-02414-0000
- Proposed date for drilling into the TC Energy gas storage zone: 11/08/2021
- Intermediate Casing Size & Type: 9 5/8" 36# J-55 BTC/ 9 5/8 40# j-55 BTC

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Donny Newby 501-269-0361

Office: 281-833-2645

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Drill Into the TC Energy Gas Storage Zone" on the O E Burge MSH 205H

1 message

SDC41 <SDC41@swn.com> Thu, Dec 2, 2021 at 1:20 PM
To: Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Matt Weems <Matt_Weems@swn.com>, SDC41 <SDC41@swn.com>

Notice of "Intent to Drill Into the TC Energy Gas Storage Zone" on the O E Burge MSH 205H, the following is the well info:

- Well Name: OE Burge MSH 205H
- API #: 47051-02413-0000
- Proposed date for drilling into the TC Energy gas storage zone: 12/04/2021
- Intermediate Casing Size & Type: 9 5/8” 36# J-55 BTC

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Donny Newby 501-269-0361

Office: 281-833-2645

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Drill Into the TC Energy Gas Storage Zone" on the O E Burge MSH 5

1 message

SDC41 <SDC41@swn.com> Fri, Nov 19, 2021 at 5:54 AM
To: Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Drill Into the TC Energy Gas Storage Zone" on the O E Burge MSH 5, the following is the well info:

- Well Name: OE Burge MSH 5
- API #: 47051-02388-0000
- Proposed date for drilling into the TC Energy gas storage zone: 11/21/2021
- Intermediate Casing Size & Type: 9 5/8" 36# J-55 BTC

Regards,

SDC 41

Day WSS: Ben Waldner 620-330-7879

Night WSS: Johnny Hale 918-773-7746

Office: 713-423-6942 / 281-833-2645

swn Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Drill Into the TC Energy Gas Storage Zone" on the SWN A WTZ 1

1 message

SDC41 <SDC41@swn.com> Sun, Jan 2, 2022 at 7:53 AM
To: Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, SDC41 <SDC41@swn.com>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>

Hello All,

Notice of "Intent to Drill Into the TC Energy Gas Storage Zone" on the SWN A WTZ 1, the following is the well info:

- Well Name: SWN A WTZ 1
- API #: 47103-03421-0000
- Proposed date for drilling into the TC Energy gas storage zone: 01/05/2022
- Intermediate Casing Size & Type: 9 5/8” 36# - 40# J-55 STC

Regards,

SDC 41

Day WSS: Ben Waldner 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" - Betty Schafer MSH 1H

1 message

sdc40 <sdc40@swn.com> Thu, Feb 10, 2022 at 5:09 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

This email serves to notify you of our “Intent to Cement Intermediate Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Betty Schafer MSH 1H
- API #: 47-051-02-382-00-00
- Proposed depth for setting intermediate casing: +- 1,714’
- Proposed date for setting intermediate casing: 02/11/2022
- Casing size & type: 9.625” 36# J-55 LTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" - Betty Schafer MSH 3H

2 messages

sdc40 <sdc40@swn.com> Mon, Jan 24, 2022 at 11:00 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, sdc40 <sdc40@swn.com>

This email serves to notify you of our “Intent to Cement Intermediate Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Betty Schafer MSH 3H
- API #: 47-051-02-417-00-00
- Proposed depth for setting intermediate casing: +- 1,710’
- Proposed date for setting intermediate casing: 01/26/2022
- Casing size & type: 9.625” 36# J-55 LTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Buddy Manuel 405-323-0255

sdc40@swn.com

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sdc40 <sdc40@swn.com> Thu, Jan 27, 2022 at 7:24 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>

Gayne,

Had a little rig trouble yesterday, so we won't be cementing the Intermediate until this afternoon 1/27/22

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" - Brian Teslovich BRK 5H

1 message

sdc40 <sdc40@swn.com> Sat, Oct 23, 2021 at 8:44 AM
To: "Stollings, Barry W" <barry.w.stollings@wv.gov>, "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Derek Motley <Derek_Motley@swn.com>, Dave Bert <Dave_Bert@swn.com>

This email serves to notify you of our “Intent to Cement Intermediate Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Brian Teslovich BRK 5H
- API #: 47-009-00-317-00-00
- Proposed depth for setting intermediate casing: 1,614’
- Proposed date for setting intermediate casing: 10/28/2021
- Casing size & type: 9.625” 36# J-55 LTC

SDC 40

Office: 304-884-1864

WSS Days: Chris Johnson 870-598-7390

WSS Nights: Jeff Hill 501-428-2672

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" - Carl Rotter OHI 10

1 message

sdc40 <sdc40@swn.com> Thu, Apr 14, 2022 at 3:21 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

This email serves to notify you of our “Intent to Cement Intermediate Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 10
- API #: 47-069-00-328-00-00
- Proposed depth for setting intermediate casing: +/- 2,206’
- Proposed date for setting intermediate casing: 04/16/2022 @ 12:00 hrs.
- Casing size & type: 9.625” 36# J-55 LTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

swn Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" - Carl Rotter OHI 206H

1 message

sdc40 <sdc40@swn.com> Thu, Mar 3, 2022 at 10:10 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

This email serves to notify you of our “Intent to Cement Intermediate Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 206H
- API #: 47-069-00-3229-00-00
- Proposed depth for setting intermediate casing: +- 2,180’
- Proposed date for setting intermediate casing: 03/5/2022
- Casing size & type: 9.625” 36# J-55 LTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" - Carl Rotter OHI 6

2 messages

sdc40 <sdc40@swn.com> Fri, Mar 18, 2022 at 10:35 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

This email serves to notify you of our “Intent to Cement Intermediate Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 6
- API #: 47-069-00-327-00-00
- Proposed depth for setting intermediate casing: +- 2,200’
- Proposed date for setting intermediate casing: 03/20/2022 @ 01:00 hrs.
- Casing size & type: 9.625” 36# J-55 LTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com



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sdc40 <sdc40@swn.com> Sun, Mar 20, 2022 at 6:58 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Gayne,

Once again we are behind the schedule. Looks like we won't be running casing and cementing until early Monday morning.

Thanks, Jack

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" - Carl Rotter OHI 8

1 message

sdc40 <sdc40@swn.com> Thu, Mar 31, 2022 at 6:59 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>

This email serves to notify you of our “Intent to Cement Intermediate Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 8
- API #: 47-069-00-330-00-00
- Proposed depth for setting intermediate casing: +/- 2,200’
- Proposed date for setting intermediate casing: 04/2/2022 @ 01:00 hrs.
- Casing size & type: 9.625” 36# J-55 LTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" - Timmy Minch OHI 10

2 messages

sdc40 <sdc40@swn.com> Tue, Jun 7, 2022 at 2:13 PM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, sdc40 <sdc40@swn.com>, Jack Hamm <Jack_Hamm@swn.com>

This email serves to notify you of our “Intent to Cement Intermediate Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Timmy Minch OHI 10
- API #: 47-069-00-336-00-00
- Proposed depth for setting intermediate casing: +/- 1,900’
- Proposed date for setting intermediate casing: 06/09/2022 @ 18:00 hrs.
- Casing size & type: 9.625” 36# J-55 LTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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sdc40 <sdc40@swn.com> Fri, Jun 10, 2022 at 2:04 PM
To: "Gower, Strader C" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Strader / Gayne,

Just an update on the intermediate casing and cement job. We have been having top drive issues. Just now starting to drill. Hopefully we will be running casing and cementing sometime tomorrow. Let me know if you have any questions.

Thank you, Jack

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Chris Varela 501-428-1691

sdc40@swn.com



[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" - Timmy Minch OHI 210

1 message

sdc40 <sdc40@swn.com> Fri, Jun 24, 2022 at 5:43 AM
To: Strad <MarcellusBilling@stradenergy.com>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Joel Still <Joel_Still@swn.com>

This email serves to notify you of our “Intent to Cement Intermediate Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Timmy Minch OHI 210
- API #: 47-069-00-337-00-00
- Proposed depth for setting intermediate casing: +/- 1,900’
- Proposed date for setting intermediate casing: 06/25/2022 @ 20:00 hrs.
- Casing size & type: 9.625” 36# J-55 LTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" - Timmy Minch OHI 8

1 message

sdc40 <sdc40@swn.com> Tue, May 17, 2022 at 9:29 AM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, sdc40 <sdc40@swn.com>

This email serves to notify you of our “Intent to Cement Intermediate Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Timmy Minch OHI 8
- API #: 47-069-00-335-00-00
- Proposed depth for setting intermediate casing: +/- 1,900’
- Proposed date for setting intermediate casing: 05/19/2022 @ 18:00 hrs.
- Casing size & type: 9.625” 36# J-55 LTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Chris Varela 501-428-1691

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" on the Charles Jamison MSH 406

1 message

SDC41 <SDC41@swn.com> Tue, Jun 7, 2022 at 9:00 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Intermediate Casing" on the Charles Jamison MSH 406, the following is the well info:

- Well Name: Charles Jamison MSH 406
- API #: 47051-02434-0000
- Proposed depth for setting casing: 2,801’
- Proposed date for cementing intermediate casing: 06/09/2022
- Casing size & type: 9.625” 36# - 40# J-55 STC

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Rick Harless 713-725-2389

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" on the Charles Jamison MSH 410

1 message

SDC41 <SDC41@swn.com> Tue, Mar 22, 2022 at 2:47 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

Hello All,

Notice of "Intent to Set and Cement Intermediate Casing" on the Charles Jamison MSH 410, the following is the well info:

- Well Name: Charles Jamison MSH 410
- API #: 47051-02425-0000
- Proposed depth for setting casing: 2,820’
- Proposed date for cementing intermediate casing: 03/25/2022
- Casing size & type: 9.625” 36# - 40# J-55 STC

Regards,

SDC 41

Day WSS: Jeff Hill 501-428-2672

Night WSS: Donny Newby 501-269-0361

Rig Office Cell 724-231-3151

Office: 281-833-2645 / 713-423-6942

SWN Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" on the Charles Jamison MSH 606

1 message

SDC41 <SDC41@swn.com> Fri, Jul 1, 2022 at 6:26 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Intermediate Casing" on the Charles Jamison MSH 606, the following is the well info:

- Well Name: Charles Jamison MSH 606
- API #: 47051-02436-0000
- Proposed depth for setting casing: 2,801’
- Proposed date for cementing intermediate casing: 07/02/2022
- Casing size & type: 9.625” 36# - 40# J-55 STC

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Rick Harless 713-725-2389

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" on the Charles Jamison MSH 610

1 message

SDC41 <SDC41@swn.com> Fri, Apr 15, 2022 at 7:00 AM
To: Brad Nelson <brad_nelson@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Steve Bair <stevebair@acnrinc.com>, "HarisAhmed@acnrinc.com" <HarisAhmed@acnrinc.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

Hello All,

Notice of "Intent to Set and Cement Intermediate Casing" on the Charles Jamison MSH 610, the following is the well info:

- Well Name: Charles Jamison MSH 610
- API #: 47-051-02426-00-00
- Proposed depth for setting casing: 2,790’
- Proposed date/time for cementing intermediate casing: 04/17/2022 @ 12:00
- Casing size & type: 9.625” 36# - 40# J-55 LTC

Regards,

SDC 41

Day WSS: Jeff Hill 501-428-2672

Night WSS: Donny Newby 501-269-0361

Rig Office Cell 724-231-3151

Office: 281-833-2645 / 713-423-6942

SWN Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" on the Charles Jamison MSH 810

1 message

SDC41 <SDC41@swn.com> Thu, May 12, 2022 at 5:36 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Intermediate Casing" on the Charles Jamison MSH 810, the following is the well info:

- Well Name: Charles Jamison MSH 810
- API #: 47051-02427-0000
- Proposed depth for setting casing: 2,801’
- Proposed date for cementing intermediate casing: 05/14/2022
- Casing size & type: 9.625” 36# - 40# J-55 STC

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Intermediate Casing" on the SWN A WTZ 1

1 message

SDC41 <SDC41@swn.com> Tue, Jan 4, 2022 at 1:44 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Intermediate Casing" on the SWN A WTZ 1, the following is the well info:

- Well Name: SWN A WTZ 1
- API #: 47103-03421-0000
- Proposed depth for setting casing: 2,888’
- Proposed date for cementing intermediate casing: 01/06/2022
- Casing size & type: 9.625” 36# - 40# J-55 STC

Regards,

SDC 41

Day WSS: Ben Waldner 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

SWN Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Production Casing" on the Charles Jamison MSH 406

1 message

SDC41 <SDC41@swn.com> Thu, Jun 23, 2022 at 5:58 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Production Casing" on the Charles Jamison MSH 406, the following is the well info:

- Well Name: Charles Jamison MSH 406
- API #: 47051-02434-0000
- Proposed depth for setting casing: 22,806’
- Proposed date for cementing production casing: 06/26/2022

Casing size & type: 5.5” 20# CDC HTQ+

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Rick Harless 713-725-2389

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Production Casing" on the Charles Jamison MSH 410

1 message

SDC41 <SDC41@swn.com> Wed, Apr 6, 2022 at 6:49 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Production Casing" on the Charles Jamison MSH 410, the following is the well info:

- Well Name: Charles Jamison MSH 410
- API #: 47021-02425-0000
- Proposed depth for setting casing: 27,386’
- Proposed date for cementing casing: 04/09/2022

Casing size & type: 5.5” 20# Talon HTQ P-110 + 6” 24# GBCD

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Production Casing" on the OE Burge MSH 205 H

1 message

SDC41 <SDC41@swn.com> Tue, Dec 7, 2021 at 12:39 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Production Casing" on the O E Burge MSH 205 H, the following is the well info:

- Well Name: OE Burge MSH 205 H
- API #: **47051-02413-0000**
- Proposed depth for setting casing: 20,526’
- Proposed date for cementing casing: 12/14/2021
- Casing size & type: 5.5” 20# P-110-HP CDC HTQ+

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Donny Newby 501-269-0361

Office: 281-833-2645

Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Production Casing" on the OE Burge MSH 3

1 message

SDC41 <SDC41@swn.com> Tue, Nov 16, 2021 at 6:00 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>
Cc: Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Production Casing" on the O E Burge MSH 3, the following is the well info:

- Well Name: OE Burge MSH 3
- API #: 47051-02414-0000
- Proposed depth for setting casing: 21,486’
- Proposed date for cementing production casing: 11/18/2021
- Casing size & type: 5.5” 20# P-110 CDC HTQ+

Regards,

SDC 41

Day WSS: Ben Waldner 620-330-7879

Night WSS: Johnny Hale 918-773-7746

Office: 713-423-6942 / 281-833-2645

SWN Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Production Casing" on the OE Burge MSH 5

1 message

SDC41 <SDC41@swn.com> Sat, Nov 27, 2021 at 11:01 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Production Casing" on the O E Burge MSH 5, the following is the well info:

- Well Name: OE Burge MSH 5
- API #: **47051-02388-0000**
- Proposed depth for setting casing: 20,516’
- Proposed date for cementing casing: 12/01/2021
- Casing size & type: 5.5” 20# P-110-HP CDC HTQ+

Regards,

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Donny Newby 501-269-0361

Office: 281-833-2645

SWN Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Production Casing" on the SWN A WTZ 1

4 messages

SDC41 <SDC41@swn.com> Sat, Jan 15, 2022 at 3:13 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Production Casing" on the SWN A WTZ 1, the following is the well info:

- Well Name: SWN A WTZ 1
- API #: 47103-03421-0000
- Proposed depth for setting casing: 17,325’
- Proposed date for cementing casing: 01/17/2022
- Casing size & type: 5.5” 20# CDC HTQ+ P-110

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Sat, Jan 15, 2022 at 6:06 PM
To: Bryan O Harris <bryan.o.harris@wv.gov>, SDC41 <SDC41@swn.com>

Bryan Harris is the Wetzel County inspector. I noticed he is not an the email. I cc him in this email so that you can contact in the future.

Thanks

Gayne
[Quoted text hidden]

SDC41 <SDC41@swn.com> Sun, Jan 16, 2022 at 7:01 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Good morning Gayne,

Do we still need to include you in the notifications?

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Sun, Jan 16, 2022 at 9:10 AM
To: SDC41 <SDC41@swn.com>

On Sun, Jan 16, 2022 at 7:01 AM SDC41 <SDC41@swn.com> wrote:

> Good morning Gayne,
>
> Do we still need to include you in the notifications?
>
> No. Not if your in Wetzel County.
>
> [Quoted text hidden]
> [Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Surface Casing" on the Charles Jamison MSH 406

1 message

SDC41 <SDC41@swn.com> Thu, Jun 2, 2022 at 6:41 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Surface Casing" on the Charles Jamison MSH 406, the following is the well info:

- Well Name: Charles Jamison MSH 406
- API #: 47051-02434-0000
- Proposed depth for setting casing: 390’
- Proposed date for cementing surface casing: 06/03/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Rick Harless 713-725-2389

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Surface Casing" on the Charles Jamison MSH 410

1 message

SDC41 <SDC41@swn.com> Thu, Mar 17, 2022 at 8:45 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Surface Casing" on the Charles Jamison MSH 410, the following is the well info:

- Well Name: Charles Jamison MSH 410
- API #: 47021-02425-0000
- Proposed depth for setting casing: 390’
- Proposed date for cementing casing: 03/19/2022 @ 06:00 hrs
- Casing size & type: 13.375” 54.5# J-55 BTC

Regards,

SDC 41

Day WSS: Ben Waldner 620-330-7879

Night WSS: Donny Newby 501-269-0361

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Surface Casing" on the Charles Jamison MSH 606

1 message

SDC41 <SDC41@swn.com> Sun, Jun 26, 2022 at 3:57 PM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Surface Casing" on the Charles Jamison MSH 606, the following is the well info:

- Well Name: Charles Jamison MSH 606
- API #: 47051-02436-0000
- Proposed depth for setting casing: 390’
- Proposed date for cementing surface casing: 06/28/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Rick Harless 713-725-2389

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Surface Casing" on the Charles Jamison MSH 610

1 message

SDC41 <SDC41@swn.com> Sat, Apr 9, 2022 at 6:36 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>, Steve Bair <stevebair@acnrinc.com>, "BrianHoward@acnrinc.com" <BrianHoward@acnrinc.com>, "HarisAhmed@acnrinc.com" <HarisAhmed@acnrinc.com>

Hello All,

Notice of "Intent to Set and Cement Surface Casing" on the Charles Jamison MSH 610, the following is the well info:

- Well Name: Charles Jamison MSH 610
- API #: 47051-02426-0000
- Proposed depth for setting casing: 390’
- Proposed date for cementing casing: 04/12/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Surface Casing" on the Charles Jamison MSH 810

2 messages

SDC41 <SDC41@swn.com> Thu, May 5, 2022 at 8:03 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Surface Casing" on the Charles Jamison MSH 810, the following is the well info:

- Well Name: Charles Jamison MSH 810
- API #: 47051-02427-0000
- Proposed depth for setting casing: 390’
- Proposed date for cementing surface casing: 05/06/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

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SDC41 <SDC41@swn.com> Fri, May 6, 2022 at 10:22 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

REVISED Cementing date revised from 05/06/2022 to 05/08/2022

Hello All,

Notice of "Intent to Set and Cement Surface Casing" on the Charles Jamison MSH 810, the following is the well info:

- Well Name: Charles Jamison MSH 810
- API #: 47051-02427-0000
- Proposed depth for setting casing: 390’
- Proposed date for cementing surface casing: 05/08/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

Southwestern Energy®

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Surface Casing" on the OE Burge MSH 205

1 message

SDC41 <SDC41@swn.com> Wed, Dec 1, 2021 at 4:10 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>, SDC41 <SDC41@swn.com>

Notice of "Intent to Set and Cement Surface Casing" on the O E Burge MSH 205, the following is the well info:

- Well Name: OE Burge MSH 205
- API #: 47051-02413-0000
- Proposed depth for setting casing: 328’
- Proposed date for cementing casing: 12/2/2021
- Casing size & type: 13.375” 48# H-40 STC

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Donny Newby 501-269-0361

Office: 281-833-2645

swn Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Surface Casing" on the OE Burge MSH 5

1 message

SDC41 <SDC41@swn.com> Wed, Nov 17, 2021 at 6:50 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>

Hello All,

This email is the notice of "Intent to Set and Cement Surface Casing" on the O E Burge MSH 3, the following is the well info:

- Well Name: OE Burge MSH 5
- API #: 47051-02388-0000
- Proposed depth for setting casing: 328’
- Proposed date for cementing surface casing: 11/19/2021
- Casing size & type: 13.75” 54.5# J-55 BTC

Regards,

SDC 41

Day WSS: Ben Waldner 620-330-7879

Night WSS: Johnny Hale 918-773-7746

Office: 713-423-6942 / 281-833-2645

SWN Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Set and Cement Surface Casing" on the SWN A WTZ 1

1 message

SDC41 <SDC41@swn.com> Sun, Jan 2, 2022 at 7:32 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Surface Casing" on the SWN A WTZ 1, the following is the well info:

- Well Name: SWN A WTZ 1
- API #: 47103-03421-0000
- Proposed depth for setting casing: 380’
- Proposed date for cementing casing: 01/03/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

Regards,

SDC 41

Day WSS: Ben Waldner 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud In" on the Charles Jamison MSH 410

2 messages

SDC41 <SDC41@swn.com> Tue, Mar 15, 2022 at 8:10 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, "Harris, Bryan O" <Bryan.O.Harris@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>, Barry Stollings <barry.w.stollings@wv.gov>, Steve Bair <stevebair@acnrinc.com>, "BrianHoward@acnrinc.com" <BrianHoward@acnrinc.com>, "HarisAhmed@acnrinc.com" <HarisAhmed@acnrinc.com>

Hello All,

Notice of "Intent to Spud In" on the Charles Jamison MSH 410, the following is the well info:

- Well Name: Charles Jamison MSH 410
- API #: 47051-02425-0000
- Proposed date for “Spud In” 03/18/2022 @ 06:00 Hrs

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

Southwestern Energy

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SDC41 <SDC41@swn.com> Sun, Mar 20, 2022 at 5:50 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "BrianHoward@acnrinc.com" <BrianHoward@acnrinc.com>, Steve Bair <stevebair@acnrinc.com>, "HarisAhmed@acnrinc.com" <HarisAhmed@acnrinc.com>

As an update to the spud notice for the Charles Jamison MSH 410, we have been running behind schedule, but plan to spud this evening and will therefore be cementing surface casing in the morning. If you have any questions, please let us know.

Thanks

Regards,

SDC 41

Day WSS: Jeff Hill 501-428-2672

Night WSS: Donny Newby 501-269-0361

Rig Office Cell 724-231-3151

Office: 281-833-2645 / 713-423-6942



[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud In" on the Charles Jamison MSH 606

1 message

SDC41 <SDC41@swn.com> Fri, Jun 24, 2022 at 6:07 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Spud In" on the Charles Jamison MSH 406, the following is the well info:

- Well Name: Charles Jamison MSH 606
- API #: 47051-02436-0000
- Proposed date for “Spud In” 06/28/2022

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Rick Harless 713-725-2389

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud In" on the Charles Jamison MSH 610

1 message

SDC41 <SDC41@swn.com> Sat, Apr 9, 2022 at 6:34 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, "Harris, Bryan O" <Bryan.O.Harris@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Steve Bair <stevebair@acnrinc.com>, "BrianHoward@acnrinc.com" <BrianHoward@acnrinc.com>, "HarisAhmed@acnrinc.com" <HarisAhmed@acnrinc.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Spud In" on the Charles Jamison MSH 610, the following is the well info:

- Well Name: Charles Jamison MSH 610
- API #: 47051-02426-0000
- Proposed date for “Spud In” 04/11/2022 @ 22:00 Hrs

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud In" on the O E Burge MSH 205H

1 message

SDC41 <SDC41@swn.com> Mon, Nov 29, 2021 at 9:09 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Spud In" on the O E Berge MSH 205H, the following is the well info:

- Well Name: OE Burge MSH 205H
- API #: 47051024130000
- Proposed date for “Spud In”: 12/2/2021 @ 06:00 Hrs

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Donny Newby 501-269-0361

Office: 281-833-2645

Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud In" on the O E Burge MSH 5

1 message

SDC41 <SDC41@swn.com> Wed, Nov 17, 2021 at 5:52 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

This email is the notice of "Intent to Spud In" on the O E Burge MSH 5, the following is the well info:

- Well Name: OE Burge MSH 5
- County: Marshall
- Permit #: 47051-02388-0000
- Proposed Spud Date: 11/19/2021

Regards,

SDC 41

Day WSS: Ben Waldner 620-330-7879

Night WSS: Johnny Hale 918-773-7746

Office: 713-423-6942 / 281-833-2645

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud In" on the SWN A WTZ 1

1 message

SDC41 <SDC41@swn.com> Fri, Dec 31, 2021 at 6:47 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Hello All, Happy New Year's Eve

Notice of "Intent to Spud In" on the SWN A WTZ 1, the following is the well info:

- Well Name: SWN A WTZ 1
- API #: 47103-03421-0000
- Proposed date for "Spud In": 01/02/2022 @ 19:00 Hrs

Regards,

SDC 41

Day WSS: Ben Waldner 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Office: 713-423-6942 / 281-833-2645



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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud In" on the SWN A WTZ 201

1 message

SDC41 <SDC41@swn.com> Sat, Jan 15, 2022 at 3:18 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Spud In" on the SWN A WTZ 201, the following is the well info:

- Well Name: SWN A WTZ 201
- API #: 47103-03452-0000
- Proposed date for “Spud In” 01/18/2022 @ 20:00 Hrs

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud, Set and Cement Surface Casing" - Betty Schafer MSH 1H

1 message

sdc40 <sdc40@swn.com> Tue, Feb 8, 2022 at 5:15 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

This email serves to notify you of our “Intent to Spud, Set and Cement Surface Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Betty Schafer MSH 1H
- API #: 47-051-02-382-00-00
- Proposed “Spud” Date and Time: 02/9/2022 @ 6:00 hrs.
- Proposed depth for setting surface casing: +/- 375’
- Proposed date for setting surface casing: 02/9/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud, Set and Cement Surface Casing" - Betty Schafer MSH 3H

3 messages

sdc40 <sdc40@swn.com> Thu, Jan 20, 2022 at 10:33 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, sdc40 <sdc40@swn.com>

This email serves to notify you of our “Intent to Spud, Set and Cement Surface Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Betty Schafer MSH 3H
- API #: 47-051-02-417-00-00
- Proposed “Spud” Date and Time: 01/22/2022 @ 18:00 hrs.
- Proposed depth for setting surface casing: +/- 375’
- Proposed date for setting surface casing: 01/23/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Buddy Manuel 405-323-0255

sdc40@swn.com



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sdc40 <sdc40@swn.com> Sun, Jan 23, 2022 at 7:12 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Gayne,

Update on the spud and cement notice for the Betty Shafer 3H, we are 24 hours behind the original plan. Should Spud sometime late tonight and set casing tomorrow

Thank you, Jack

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Sun, Jan 23, 2022 at 3:51 PM
To: sdc40 <sdc40@swn.com>

Sounds good. Thanks for the update
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud, Set and Cement Surface Casing" - Betty Schafer MSH 405H

1 message

sdc40 <sdc40@swn.com> Mon, Jan 3, 2022 at 4:55 PM
To: "Stollings, Barry W" <barry.w.stollings@wv.gov>, "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

This email serves to notify you of our “Intent to Spud, Set and Cement Surface Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Betty Schafer MSH 405H
- API #: 47-051-02-383-00-00
- Proposed “Spud” Date and Time: 01/05/2022 @ 24:00 hrs.
- Proposed depth for setting surface casing: +/- 420’
- Proposed date for setting surface casing: 01/06/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

SDC 40

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

swn Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud, Set and Cement Surface Casing" - Brian Teslovich BRK 5H

1 message

sdc40 <sdc40@swn.com> Sat, Oct 23, 2021 at 8:43 AM
To: "Stollings, Barry W" <barry.w.stollings@wv.gov>, "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>
Cc: Derek Motley <Derek_Motley@swn.com>, sdc40 <sdc40@swn.com>, Dave Bert <Dave_Bert@swn.com>

This email serves to notify you of our “Intent to Spud, Set and Cement Surface Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Brian Telsovich BRK 5H
- API #: 47-009-00-317-00-00
- Proposed “Spud” Date and Time: 10/26/2021 @ 18:00 hrs.
- Proposed depth for setting surface casing: +/- 320’
- Proposed date for setting surface casing: 10/27/2021
- Casing size & type: 13.375” 54.5# J-55 BTC

SDC 40

Office: 304-884-1864

WSS Days: Chris Johnson 870-598-7390

WSS Nights: Jeff Hill 501-428-2672

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud, Set and Cement Surface Casing" - Carl Rotter OHI 10H

1 message

sdc40 <sdc40@swn.com> Mon, Apr 11, 2022 at 3:11 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Jack Hamm <Jack_Hamm@swn.com>, sdc40 <sdc40@swn.com>

This email serves to notify you of our “Intent to Spud, Set and Cement Surface Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 10H
- API #: 47-069-00-328-00-00
- Proposed “Spud” Date and Time: 04/14/2022 @ 01:00 hrs.
- Proposed depth for setting surface casing: +/- 760’
- Proposed date for setting surface casing: 04/14/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

swn Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud, Set and Cement Surface Casing" - Carl Rotter OHI 206H

1 message

sdc40 <sdc40@swn.com> Sat, Feb 26, 2022 at 6:18 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

This email serves to notify you of our “Intent to Spud, Set and Cement Surface Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 206H
- API #: 47-069-00-329-00-00
- Proposed “Spud” Date and Time: 03/01/2022 @ 6:00 hrs.
- Proposed depth for setting surface casing: +/- 760’
- Proposed date for setting surface casing: 03/01/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud, Set and Cement Surface Casing" - Carl Rotter OHI 210H

2 messages

sdc40 <sdc40@swn.com> Sun, Apr 24, 2022 at 12:52 PM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, "wadegray77@yahoo.com" <wadegray77@yahoo.com>

This email serves to notify you of our “Intent to Spud, Set and Cement Surface Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 210H
- API #: 47-069-00-331-00-00
- Proposed “Spud” Date and Time: 04/27/2022 @ 18:00 hrs.
- Proposed depth for setting surface casing: +/- 760’
- Proposed date for setting surface casing: 04/28/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

swn Southwestern Energy

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sdc40 <sdc40@swn.com> Tue, Apr 26, 2022 at 9:45 AM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Cc: sdc40 <sdc40@swn.com>

Strader/Gayne,

Looks like we are about 12 hours ahead of the below schedule. We could be ready Spud earlier tomorrow and cementing late tomorrow night.

Thanks, Jack

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud, Set and Cement Surface Casing" - Carl Rotter OHI 6

2 messages

sdc40 <sdc40@swn.com> Tue, Mar 15, 2022 at 4:39 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

This email serves to notify you of our “Intent to Spud, Set and Cement Surface Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 6
- API #: 47-069-00-327-00-00
- Proposed “Spud” Date and Time: 03/17/2022 @ 12:00 hrs.
- Proposed depth for setting surface casing: +/- 760’
- Proposed date for setting surface casing: 03/17/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

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sdc40 <sdc40@swn.com> Thu, Mar 17, 2022 at 2:32 PM

To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Gayne,

Just giving you a heads up, we are about 12 to 18 hours behind the Spud notice I sent you for the Carl Rotter OHI 6. We should be spudding before Midnight and cementing sometime tomorrow. Let me know if you have any questions.

Jack

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud, Set and Cement Surface Casing" - Carl Rotter OHI 8

1 message

sdc40 <sdc40@swn.com> Sun, Mar 27, 2022 at 8:25 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

This email serves to notify you of our “Intent to Spud, Set and Cement Surface Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 8
- API #: 47-069-00-330-00-00
- Proposed “Spud” Date and Time: 03/30/2022 @ 01:00 hrs.
- Proposed depth for setting surface casing: +/- 760’
- Proposed date for setting surface casing: 03/30/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

swn Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud, Set and Cement Surface Casing" - Timmy Minch OHI 10H

1 message

sdc40 <sdc40@swn.com> Tue, May 31, 2022 at 5:32 PM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, sdc40 <sdc40@swn.com>

This email serves to notify you of our “Intent to Spud, Set and Cement Surface Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Timmy Minch OHI 10H
- API #: 47-069-00-336-00-00
- Proposed “Spud” Date and Time: 06/02/2022 @ 23:00 hrs.
- Proposed depth for setting surface casing: +/- 530’
- Proposed date for setting surface casing: 06/03/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud, Set and Cement Surface Casing" - Timmy Minch OHI 210H

1 message

sdc40 <sdc40@swn.com> Sat, Jun 18, 2022 at 11:23 AM
To: "Gower, Strader C" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

This email serves to notify you of our “Intent to Spud, Set and Cement Surface Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Timmy Minch OHI 210H
- API #: 47-069-00-337-00-00
- Proposed “Spud” Date and Time: 06/21/2022 @ 12:00 hrs.
- Proposed depth for setting surface casing: +/- 530’
- Proposed date for setting surface casing: 06/21/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Chris Varela 501-428-1691

sdc40@swn.com

swn Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice of "Intent to Spud, Set and Cement Surface Casing" - Timmy Minch OHI 8H

3 messages

sdc40 <sdc40@swn.com> Thu, May 12, 2022 at 3:07 PM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

This email serves to notify you of our “Intent to Spud, Set and Cement Surface Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Timmy Minch OHI 8H
- API #: 47-069-00-335-00-00
- Proposed “Spud” Date and Time: 05/15/2022 @ 01:00 hrs.
- Proposed depth for setting surface casing: +/- 530’
- Proposed date for setting surface casing: 05/15/2022
- Casing size & type: 13.375” 54.5# J-55 BTC

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Chris Varela 501-428-1691

sdc40@swn.com

swn Southwestern Energy

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sdc40 <sdc40@swn.com> Sun, May 15, 2022 at 10:45 AM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Strader / Gayne,

Just an update we are about 24 hours behind the below schedule, so hopefully we will be spudding the Timmy Minch OHI 8H sometime late tonight and cementing tomorrow, If you have any questions please let me know.

Thank you, Jack

[Quoted text hidden]
[Quoted text hidden]

---

sdc40 <sdc40@swn.com> Tue, May 17, 2022 at 9:32 AM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Strader / Gayne,

Just an update we are just now starting to drill surface, had trouble getting moved, so hopefully we will cementing sometime late tonight. I just sent the 9 5/8" notice also. Sorry for my poor planning skills. If you have any questions please let me know.

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice to set and cement 5 1/2" Production casing-Brian Teslovich BRK 1H

1 message

sdc40 <sdc40@swn.com> Thu, Nov 25, 2021 at 12:21 PM
To: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>
Cc: Derek Motley <Derek_Motley@swn.com>, Dave Bert <Dave_Bert@swn.com>, sdc40 <sdc40@swn.com>

This email serves to notify you of our “Intent to set and cement 5-1/2” production casing” in the well detailed below.

Please let us know if you have any questions.

- Well Name: Brian Teslovich BRK 1H
- API #: 47-009-00325-00-00
- Proposed depth for setting production casing: 22,164’
- Proposed date for setting production casing: 11/26/2021
- Casing size & type: 5 ½” 20 ppf P-110 CDC HTQ+ and 6” 24 ppf GBCD
- Estimated date for cementing Production casing: 11/28/2021

SDC 40

Office: 304-884-1864

WSS Days: Daniel Martinez 479-209-5893

WSS Nights: Ron Rudd 724-840-6381

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice to set and cement 5 1/2" Production casing-Brian Teslovich BRK 205H

1 message

sdc40 <sdc40@swn.com> Sat, Oct 23, 2021 at 8:37 AM
To: "Stollings, Barry W" <barry.w.stollings@wv.gov>
Cc: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>

This email serves to notify you of our “Intent to set and cement 5-1/2” production casing” in the well detailed below.

Please let us know if you have any questions.

- Well Name: Brian Teslovich BRK 205H
- API #: 47-009-00312-00-00
- Proposed depth for setting production casing: 19,586’
- Proposed date for setting production casing: 10/25/2021
- Casing size & type: 5 ½” 20 ppf P-110 CDC HTQ+
- Estimated date for cementing Production casing: 10/25/2021

SDC 40

Office: 304-884-1864

WSS Days: Chris Johnson 870-598-7390

WSS Nights: Jeff Hill 501-428-2672

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Notice to set and cement 5 1/2" Production casing-Brian Teslovich BRK 3H

1 message

sdc40 <sdc40@swn.com> Fri, Nov 12, 2021 at 10:05 AM
To: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>
Cc: Derek Motley <Derek_Motley@swn.com>, Dave Bert <Dave_Bert@swn.com>, sdc40 <sdc40@swn.com>

This email serves to notify you of our “Intent to set and cement 5-1/2” production casing” in the well detailed below.

Please let us know if you have any questions.

- Well Name: Brian Teslovich BRK 3H
- API #: 47-009-00311-00-00
- Proposed depth for setting production casing: 18,933’
- Proposed date for setting production casing: 11/15/2021
- Casing size & type: 5 ½” 20 ppf P-110 CDC HTQ+ and GBCD
- Estimated date for cementing Production casing: 11/15/2021

SDC 40

Office: 304-884-1864

WSS Days: Chris Johnson 870-598-7390

WSS Nights: Jeff Hill 501-428-2672

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Nov #11796

3 messages

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Apr 6, 2022 at 11:24 AM
To: J Scott Rodeheaver <J.Scott.Rodeheaver@wv.gov>

Scott,

Give it the once over and let me know if think anything needs to be changed or good to go

69-00334.pdf
168K

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Wed, Apr 6, 2022 at 12:35 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

The only thing I see is that you could change inspection to inspector in the "The above well is being posted..." paragraph
[Quoted text hidden]

--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Apr 6, 2022 at 1:31 PM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>

Scott,

Attached is the revised NOV. If you can file and throw a hard copy in the mail. I will also email a copy to Brittany. Thanks for your help.

Gayne
[Quoted text hidden]

69-00334.pdf
168K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

NOV #11796

2 messages

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Apr 6, 2022 at 3:11 PM
To: Brittany Woody <Brittany_Woody@swn.com>

Brittany,

Attached is a NOV for not getting notified about the start of construction at the Shannon Fields pad. Hard copy to follow US Mail. Please notify all departments the 24 hour notice prior to any well work. I was not noticed about frack starting on the Betty Schaffer pad and wrote a warning and stated if it happened again a violation would be issued. If you have any questions let me know.

Thanks,

Gayne.

69-00334.pdf
168K

Brittany Woody <Brittany_Woody@swn.com> Wed, Apr 6, 2022 at 3:15 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thanks Gayne!

[Quoted text hidden]

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

NOV Response for Shannon Fields 11796

2 messages

Chad Keilman <Chad_Keilman@swn.com> Fri, Apr 8, 2022 at 1:07 PM
To: "Gayne Knitowski (gayne.j.knitowski@wv.gov)" <gayne.j.knitowski@wv.gov>

Mr. Knitowski,

Attached is the response letter for the Shannon Fields NOV received April 6, 2022. Please reach out if you have any questions or concerns. Thank you.

Chad Keilman

Environmental Supervisor

Southwestern Energy

1300 Fort Pierpont Drive Suite 201

Morgantown, WV 26508

O: 304-884-1648

C: 501-428-3114

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Shannon Fields NOV Response Letter 11796.pdf
353K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Apr 8, 2022 at 4:22 PM
To: Chad Keilman <Chad_Keilman@swn.com>, Brittany Woody <Brittany_Woody@swn.com>

Chad,

Attached is the Abatement for NOV #11796. The letter was satisfactory to abate the violation.

Regards,

Gayne
[Quoted text hidden]

Notice of Abatement-11796.pdf
74K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

NOV.

5 messages

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Jan 5, 2022 at 9:03 AM
To: J Scott Rodeheaver <J.Scott.Rodeheaver@wv.gov>
Cc: Douglas C Newlon <Douglas.C.Newlon@wv.gov>

Scott,

Attached is a NOV for a spill that SWN had that got into a stream. Let me know what the Violation number is and I will email a copy to Josh Boyda SWN environmental guy. If you have any questions let me know.

Thanks,

Gayne

09-00186.pdf
172K

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Wed, Jan 5, 2022 at 10:02 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Out in field today, get it this evening or tomorrow.
[Quoted text hidden]
--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Fri, Jan 7, 2022 at 1:38 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

11770 is the number. I created an inspection to create the NOV.

On Wed, Jan 5, 2022 at 9:03 AM Knitowski, Gayne J <gayne.j.knitowski@wv.gov> wrote:
[Quoted text hidden]

[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Jan 7, 2022 at 1:44 PM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>

Ok. Thanks I typed on up I will enter it in today. Just got internet back
[Quoted text hidden]

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Fri, Jan 7, 2022 at 1:45 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

feel free to change what I created. I think I called it a complaint and administrative request and dated it for the 5th.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

O E Burge MSH 3 H 9.625" Casing and Cement Notice

1 message

SDC41 <SDC41@swn.com> Sun, Nov 7, 2021 at 8:38 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, TC energy DMR <TCenergyDMR@swnenergy.onmicrosoft.com>
Cc: Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>, SDC41 <SDC41@swn.com>

This email is the notice of "Intent to Set and Cement Intermediate Casing" on the O E Berge 3 H, the following is the well info:

- Well Name: OE Burge 3 H
- API #: 47-0510-2414-00-00
- Proposed depth for setting casing: 2740’
- Proposed date for setting casing: 11/09/2021
- Casing size & type: 9.625” 36# J-55 STC/9.625” 40# J-55 STC

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Donny Newby 501-269-0361

Office: 281-833-2645

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

O E Burge MSH 5H Production Cement Log

1 message

SDC41 <SDC41@swn.com> Wed, Dec 1, 2021 at 1:47 PM
To: Matt Weems <Matt_Weems@swn.com>, TC energy DMR <TCenergyDMR@swnenergy.onmicrosoft.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>
Cc: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, SDC41 <SDC41@swn.com>

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Donny Newby 501-269-0361

Office: 281-833-2645

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OE Burge 5H production job log.pdf
758K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

OE Burge MSH 1 5 1/2" production casing cement report

1 message

SDC41 <SDC41@swn.com> Fri, Nov 5, 2021 at 10:29 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Matt Weems <Matt_Weems@swn.com>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Donny Newby 501-269-0361

Office: 281-833-2645

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OE Burge MSH 1H Production.pdf
338K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

OE Burge MSH 205 H 13.375 surface cement job log

1 message

SDC41 <SDC41@swn.com> Fri, Dec 3, 2021 at 6:05 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, TC energy DMR <TCenergyDMR@swnenergy.onmicrosoft.com>
Cc: Matt Weems <Matt_Weems@swn.com>

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Donny Newby 501-269-0361

Office: 281-833-2645

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OE Burge 205H surface job log.pdf
421K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

OE Burge MSH 3 / 5.5" Production Casing Cementing Plot - Details

1 message

SDC41 <SDC41@swn.com> Fri, Nov 19, 2021 at 8:29 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Well : OE Burge MSH 3

5.5" Production Casing Cementing Details :

Tie in SLB. Fill cement lines and pressure test T/1000 psi low 8000 psi high, all tests held for 5 min's. Pump 160 bbls MPE @ 14.0 ppg 0.900 lb/bbl B389 + 1.0 gal/bbl B553 + 0.1 gal/bbl D047 + 314.658 lb/bbl D031 , Drop bottom plug. Mix and pump tail cement 3712 sks 855 bbls Class "A" 100 BWOB D901 cement slurry @ 15.0 ppg 1.29 yld 5.99 gal/sk 0.40% BWOB D255 + 0.02 BWOB D047 + 0.04% BWOB D208 + 0.62% BWOB D800. Drop top plug, Displace with 475 bbls fresh water (20 bbls sugar water to start 50 lbs/per 10 bbls) w/0.02 gal/bbl L064 + 0.08 gal/bbl M300 + 5 gal/bbl TP110. Bumped plug w/3570 psi (500 psi over) @ 20:05 hrs 11/18/2021, Held pressure for 5 mins, released pressure to check floats, floats held. Bled back 6.5 bbls to truck. Returned 75 bbls mud flush spacer to surface. Estimated TOC @ 1,774'. Full returns and rotation throughout the whole job.

Regards,

SDC 41

Day WSS: Ben Waldner 620-330-7879

Night WSS: Johnny Hale 918-773-7746

Office: 713-423-6942 / 281-833-2645

Southwestern Energy

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Treatment Report O E Burge MSH 3H Production.pdf
370K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Pad Prep Date - SWN FRAC NOTIFICATION - SWN A WTZ PAD

1 message

Andrea Bond <Andrea_Bond@swn.com> Tue, Mar 22, 2022 at 8:52 AM
To: Kenneth L Greynolds <kenneth.l.greynolds@wv.gov>
Cc: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, WVD - WSS <WVD-WSS@swn.com>, Liz Gee <liz_gee@swn.com>, Denise Grantham <Denise_Grantham@swn.com>, Carla Suszkowski <Carla_Suszkowski@swn.com>, Aaron Balderson <Aaron_Balderson@swn.com>, Kevin Porsch <Kevin_Porsch@swn.com>, Nick Flesher <Nick_Flesher@swn.com>, Oana Ivanescu <Oana_Ivanescu@swn.com>, "dep.water.use@wv.gov" <dep.water.use@wv.gov>

Good morning,

I understand that you would also like the pad prep start date included.

The Pad prep start date the SWN A WTZ Pad (4 wells listed in below email) is 3.28.2022.

Please advise if you need any further information.

Andrea

Andrea Bond

Staff Drilling and Completions Analyst

Northwest Appalachia Team - NEAPP

Southwestern Energy

10000 Energy Drive

Spring, TX 77389

Direct: 832 (SWN) 796.7428

Cell: 832.302.6921

Andrea_Bond@SWN.com

www.swn.com

From: Andrea Bond <Andrea_Bond@SWN.COM>
Sent: Monday, March 21, 2022 4:12 PM
To: Kenneth L Greynolds <kenneth.l.greynolds@wv.gov>
Cc: Knitowski, Gayne J <gayne.j.knitowski@wv.gov>; WVD - WSS <WVD-WSS@swn.com>; Liz Gee <liz_gee@swn.com>; Denise Grantham <Denise_Grantham@SWN.COM>; Carla Suszkowski <Carla_Suszkowski@SWN.COM>; Aaron Balderson <Aaron_Balderson@SWN.COM>; Kevin Porsch <Kevin_Porsch@SWN.COM>; Nick Flesher <Nick_Flesher@SWN.COM>; Oana Ivanescu <Oana_Ivanescu@SWN.COM>; dep.water.use@wv.gov
Subject: SWN FRAC NOTIFICATION - SWN A WTZ PAD
Importance: High

SWN Production LLC submits this notification to the DEP regarding our plan to stimulate the following wells on the Estimated Frac Start Date of 4/18/2022.

- **SWN A WTZ 1H**
- **SWN A WTZ 201H**
- **SWN A WTZ 401H**
- **SWN A WTZ 601H**

Thank you,

Andrea

Andrea Bond

Staff Drilling and Completions Analyst

Northwest Appalachia Team - NEAPP

10000 Energy Drive

Spring, TX 77389

Direct: 832 (SWN) 796.7428

Cell: 832.302.6921

Andrea_Bond@SWN.com

www.swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Permit Cancellation

2 messages

Thornton, Jackie N <jackie.n.thornton@wv.gov> Thu, Jan 13, 2022 at 11:24 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>

Gayne,
WHen you have time I need you to visit well 47-051-02210 and see if the permit can be canceled. They never started well work but they did build the location. THey were working with Barry about getting reclamation done but he didn't cancel the permit so I'm not sure that its all done. Thank you.

--
Jackie Thornton
Environmental Resource Analyst
WVDEP-Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
jackie.n.thornton@wv.gov
304-206-6015

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Jan 13, 2022 at 3:04 PM
To: "Thornton, Jackie N" <jackie.n.thornton@wv.gov>

Jackie,

I will get out there sometime next week and take a look. Also attached is a permit that SWN wanted canceled.

Thanks,

Gayne

[Quoted text hidden]

69-00332.pdf
178K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Please advise: FRAC NOTIFICATION - WV Requirements

3 messages

Andrea Bond <Andrea_Bond@swn.com> Mon, Mar 21, 2022 at 9:00 AM
To: "bryan.o.harris@wv.gov" <bryan.o.harris@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: "dep.water.use@wv.gov" <dep.water.use@wv.gov>

Bryan and/or Gayne –

I just recently took over analyst duties for SWN's SWAPP division. I would like to ensure that I am clear on reporting requirements and timelines for your area.

I am inquiring specifically about the FRAC NOTIFICATION for the SWN A pad in Wetzel County - (4 wells listed below).

Our pad prep start is scheduled for March 28, 2022 (4 days to prep), with an anticipated frac start of 4/20.

Do you need a notification prior to Pad Prep, or anticipated frac start?

SWN Production LLC submits this notification to the DEP regarding our plan to stimulate the following wells on the Estimated Frac Start Date of 4/20/2022.

- SWN A WTZ 1H
- SWN A WTZ 201H
- SWN A WTZ 401H
- SWN A WTZ 601H

Andrea Bond

Staff Drilling and Completions Analyst

Northwest Appalachia Team - NEAPP



10000 Energy Drive

Spring, TX 77389

Direct: 832 (SWN) 796.7428

Cell: 832.302.6921

Andrea_Bond@SWN.com

www.swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Mar 21, 2022 at 11:22 AM
To: Andrea Bond <Andrea_Bond@swn.com>, Kenneth L Greynolds <kenneth.l.greynolds@wv.gov>

Andrea,

When you start prep work You should notify the inspector so we are aware of the work. I also CC Ken Greynolds. He is the inspector for Wetzel County now. Any other questions let us know.

Regards,

Gayne
[Quoted text hidden]

Greynolds, Kenneth L <kenneth.l.greynolds@wv.gov> Mon, Mar 21, 2022 at 11:39 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thanks Gayne.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Plugging Vertical Storage Well Work Permit API: 47-077-00033)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Tue, Mar 22, 2022 at 1:41 PM
To: maria_medvedeva@tcenergy.com, cervin@prestoncountywv.com, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-077-00033 - TERRA ALTA 7377

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry
Environmental Resource Specialist 3
West Virginia Department of Environmental Protection
Office of Oil & Gas
601 57th St. SE
Charleston, WV 25304
(304) 926-0499 ext. 41115
(304) 926-0452 fax
Wade.A.Stansberry@wv.gov

2 attachments

47-077-00033 - Copy.pdf
8174K

IR-8 Blank.pdf
228K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Plugging Vertical Well Work Permit API: 47-023-00007)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Fri, Apr 8, 2022 at 12:44 PM
To: keri.fieno@bhk.com, Ralph Layton <rlayton@assessor.state.wv.us>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-023-00007 - EAST DOLLY SODS 2 - 1932

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

2 attachments

IR-8 Blank.pdf
233K

47-023-00007 - Copy.pdf
3857K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Plugging Well Work Permit (API: 47-077-00031)

1 message

Stansberry, Wade A <Wade.A.Stansberry@wv.gov> Thu, May 13, 2021 at 12:18 PM
To: "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>

I have attached a copy of the newly issued well permit number (API **47-077-00031**) This will serve as your copy. If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resources Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

2 attachments

47-077-00031 - Copy.pdf
2569K

IR-8 Blank.pdf
157K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Plugging Well Work Permit (API: 47-077-00106)

1 message

Stansberry, Wade A <Wade.A.Stansberry@wv.gov> Thu, May 13, 2021 at 12:21 PM
To: "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>

I have attached a copy of the newly issued well permit number (API **47-077-00106**) This will serve as your copy. If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resources Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

2 attachments

47-077-00106 - Copy.pdf
2345K

IR-8 Blank.pdf
157K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Production Casing and Cement Notifications, Betty Schafer MSH 1

5 messages

sdc40 <sdc40@swn.com> Sun, Feb 20, 2022 at 6:55 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, Dicky Hall <Dicky_Hall@swn.com>

This email serves to notify you of our “Intent to Set and Cement Production Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Betty Schafer MSH 1
- API #: 47-051-02382-00-00
- Proposed depth for setting casing: 23,322’
- Proposed date for setting casing: 2/22/2022 @ 14:00 hrs.
- Casing size & type: 5.5” 20# P110 HP, CDC Talon
- Estimated date/ time for cementing casing: 2/22/2022 @ 22:00 hrs.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

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sdc40 <sdc40@swn.com> Wed, Feb 23, 2022 at 10:16 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>

Cc: sdc40 <sdc40@swn.com>

Gayne,

We are running a little behind the schedule below, We should be cementing later this evening. I will send the job report soon after.

Thank you, Jack

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Feb 23, 2022 at 10:42 AM
To: sdc40 <sdc40@swn.com>

Thanks for the update. If I remember correctly this is the last well on the pad, correct?
[Quoted text hidden]

---

sdc40 <sdc40@swn.com> Wed, Feb 23, 2022 at 10:44 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Yes sir, we will be moving to the Carl Rotter pad this weekend

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Feb 23, 2022 at 10:46 AM
To: sdc40 <sdc40@swn.com>

Sounds good. You will have a little elbow on that pad
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Production Casing and Cement Notifications, Betty Schafer MSH 3

2 messages

sdc40 <sdc40@swn.com> Thu, Feb 3, 2022 at 9:04 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

This email serves to notify you of our “Intent to Set and Cement Production Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Betty Schafer MSH 3
- API #: 47-051-02417-00-00
- Proposed depth for setting casing: 22,755’
- Proposed date for setting casing: 2/06/2022 @ 03:00 hrs.
- Casing size & type: 5.5” 20# P110 HP, CDC Talon
- Estimated date/ time for cementing casing: 2/06/2022 @ 9:00 hrs.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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sdc40 <sdc40@swn.com> Sun, Feb 6, 2022 at 5:52 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

Just a heads up, we are running behind on our prediction for cementing the Betty Schafer MSH 3. We are still Tripping out of the hole and will probably not cement until approximately Noon 2/7/22

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com



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[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Production Casing and Cement Notifications, Betty Schafer MSH 405

3 messages

sdc40 <sdc40@swn.com> Mon, Jan 17, 2022 at 10:16 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Danny Martinez <Danny_Martinez@swn.com>

This email serves to notify you of our “Intent to Set and Cement Production Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Betty Schafer MSH 405
- API #: 47-051-02383-00-00
- Proposed depth for setting casing: 20,757’
- Proposed date for setting casing: 1/20/2022 @ 02:00
- Casing size & type: 5.5” 20# P110 HP, CDC HTQ
- Estimated date/ time for cementing casing: 1/20/2022 @ 11:00 hrs.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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sdc40 <sdc40@swn.com> Thu, Jan 20, 2022 at 9:57 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Just a heads up, we re running behind on our prediction for cementing the Betty Schafer MSH 405 We are still Tripping out of the hole and will probably not cement until approximately Midnight 1/21/22

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Buddy Manuel 405-323-0255

sdc40@swn.com



[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Jan 20, 2022 at 10:35 AM
To: sdc40 <sdc40@swn.com>

Thanks for the update
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Production Casing and Cement Notifications, Carl Rotter OHI 10H

1 message

sdc40 <sdc40@swn.com> Sat, Apr 23, 2022 at 6:46 PM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

This email serves to notify you of our “Intent to Set and Cement Production Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 10H
- API #: 47-069-00328-00-00
- Proposed depth for setting casing: 23,335’
- Proposed date for setting casing: 4/26/2022 @ 01:00 hrs.
- Casing size & type: 5.5” 20# P110 HP, CDC Talon
- Estimated date/ time for cementing casing: 4/26/2022 @ 06:00 hrs.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

swn Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Production Casing and Cement Notifications, Carl Rotter OHI 206

1 message

sdc40 <sdc40@swn.com> Mon, Mar 14, 2022 at 5:10 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>

This email serves to notify you of our “Intent to Set and Cement Production Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 206
- API #: 47-069-00329-00-00
- Proposed depth for setting casing: 25,623’
- Proposed date for setting casing: 3/16/2022 @ 09:30 hrs.
- Casing size & type: 5.5” 20# P110 HP, CDC Talon
- Estimated date/ time for cementing casing: 3/16/2022 @ 15:30 hrs.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Production Casing and Cement Notifications, Carl Rotter OHI 210H

1 message

sdc40 <sdc40@swn.com> Fri, May 6, 2022 at 6:38 AM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, sdc40 <sdc40@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

This email serves to notify you of our “Intent to Set and Cement Production Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 210H
- API #: 47-069-00331-00-00
- Proposed depth for setting casing: 21,555’
- Proposed date for setting casing: 5/09/2022 @ 3:00 hrs.
- Casing size & type: 5.5” 20# P110 HP, CDC Talon
- Estimated date/ time for cementing casing: 5/09/2022 @ 13:45 hrs.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Production Casing and Cement Notifications, Carl Rotter OHI 6

3 messages

sdc40 <sdc40@swn.com> Sat, Mar 26, 2022 at 2:34 PM
To: Drilling DMR <drilling_DMR@swn.com>
Cc: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

This email serves to notify you of our “Intent to Set and Cement Production Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 6
- API #: 47-069-00327-00-00
- Proposed depth for setting casing: 19,613’
- Proposed date for setting casing: 3/29/2022 @ 01:00 hrs.
- Casing size & type: 5.5” 20# P110 HP, CDC HTQ +
- Estimated date/ time for cementing casing: 3/29/2022 @ 6:00 hrs.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Doug Thompson 713-851-2726

sdc40@swn.com

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sdc40 <sdc40@swn.com> Mon, Mar 28, 2022 at 11:09 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Gayne,

We are running slightly ahead of the below schedule for a change, so we could be setting casing later this evening the 28th, and cementing around midnight tonight. Let me know if you have questions.

Thank you,

Jack

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Mar 28, 2022 at 11:18 AM
To: sdc40 <sdc40@swn.com>

Thanks for the update.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Production Casing and Cement Notifications, Carl Rotter OHI 8

1 message

sdc40 <sdc40@swn.com> Wed, Apr 6, 2022 at 6:23 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Joel Still <Joel_Still@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>

This email serves to notify you of our “Intent to Set and Cement Production Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Carl Rotter OHI 8
- API #: 47-069-00330-00-00
- Proposed depth for setting casing: 24,995’
- Proposed date for setting casing: 4/11/2022 @ 09:30 hrs.
- Casing size & type: 5.5” 20# P110 HP, CDC Talon
- Estimated date/ time for cementing casing: 4/12/2022 @ 13:30 hrs.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Production Casing and Cement Notifications, Timmy Minch OHI 10H

1 message

sdc40 <sdc40@swn.com> Fri, Jun 17, 2022 at 10:36 AM
To: "Gower, Strader C" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

This email serves to notify you of our “Intent to Set and Cement Production Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Timmy Minch OHI 10H
- API #: 47-069-00336-00-00
- Proposed depth for setting casing: 20,234’
- Proposed date for setting casing: 6/20/2022 @ 01:00 hrs.
- Casing size & type: 5.5” 20# P110 HP, CDC HTQ+
- Estimated date/ time for cementing casing: 6/20/2022 @ 07:00 hrs.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Chris Varela 501-428-1691

sdc40@swn.com

SWN Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Production Casing and Cement Notifications, Timmy Minch OHI 210H

1 message

sdc40 <sdc40@swn.com> Wed, Jun 29, 2022 at 5:56 AM
To: "Gower, Strader C" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Jack Hamm <Jack_Hamm@swn.com>

This email serves to notify you of our “Intent to Set and Cement Production Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Timmy Minch OHI 210H
- API #: 47-069-00337-00-00
- Proposed depth for setting casing: 19,857’
- Proposed date for setting casing: 7/3/2022 @ 15:45 hrs.
- Casing size & type: 5.5” 20# P110 HP, CDC HTQ+
- Estimated date/ time for cementing casing: 7/3/2022 @ 21:45 hrs.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Production Cementing Report - Charles Jamison MSH 610

1 message

SDC41 <SDC41@swn.com> Thu, May 5, 2022 at 3:12 PM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

Production Cementing Details - Charles Jamison MSH 610

Fill cement lines and pressure test T/ 1,000 psi low 8000 psi high, all tests held for 5 min.. Pump 150 bbls MPE @ 14.0 ppg 0.900 lb/bbl B389 + 1.0 gal/bbl B553 + 0.1 gal/bbl D047 + 314.658 lb/bbl D031 , Drop bottom plug. Mix and pump tail cement 5445 sks 1,251 bbls Class "A" 100 BWOB D901 cement slurry @ 15.0 ppg 1.29 yld 6.00 gal/sk 0.40% BWOB D255 + 0.02 BWOB D047 + 0.04% BWOB D208 + 0.71% BWOB D800. Drop top plug, Displace with 677 bbls fresh water (20 bbls sugar water to start 50 lbs/per 10 bbls) w/0.02 gal/bbl L064 + 0.08 gal/bbl M300 + 5 gal/bbl TP110. Bumped plug w/ psi (500 psi over) @ 18:50 hrs 05/04/2022, Held pressure for 5 mins, released pressure to check floats, floats held. Bled back11 bbls to truck. Returned 77 bbls mud flush spacer to surface. Estimated TOC @ 1,725'. Full returns throughout the whole job, stalled out rotary w/34k torque 100 bbls into displacement.

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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Production Cementing Report - Charles Jamison MSH 610.pdf
417K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

RE: [EXTERNAL] Letter concerning vegetation control SW 7397

1 message

Lorrie Steadman <lorrie_steadman@tcenergy.com> Wed, May 18, 2022 at 11:42 AM
To: "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>, Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>, Cody Harrison <cody_harrison@tcenergy.com>, "Ralph@Lewisfarmwv.com" <Ralph@lewisfarmwv.com>
Cc: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>

Ralph & Joanne:

Just emailing to confirm that we have updated our spreadsheet to reflect "no herbicide spray" to take place on your property.

Thanks,

Lorrie Steadman
Land Representative
Land Services
Columbia Gas Transmission LLC/ TC Energy
12001 Industrial Park St.
Cumberland, MD 21502
Office: (301)729-5624
Cell: (304)290-7572
Lorrie_Steadman@tcenergy.com

-----Original Message-----
From: Lorrie Steadman
Sent: Wednesday, May 18, 2022 8:00 AM
To: joann@lewisfarmwv.com; Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>; Cody Harrison <cody_harrison@tcenergy.com>; Ralph@Lewisfarmwv.com
Subject: RE: [EXTERNAL] Letter concerning vegetation control SW 7397

I'll let the ROW Dept know.

Lorrie Steadman
Land Representative
Land Services
Columbia Gas Transmission LLC/ TC Energy
12001 Industrial Park St.
Cumberland, MD 21502
Office: (301)729-5624
Cell: (304)290-7572
Lorrie_Steadman@tcenergy.com

-----Original Message-----
From: joann@lewisfarmwv.com <joann@lewisfarmwv.com>
Sent: Tuesday, May 17, 2022 4:58 PM
To: Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>; Lorrie Steadman <lorrie_steadman@tcenergy.com>; Cody Harrison <cody_harrison@tcenergy.com>; Ralph@Lewisfarmwv.com
Subject: [EXTERNAL] Letter concerning vegetation control SW 7397
Importance: High

EXTERNAL EMAIL: PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe. If this email looks suspicious, report it.

==========
This is not on our property. You need to send the notification to the correct Landowner.

Joann

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If you are unable to click the request link, please reply to this email and change subject line to "UNSUBSCRIBE".

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Thank you

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

RE: [External]

3 messages

Josh Boyda <Josh_Boyda@swn.com> Fri, Oct 29, 2021 at 12:39 PM
To: Gayne Knitowski <gayne.knitowski@yahoo.com>, "Gayne.J.Knitowski@wv.gov" <Gayne.J.Knitowski@wv.gov>

Good afternoon Gayne,

SWN is formally requesting a 30 day extension for abatement of the David Reinbeau gas well pad NOV, Violation No. 11753. Please let me know if this can be granted.

Thank you,

Joshua Boyda

Senior Environmental Specialist – West Virginia Division

Southwestern Energy

1300 Fort Pierpont Dr.

Suite 201

Morgantown, WV 26508

Office: 304-884-1713

Cell: 501-428-3636

From: Gayne Knitowski <gayne.knitowski@yahoo.com>
Sent: Wednesday, October 27, 2021 9:41 AM
To: Josh Boyda <Josh_Boyda@SWN.COM>
Subject: [External]

Josh,

Thanks for keeping me informed. Attached is a copy of the NOV so that you can see what entails. A verified copy will be sent to agent. Any questions let me know

Regards,

Gayne

Sent from Yahoo Mail for iPhone

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Oct 29, 2021 at 3:30 PM
To: Josh Boyda <Josh_Boyda@swn.com>

Josh,

I will get you the extension as soon as possible. Most likely Monday. Have a good weekend.

Gayne
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Nov 1, 2021 at 9:18 AM
To: Josh Boyda <Josh_Boyda@swn.com>

Josh,

Attached is the 30 day extension to abate NOV #11753. I will have Charleston send out a hard copy.

Regards,

Gayne

On Fri, Oct 29, 2021 at 12:39 PM Josh Boyda <Josh_Boyda@swn.com> wrote:
[Quoted text hidden]

Exabate1.pdf
494K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Re: ***REVISED*** Notice of "Intent to Spud In" on the Charles Jamison MSH 406

1 message

Bair, Steve <stevebair@acnrinc.com> Sat, Jun 4, 2022 at 7:35 AM
To: SDC41 <SDC41@swn.com>
Cc: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>, Marcus Rendon <Marcus_Rendon@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, "Howard, Brian" <BrianHoward@acnrinc.com>, "Ahmed, Haris" <HarisAhmed@acnrinc.com>

Is there any way to send this without the encryption?

Thanks,

Steve Bair

Coal, Oil and Gas Relations Manager
American Consolidated Natural Resources, Inc.
304-638-9909

On Jun 4, 2022, at 7:33 AM, SDC41 <SDC41@swn.com> wrote:

CAUTION: This email originated from outside of ACNR. Do not click links or open attachments unless you recognize the sender and know the content is safe.

You have received a secure message from Southwestern Energy

Read your secure message by opening the attachment, securedoc_20220604T062231.html. You will be prompted to open (view) the file or save (download) it to your computer. For best results, save the file first, then open it in a Web browser. To access from a mobile device, forward this message to mobile@res.cisco.com to receive a mobile login URL.

If you have concerns about the validity of this message, contact the sender directly.

securedoc_20220604T062231.html
145K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Re: Barry Stollings Area

1 message

Brewer, Charles T <charles.t.brewer@wv.gov> Tue, Oct 19, 2021 at 2:17 PM
To: Brittany Woody <Brittany_Woody@swn.com>, Douglas C Newlon <Douglas.C.Newlon@wv.gov>, Gayne J Knitowski <gayne.j.knitowski@wv.gov>

Brittany,

As of now, Please direct everything to Gayne. His email is attached.

On Tue, Oct 19, 2021 at 1:43 PM Brittany Woody <Brittany_Woody@swn.com> wrote:

> Hey Taylor-
>
> I just wanted to see who will be covering Barry's areas since his last day is Friday.
>
> Thanks!
>
> Brittany Woody
>
> Senior Regulatory Analyst
>
> Southwestern Energy
> 1300 Fort Pierpont Dr., Suite 201
> Morgantown, WV 26508
> Office: 304-884-1613
> Cell: 304-997-2598
>
> **Notice**: This e-mail may contain privileged and/or confidential information and is intended only for the addressee. If you are not the addressee or the person responsible for delivering it to the addressee, you may not copy or distribute this communication to anyone else. If you received this communication in error, please notify us immediately by telephone or return e-mail and promptly delete the original message from your system.

--

Taylor Brewer, B.S., M.S.

Assistant Chief - Permitting

WVDEP Office of Oil and Gas

601 57th Street, SE

Charleston, WV 25304

304-926-0499 ext. 41108

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Re: East Dolly Sods 2 1932

5 messages

Keri Fieno <keri.fieno@chk.com> Tue, Feb 15, 2022 at 12:02 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Classification: DCL-Internal

Good afternoon,

Please find the attached application for the East Dolly Sods 2 1932. We have kept the Class H Cement. We will request a waiver from the chief to use the Class H cement.

Let me know if this is acceptable and I will go ahead and get this notarized and submit this P&A application.

Thank you,

Keri Fieno

HSER, Regulatory Specialist

Chesapeake Energy Corporation

6100 N Western Avenue

Oklahoma City, OK 73118

Office: 405-935-1154

Email: keri.fieno@chk.com

From: Knitowski, Gayne J <gayne.j.knitowski@wv.gov>
Sent: Tuesday, February 1, 2022 9:59 AM
To: Keri Fieno <keri.fieno@chk.com>
Subject: [EXTERNAL] Re: East Dolly Sods 2 1932

There are two things that I would add or change.

1. Attempt to pull all free pipe at a min. of 1-1/2x string weight

2. Class A cement must be used. You can apply for a waiver from the Chief to use Class H cement.

Any questions let me know.

Regards,

Gayne

On Mon, Jan 31, 2022 at 3:52 PM Keri Fieno <keri.fieno@chk.com> wrote:

> Classification: DCL-Internal
>
> Good afternoon,
>
> Per our conversation this afternoon, I've attached the P&A summary packet for our East Dolly Sods 2 1932 well. I've also attached the Drilling/Completion information we have on file. Let me know if you have any questions and if the plugging procedure is acceptable.
>
> Thank you,
>
> Keri Fieno
>
> HSER, Regulatory Specialist
>
> Chesapeake Energy Corporation
>
> 6100 N Western Avenue
>
> Oklahoma City, OK 73118
>
> Office: 405-935-1154
>
> Email: keri.fieno@chk.com
>
> ---
>
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Plugging Permit Packet_East Dolly Sods 2 1932.pdf

1901K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Feb 16, 2022 at 8:36 AM
To: Keri Fieno <keri.fieno@chk.com>

Keri,

Attached is the signed plugging permit. Have a good day.

Regards,

Gayne
[Quoted text hidden]

23-00007.pdf
2051K

Keri Fieno <keri.fieno@chk.com> Thu, Feb 24, 2022 at 9:12 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Classification: DCL-Internal

Good morning,

I just wanted to follow-up on this submittal. Do you send a formal approval before I submit this application?

Thank you,

Keri

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Feb 24, 2022 at 9:43 AM
To: Keri Fieno <keri.fieno@chk.com>

Keri,

My approval is signing off on the permit which I returned to you. It is ready to be submitted to Charleston. If you have any questions let me know.

Regards,

Gayne
[Quoted text hidden]

Keri Fieno <keri.fieno@chk.com> Wed, Mar 2, 2022 at 9:53 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Classification: DCL-Internal

Thank you! For some reason your email had gone to my junk folder so I hadn't seen your response. Thanks for your help on this approval.

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Re: Expedited Modification Horizontal H6A Well Work Permit Evans 1213 Pad

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov> Mon, Nov 29, 2021 at 11:34 AM
To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, "Knitowski, Gayne J" <e026012@wv.gov>, Eric Buzzard <ebuzzard@marshallcountywv.org>

I have attached a copy of the newly issued well permit number. This will serve as your copy.

47-051-02417- BETTY SCHAFER MSH 3H

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

4 attachments

- **47-051-02417 - Copy.pdf** 4760K
- **IR-26 Blank.pdf** 152K
- **WMP02104 Betty Schafer MSH 2021.11.03.pdf** 1778K
- **51-02417 SSP signed.pdf** 3078K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

RE: SWN FRAC NOTIFICATION - BRIAN TESLOVICH PAD

3 messages

Heather Franer <Heather_Franer@swn.com> Thu, Dec 9, 2021 at 12:06 PM
To: "Gayne.J.Knitowski@wv.gov" <Gayne.J.Knitowski@wv.gov>

Gayne – Below is the Stim notification for the Brian Teslovich Pad. Please confirm receipt of this email.

Thank you,

Heather

Heather Franer

Drilling & Completions Staff Analyst

10000 Energy Dr

Spring, TX 77389-4954

Office: 832-796-7306

Cell: 832-745-2628/832-496-1450

heather_franer@swn.com

www.swn.com

From: Heather Franer
Sent: Thursday, December 9, 2021 6:30 AM
To: Barry.W.Stollings@wv.gov
Cc: Aaron Balderson <Aaron_Balderson@SWN.COM>; Kevin Porsch <Kevin_Porsch@SWN.COM>; WVD - WSS <WVD-WSS@SWN.COM>; Liz Gee <liz_gee@swn.com>; Bobby Willis <Bobby_Willis@SWN.COM>; Denise Grantham <Denise_Grantham@SWN.COM>; Nick Flesher <Nick_Flesher@SWN.COM>; DEP.water.use@wv.gov; 'Heather Franer'
Subject: SWN FRAC NOTIFICATION - BRIAN TESLOVICH PAD
Importance: High

SWN Production LLC submits this notification to the DEP regarding our plan to stimulate the following wells on the Estimated Frac Start Date of 12/18/2021.

BRIAN TESLOVICH BRK 1H – API # 47009003250000

BRIAN TESLOVICH BRK 201H – API # 47009003230000

BRIAN TESLOVICH BRK 205H – API # 47009003120000

BRIAN TESLOVICH BRK 3H – API # 47009003110000

BRIAN TESLOVICH BRK 405H – API # 47009003130000

BRIAN TESLOVICH BRK 5H – API # 47009003170000

Regards,

Heather

Heather Franer

Drilling & Completions Staff Analyst

10000 Energy Dr

Spring, TX 77389-4954

Office: 832-796-7306

Cell: 832-745-2628/832-496-1450

heather_franer@swn.com

www.swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Dec 9, 2021 at 12:40 PM
To: Heather Franer <Heather_Franer@swn.com>

Heather,

Thanks for the notification.

Gayne
[Quoted text hidden]

Heather Franer <Heather_Franer@swn.com> Thu, Dec 9, 2021 at 12:42 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thank you for letting me know you received.

Heather Franer

Drilling & Completions Staff Analyst



10000 Energy Dr

Spring, TX 77389-4954

Office: 832-796-7306

Cell: 832-745-2628/832-496-1450

heather_franer@swn.com

www.swn.com

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Re: Well 7417

2 messages

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Fri, Jun 10, 2022 at 9:05 AM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>, Karen Franks <karen_franks@tcenergy.com>, GAYNE.J.KNITOWSKI@wv.gov
Cc: Ralph Lewis <ralph@lewisfarmwv.com>, Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>

Thank you for the update.
Also I noticed that while still on location Baker Hughes employees were not wearing hard hats/PPE. (can send photos).
Not sure if that is a policy change.

Joann

Lorrie Steadman <lorrie_steadman@tcenergy.com> wrote ..
> Ralph & Joann:
>
> The crew will be returning Monday or Tuesday of next week to blow down well into
> tank and load well with fresh water and start testing after that. We will move
> the matts that are where you mow after this work is done.
>
> Lorrie Steadman
> Land Representative
> Land Services
> Columbia Gas Transmission LLC/ TC Energy
> 12001 Industrial Park St.
> Cumberland, MD 21502
> Office: (301)729-5624
> Cell: (304)290-7572
> Lorrie_Steadman@tcenergy.com<mailto:Lorrie_Steadman@tcenergy.com>
>
> ----------
>
>
>
>
>
>
> We respect your right to choose which electronic messages you receive. To stop
> receiving this and similar communications from TC Energy please Click here to unsubscribe.
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> received this message in error, please notify the sender immediately and delete
> the original message.
>
> Thank you
>
>

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Mon, Jun 13, 2022 at 3:11 PM

To: Lorrie Steadman <lorrie_steadman@tcenergy.com>, Karen Franks <karen_franks@tcenergy.com>, Jeffrey Hoyle <Jeffrey.Hoyle@ferc.gov>, "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>
Cc: Ralph Lewis <ralph@lewisfarmwv.com>

Lorrie I needed to mow today. The gas has been blowing for at least 4.5 hours and I could not wait any longer due to expected rain and height of the grass. I stayed further away from the location than is route 51 Saltlick Road (approximately 30 feet) and well away from the fenced area. Steve was recording me mowing so I assume that someone will try to make an issue of this situation and there is no situation. If needed I will provide a photo.

[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Reinbau fire

3 messages

Gayne J Knitowski <gayne.j.knitowski@wv.gov> Mon, Oct 25, 2021 at 12:25 PM
To: J.Scott.Rodeheaver@wv.gov, james.a.martin@wv.gov, Douglas.C.Newlon@wv.gov

Here are a few pictures. Shale production was onsite servicing the compressor to put back on line when fire started. To people were onsite and no injuries. Some antifreeze, oil, diesel and possibly some produced water spilled. Nothing left location. SWN has Miller environmental doing the remediation.

3 wells on pad
51-01622
51-01623
51-01630

Any questions let me know.

6 attachments



IMG-0638.jpg
1990K



IMG-0636.jpg
3200K



IMG-0633.jpg
3774K

IMG-0632.jpg
2208K





IMG-0631.jpg
5258K



IMG-0629.jpg
2573K

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Mon, Oct 25, 2021 at 2:33 PM
To: Gayne J Knitowski <gayne.j.knitowski@wv.gov>
Cc: James A Martin <james.a.martin@wv.gov>, "Newlon, Douglas C" <Douglas.C.Newlon@wv.gov>

So the fire started as they were working on it? Do we know how and why exactly?

I am guessing a cease order should be written?
[Quoted text hidden]
--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Oct 25, 2021 at 3:03 PM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>
Cc: James A Martin <james.a.martin@wv.gov>, "Newlon, Douglas C" <Douglas.C.Newlon@wv.gov>

The how and why is still under investigation. I told them we are going to require a report and what caused the fire. They have a few theories but nothing is sound yet. We can make that part of the abatement if a NOV if issued.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Reinbeau E&S install

1 message

Dawn Keller <Dawn_Keller@swn.com> Fri, Mar 4, 2022 at 3:14 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: John Dubowski <John_Dubowski@swn.com>

Hi Gayne,

Per our conversation, E&S for the Reinbeau pad expansion will be installed during the tree removal and temp fence install. We anticipate starting the expansion of the pad between April 1-15.

Thanks!

Dawn Keller

Senior Environmental Specialist

Southwestern Energy

1300 Fort Pierpont Drive Suite 201

Morgantown, WV 26508

O: 304-884-1683

C: 501-697-7230

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Reinbeau Pad Expansion Pre-Construction Meeting

2 messages

Dawn Keller <Dawn_Keller@swn.com> Thu, Apr 7, 2022 at 8:25 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: John Dubowski <John_Dubowski@swn.com>, Chad Keilman <Chad_Keilman@swn.com>

Good Morning Gayne,

We will be having a Pre-Construction meeting for the David Reinbeau Pad Expansion on Monday, 4/11/2022, at 10:30 am at the pad. Construction will begin after the meeting. Please feel free to attend if you are available.

Thanks!

Dawn Keller

Senior Environmental Specialist

Southwestern Energy

1300 Fort Pierpont Drive Suite 201

Morgantown, WV 26508

O: 304-884-1683

C: 501-697-7230

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John Dubowski <John_Dubowski@swn.com> Thu, Apr 7, 2022 at 8:40 AM
To: Dawn Keller <Dawn_Keller@swn.com>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: Chad Keilman <Chad_Keilman@swn.com>

Gayne,

If you can make it to this meeting I would appreciate it. I would like to discuss the mishap at the Shannon Fields pad with the failure to notify for the start of construction.

Thanks.

John Dubowski
Cell: 346-773-6078, Tel: 304-884-1678
john_dubowski@swn.com

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Response to Notice of Violation No. 11753

4 messages

Josh Boyda <Josh_Boyda@swn.com> Tue, Nov 30, 2021 at 10:07 AM
To: "Gayne.J.Knitowski@wv.gov" <Gayne.J.Knitowski@wv.gov>

Good morning Gayne,

Please see the attached document titled “Reinbeau NOV Response Letter”. Please also see the attached environmental sampling report titled “David Reinbeau Summary” as well as the safety incident report titled “David Reinbeau Compressor Incident Report”. We are hopeful that the attached documents address the Department’s concerns identified in the Notice of Violation No. 11753 and will adequately abate the violation. Please let me know if you have any questions or need any further information.

Respectfully submitted,

Joshua Boyda

Senior Environmental Specialist – West Virginia Division

Southwestern Energy

1300 Fort Pierpont Dr.

Suite 201

Morgantown, WV 26508

Office: 304-884-1713

Cell: 501-428-3636

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3 attachments

Reinbeau NOV Response Letter.pdf
373K

David Reinbeau Summary.pdf
8040K

David Reinbeau Compressor Incident Report.pdf
4573K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Nov 30, 2021 at 11:23 AM
To: Douglas C Newlon <Douglas.C.Newlon@wv.gov>, J Scott Rodeheaver <J.Scott.Rodeheaver@wv.gov>, James A Martin <james.a.martin@wv.gov>

I met with SWN out at the Reinbeau pad. Looking at the site and the report I feel the NOV can be abated. If you take a look and see anything or think we need more information let me know.

Thanks,

Gayne
[Quoted text hidden]

3 attachments

Reinbeau NOV Response Letter.pdf
373K

David Reinbeau Summary.pdf
8040K

David Reinbeau Compressor Incident Report.pdf
4573K

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Thu, Mar 17, 2022 at 3:14 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: James A Martin <james.a.martin@wv.gov>

When did you receive the David Reinbeau Compressor Incident Report? It is dated November 13, 2021. I see you were sent the email on the 30th. Is that correct?
[Quoted text hidden]
--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

3 attachments

Reinbeau NOV Response Letter.pdf
373K

David Reinbeau Summary.pdf
8040K

David Reinbeau Compressor Incident Report.pdf
4573K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Mar 17, 2022 at 3:45 PM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>
Cc: James A Martin <james.a.martin@wv.gov>

I was given the report 11/30 when I meet Josh Boyda (SWN EHS) at the site.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

REVISED: Notice of "Intent to Spud In" on the Charles Jamison MSH 606

1 message

SDC41 <SDC41@swn.com> Fri, Jun 24, 2022 at 6:09 AM
To: Strader Gower <Strader.C.Gower@wv.gov>, "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Marcus Rendon <Marcus_Rendon@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Spud In" on the Charles Jamison MSH 606, the following is the well info:

- Well Name: Charles Jamison MSH 606
- API #: 47051-02436-0000
- Proposed date for “Spud In” 06/28/2022

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Rick Harless 713-725-2389

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

From: SDC41 <SDC41@SWN.COM>
Sent: Friday, June 24, 2022 6:07 AM
To: Strader Gower <Strader.C.Gower@wv.gov>; gayne.j.knitowski@wv.gov; Brad Nelson <brad_nelson@tcenergy.com>; james_amos@tcenergy.com; adam_chain@tcenergy.com; luke_stull@tcenergy.com
Cc: Marcus Rendon <Marcus_Rendon@SWN.COM>; Joel Still <Joel_Still@SWN.COM>; Daniel Hughes <Daniel_Hughes@SWN.COM>; SDC41 <SDC41@SWN.COM>
Subject: Notice of "Intent to Spud In" on the Charles Jamison MSH 606

Hello All,

Notice of "Intent to Spud In" on the Charles Jamison MSH 406, the following is the well info:

- Well Name: Charles Jamison MSH 606
- API #: 47051-02436-0000
- Proposed date for “Spud In” 06/28/2022

Regards,

SDC 41

Day WSS: Ben Waldner 304-771-3995 / 620-330-7879

Night WSS: Rick Harless 713-725-2389

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645



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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Roth Farms Pad Construction

2 messages

Dawn Keller <Dawn_Keller@swn.com> Thu, Apr 21, 2022 at 10:28 AM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: Chad Keilman <Chad_Keilman@swn.com>, John Dubowski <John_Dubowski@swn.com>

Hi Gayne and Strader,

SWN plans to start construction of the Roth Farms Pad located in Ohio County on 5/2. I have sent you an invitation to the pre-construction meeting, which is on 5/2 at 10 am at the location. Please let me know if you have any questions.

Thanks!

Dawn Keller

Senior Environmental Specialist

Southwestern Energy

1300 Fort Pierpont Drive Suite 201

Morgantown, WV 26508

O: 304-884-1683

C: 501-697-7230

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Apr 21, 2022 at 1:47 PM
To: Dawn Keller <Dawn_Keller@swn.com>

Ok. Thanks for the update
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Ryniawec Pad

6 messages

Blevins, Cragin <cragin.blevins@wv.gov> Mon, Mar 28, 2022 at 10:55 AM
To: Gayne J Knitowski <gayne.j.knitowski@wv.gov>

Good morning Gayne. I don't know how often you inspect the Ryniawec Pad in Brooke county but I have a question about a well that was permitted on that location. I have an API number 4700900214 that I am wondering if it was ever drilled. If you get a chance would you be able to check and let me know the status of this well? Thank you. If it has never been drilled we may need your to cancel it.

--

Cragin Blevins

Environmental Resources Specialist III

West Virginia DEP

Office of Oil and Gas/ Permitting

601 57th St. SE Office 2027B

Charleston, WV 25304

Cragin.Blevins@wv.gov

O (304) 926-0499 Ext 41103

C (304) 389-7450

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Mar 28, 2022 at 11:18 AM
To: "Blevins, Cragin" <cragin.blevins@wv.gov>

Cragin,

Will get out there this week and will let you know.

Regards,

Gayne
[Quoted text hidden]

Blevins, Cragin <cragin.blevins@wv.gov> Mon, Mar 28, 2022 at 11:22 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Sounds good, thank you.
[Quoted text hidden]
--

Cragin Blevins

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Mar 31, 2022 at 7:13 AM
To: "Blevins, Cragin" <cragin.blevins@wv.gov>, Jackie N Thornton <jackie.n.thornton@wv.gov>

Craigin,

Went to pad and well was never drilled. Attached is the IR-26 to cancel the permit.

Thanks,

Gayne

On Mon, Mar 28, 2022 at 10:56 AM Blevins, Cragin <cragin.blevins@wv.gov> wrote:
[Quoted text hidden]

009-00214.pdf
177K

Blevins, Cragin <cragin.blevins@wv.gov> Thu, Mar 31, 2022 at 8:14 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thank you.
[Quoted text hidden]
--

Cragin Blevins

Thornton, Jackie N <jackie.n.thornton@wv.gov> Thu, Mar 31, 2022 at 8:48 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: "Blevins, Cragin" <cragin.blevins@wv.gov>

I'll get this entered today.

On Thu, Mar 31, 2022 at 7:13 AM Knitowski, Gayne J <gayne.j.knitowski@wv.gov> wrote:
[Quoted text hidden]

--
Jackie Thornton
Environmental Resource Analyst
WVDEP-Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
jackie.n.thornton@wv.gov
304-206-6015

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SDC 41 - SWN - Charles Jamison MSH 410

1 message

SDC41 <SDC41@swn.com> Wed, Mar 16, 2022 at 12:10 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>

Hello Gayne,

Can you please give me a buzz when you have an opportunity. I want to be sure we're putting down duct control where you needed it.

Ben Waldner's cell #304-771-3995

Regards,

SDC 41

Day WSS: Ben Waldner 620-330-7879

Night WSS: Donny Newby 501-269-0361

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SDC 41 Intent to Set and Cement Surface Casing" on the O E Berge 3H

1 message

SDC41 <SDC41@swn.com> Fri, Nov 5, 2021 at 10:17 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Set and Cement Surface Casing" on the O E Berge 3H, the following is the well info:

- Well Name: OE Burge MSH 3
- API #: 47051024140000
- Proposed depth for setting casing: 328’
- Proposed date for cementing casing: 11/5/2021 @ 22:00 Hrs
- Casing size & type: 13.75” 54.5# J-55 BTC

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Donny Newby 501-269-0361

Office: 281-833-2645

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SDC 41 Spud Notification O E Burge MSH 3 H

1 message

SDC41 <SDC41@swn.com> Fri, Nov 5, 2021 at 5:53 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Matt Weems <Matt_Weems@swn.com>, Dave Bert <Dave_Bert@swn.com>, SDC41 <SDC41@swn.com>

Hello All,

Notice of "Intent to Spud In" on the O E Berge MSH 3H, the following is the well info:

- Well Name: OE Burge MSH 3H
- API #: 47051024140000
- Proposed date for “Spud In”: 11/6/2021 @ 06:00 Hrs

SDC 41

Day WSS: Daniel Hughes 681-433-9272

Night WSS: Donny Newby 501-269-0361

Office: 281-833-2645

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SDC 41, Charles Jamison MSH 410 Surface CBL

1 message

SDC41 <SDC41@swn.com> Tue, Mar 22, 2022 at 11:21 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>

Regards,

SDC 41

Day WSS: Jeff Hill 501-428-2672

Night WSS: Donny Newby 501-269-0361

Rig Office Cell 724-231-3151

Office: 281-833-2645 / 713-423-6942

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CHARLES JAMISON MSH 410.pdf
688K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SDC Rig 40

1 message

sdc40 <sdc40@swn.com> Sat, Nov 6, 2021 at 8:29 PM
To: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>
Cc: Derek Motley <Derek_Motley@swn.com>, Dave Bert <Dave_Bert@swn.com>

- Well Name: Brian Teslovich BRK 3H
- API #: 47-009-00-311-00-00
- Proposed depth for setting intermediate casing: 1,617'
- Proposed date for setting intermediate casing: 11/07/2021
- Casing size & type: 9.625" 36# J-55 LTC

SDC 40

Office: 304-884-1864

WSS Days: Daniel Martinez 479-209-5893

WSS Nights: Ron Rudd 724-840-6381

sdc40@swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Shannon Fields 210H- WW9

3 messages

Brittany Woody <Brittany_Woody@swn.com> Mon, Jan 24, 2022 at 3:39 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Attached for your signature is the WW-9 page from earlier. Let me know if you have any questions.

Thanks!

Brittany Woody

Senior Regulatory Analyst

Southwestern Energy

1300 Fort Pierpont Dr., Suite 201

Morgantown, WV 26508

Office: 304-884-1613

Cell: 304-997-2598

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WW-9 - Fluids Cuttings Rec Plan 04-04-2016_Updated CEK 2.pdf
20K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Jan 25, 2022 at 8:05 AM
To: Brittany Woody <Brittany_Woody@swn.com>

attached is the signed WW-9.
[Quoted text hidden]

WW-9 - Fluids Cuttings Rec Plan 04-04-2016_Updated CEK 2.pdf
135K

Brittany Woody <Brittany_Woody@swn.com> Tue, Jan 25, 2022 at 8:18 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thank you!

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Shawn couch sediment trap

2 messages

Dawn Keller <Dawn_Keller@swn.com> Tue, Mar 15, 2022 at 3:01 PM
To: Gayne J Knitowski <Gayne.J.Knitowski@wv.gov>
Cc: Josh Boyda <Josh_Boyda@swn.com>

Hi Gayne,
Please find attached pictures of before, during and after the sediment trap clean out at the Shawn Couch. The area has been seeded and mulched. Please let me know if you need anything else.

Thanks!













Dawn Keller
Senior Environmental Specialist
SWN SWAPP Division
501-697-7230
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Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Mar 15, 2022 at 4:00 PM
To: Dawn Keller <Dawn_Keller@swn.com>

Looks good. Thanks
[Quoted text hidden]