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

Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

January 19, 2018
PERMIT MODIFICATION APPROVAL
Horizontal 6A / Horizontal 6A Well - 1

CHEVRON APPALACHIA, LLC
700 CHERRINGTON PARKWAY

CORAOPOLIS, PA 15108

Re: Permit Modification Approval for TAYLOR C 3H
47-051-01802-00-00

Modified Lateral Location

CHEVRON APPALACHIA, LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before 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: TAYLOR C 3H
Farm Name: WILLIAMS OHIO VALLEY MIDSTREAM LLC
U.S. WELL NUMBER: 47-051-01802-00-00
Horizontal 6A / Horizontal 6A Well - 1
Date Issued: January 19, 2018

WW-6B
(04/15)

API NO. 47- 51 - 01802
OPERATOR WELL NO. 3H
Well Pad Name: Taylor C

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

1) Well Operator:	Chevron Appalachia, LLC	49449935	Marshall	Clay	Glen Easton, WV
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: 3H Well Pad Name: Taylor C

3) Farm Name/Surface Owner: Williams Ohio Midstream LLC Public Road Access: CR 17 Fork Ridge Road

4) Elevation, current ground: 1257' Elevation, proposed post-construction: 1236'

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 JW 1/12/18

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 6,555', 56' thick - 0.64 psi/ft gradient

8) Proposed Total Vertical Depth: 6,555'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 16,102

11) Proposed Horizontal Leg Length: 9,547

12) Approximate Fresh Water Strata Depths: 470' GL

13) Method to Determine Fresh Water Depths: 1 mi radius search around pad location

14) Approximate Saltwater Depths: 1276', 1880' - 2370' KB; Francis 1V offset well

15) Approximate Coal Seam Depths: 800' GL Pittsburgh

16) Approximate Depth to Possible Void (coal mine, karst, other): None

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: Ireland Mine
Depth: 800' GL
Seam: Pittsburgh No 8
Owner: Consol Energy

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Environmental Protection

API NO. 47- 51 - 01802
OPERATOR WELL NO. 3H
Well Pad Name: Taylor C

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			40'	40'	141.8
Fresh Water	13-3/8"	New	J-55	54.5#	520'	520'	691.0
Coal							
Intermediate	9-5/8"	New	J-55	40#	2,104'	2,104'	941.0
Production	5-1/2"	New	P-110	20#	16,102'	16,102	3,457.0
Tubing							
Liners							

JW 1/12/18

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"	26"					
Fresh Water	13-3/8"	17-1/2"	0.380"	2,730 psi	1,911 psi	Class A	1.18
Coal							
Intermediate	9-5/8"	12-1/4"	0.395"	3,950 psi	2,768 psi	Class A	1.19
Production	5-1/2"	8-1/2"	0.361"	14,360 psi	9,975 psi	Class A, G, or H	1.15
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

WW-6B
(10/14)

API NO. 47- 51 - 01802
OPERATOR WELL NO. 3H
Well Pad Name: Taylor C

JW 1/12/18

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill 17 1/2" hole to 600 then run and cement 13 3/8" casing to surface covering the fresh water. Drill 12.25" hole to 2,330' then run and cement to surface 9 5/8" casing, covering the Big Injun. Drill 8 1/2" hole to KOP at 5,778'. Drill 8 1/2" curve and lateral to 16,102' MD and 6,555' TVD. Run 5 1/2" production casing and cement back to surface.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Chevron will utilize plug and perf method with 52 stages using 8.572 bbl of fluid and 315,000 lbm of sand per stage.

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21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 22.01

22) Area to be disturbed for well pad only, less access road (acres): 4.66

23) Describe centralizer placement for each casing string:

There will be a bow string centralizer every two jts on the Water string and intermediate. Vertical Production: bow string - (1) per every other jt over coupling; Curve and Lateral: solid composite (1) per jt of csg to KOP.

24) Describe all cement additives associated with each cement type:

For the Water string the blend will contain class A cement, 3% CaCl2, and flake. The intermediate will contain class A cement, 10% CaCl2, salt and flake. The production cement will have a lead and tail cement. The lead will contain class A cement, KCl, dispersant, suspension agent, and retarder. The tail will contain class a cement, Calcium Carbonate, KCl, dispersant, de-foamer, suspension agent, and friction reducer.

25) Proposed borehole conditioning procedures:

Well will be circulated a minimum of 3 bottoms up once casing point has been reached on all hole sections and until uniform mud properties are achieved.

*Note: Attach additional sheets as needed.

Chevron
Appalachian LLC
WV Well Site Safety Plan
Pad: Taylor Pad C
Well # M03H

488 Spoon Lane
Moundsville, WV 26041
Clay District
Marshall County, WV

Access Point – 39° 52' 05.45"
80° 41' 29.36"

Well Site – 39° 51' 07.18"
80° 41' 50.06"

Marshall County, West Virginia

Contents

1. Contacts and Meetings

Emergency Points of Contact

Construction Phase	
Primary:	Shawn Smith Construction TL **Cell: 724-323-3173** Office: 724-564-5507
Secondary:	Chevron 24 Hour Emergency Response Line 724-564-3700
Drilling & Completions Phase	
Primary:	John Johnson, D&C General Manager **Cell: 713-825-6462** Office: 412-865-3137
Secondary:	Chevron 24 Hour Emergency Response Line 724-564-3700
Production Phase	
Primary:	John Johnson, Operations General Manager **Cell: 713-825-6462** Office: 412-865-3137
Secondary:	Chevron 24 Hour Emergency Response Line 724-564-3700

Important Telephone Numbers

Agency	Phone Number
James Nicholson, OOG Inspector	(304) 552-3874
Fort Ridge Volunteer Fire Department	(304) 845-3990
Local Police, Fire, & Ambulance	911
Reynolds Memorial Hospital	(304) 845-3211
Marshall County Office of Emergency Management	(304) 843-1130
WV Spill Release Hotline	(800) 642-3074
WVDEP NW Region	(304) 368-2000
WVDEP State Emergency	(800) 642-3074
WV Division of Homeland Security & Emer. Mgt.	(304) 558-5380

Public Notification and Control of Access for H2S Locations

If H2S gas is known or found to be persistently present at hazardous concentrations, the public will be notified through the county emergency response center as detailed in Section 2 of this SSP. Reference Section 6 for further information on H2S. Chevron will coordinate with the first responders to notify and evacuate residents within the affected zones and establish physical barriers and demarcations as may be required to identify the zones. This may include using barricades, mobile equipment, or materials to physically block points of vehicle or pedestrian access, use of caution tape, temporary fence and other markers to identify the perimeters of areas with restricted access, and establishment of decontamination pads and access/egress checkpoints.

Pre-Spud and Safety Meeting Plan

Prior to starting drilling operations, a pre-spud meeting will be held onsite. The DEP Inspector will be notified of the planned pre-spud meeting, as per regulation. Attendees' names will be recorded on a sign-in sheet and that sheet kept in the Drill Site Manager's (DSM) office.

During drilling, completions and workover operations, pre-tour meetings are held prior to the start of each day and night shift. A Plan of Action is discussed which details the critical operations to be performed during the tour. Health, Environment and Safety (HES) hazards and mitigations are discussed with onsite personnel who will be performing those tasks. Attendance is recorded and records kept with the DSM and drilling contractor Rig Manager.

During all phases of operation, tailgate safety meetings are held just prior to the start of safety critical tasks. Personnel who are performing or that are affected by the work discuss execution steps, hazards, and job planning documents such as procedures, job safety analyses (JSA), or permits. Attendance at tailgate safety meetings is recorded on JSAs or permits and the records kept with the contractors performing the work.

A log of personnel on location during all phases of operation will be maintained onsite with the Chevron Representative or contractor site supervisor.

2. Maps and Diagrams

Plan View of Well Location

See Appendix 1

Topographic Map of Well Location

See Appendix 2

Evacuation and Notification Plan

If onsite response efforts are unable to prevent the escalation of an event and site personnel or the general public are in imminent danger, the Chevron DSM, in consultation with the Rig Manager and Chevron Drilling Superintendent, will make the decision to evacuate the location of all personnel. Personnel rosters will be taken with the DSM or other Chevron representative to give an accurate accounting of all personnel at the evacuation point. The evacuation point will vary by site depending on topography and wind direction.

The Chevron DSM or delegate will contact local emergency responders to determine if residents and the general public must be evacuated from the surrounding area. If the incident poses an immediate threat to local residents and the community, the Chevron DSM or delegate will begin contacting local residents, starting with those closest to the well site and most likely to be affected based on wind conditions and other factors, until emergency responders arrive. The local resident emergency notification table and 1 mile radius map are found in Appendix 2

Upon arrival, emergency responders will have primary responsibility for notifications and evacuation of citizens. Chevron will assist the emergency responders as appropriate and directed. The local authorities will have final say in determining the limits of the area requiring evacuation.

3. Well Work

Well Work Description

The well will be drilled, cased, and cemented as per the Wellbore Diagram shown in Appendix 4 of this SSP and the well plan submitted with the permit application. The well will then be perforated, hydraulically fractured, flowed back, and then put on production. The detailed well procedure will be located in the DSM or Well Site Manager's (WSM) office and will be made available to the DEP Inspector or Emergency Response Personnel at their request.

Site Safety Plan (SSP) Distribution

The SSP will be submitted with each horizontal well application, and a copy of the plan will be submitted to the applicable County Office of Emergency Management at least seven days prior to work that involves disturbance of land for well development. The SSP will be provided to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule. A copy of this plan will be kept in the well site's mailbox during construction, drilling, completions, and production operations activities.

Chevron conducts additional reporting and notification, including but not limited to

- EPCRA Tier II reporting to Environmental Protection Agency within 90 days of disturbance
- CFATS Top Screen to the Department of Homeland Security where LNG fuel is anticipated to be stored and used onsite

4. Chemical Inventory

Safety Data Sheet (SDS) Availability and Location

A current copy of SDSs for all chemicals on location is kept with the Chevron and/or contractor representative during each phase of operation and will be made available to the DEP Inspector or Emergency Response Personnel at their request.

Drilling Fluid Materials Inventory

An inventory of all materials on site for mixing and weighting drilling fluids will be kept current by the Mud Engineer and will be made available to the DEP Inspector or Emergency Response Personnel at their request.

5. Well Control

BOP Equipment by Hole Section

A 5K 13-5/8" multi-bowl wellhead will be utilized for both the 12.25" intermediate and the 8.5" production hole sections. The Intermediate section will be drilled with a 5K annular BOP and the production hole section will be drilled with a 10K BOP stack (Pipe and Blind Rams) and a 5K annular.

BOP Testing

Air Rig: Pressure test annular, blind, and pipe ram to 250 psi low / 2,500 psi high for 30 mins, all other ancillary valves 250 psi low / 2,500 psi high for 5 min. No observable pressure decline
BOP Test Frequency to be full test every 21 days, when only the BOP to wellhead connection is broken, the connection which was broken must be re-tested.

Fluid Rig: Upon initial installation and at a 21 day interval the BOP will be re-tested. The annular for both hole sections will be tested to 3,500 psi (70% of its rated capacity) for 30 minutes. Upon initial installation and at a 21 day interval thereafter the BOP stack will be tested to 3,500 psi for 30 minutes. All other well control equipment (Choke, TIW, HRC etc.) will be tested to 3,500 psi.

The BOP will be function tested upon initial installation and after each bit trip.

BOP Equipment and Assembly Installation Schedule
BOP will be nippled up prior to drilling intermediate and production strings.

Well Control Certification and Methodology
The Drill Site Manager, Rig Manager, Engineer, and Superintendent are all required as a condition of employment to have valid International Accredited Drilling Contractors (IADC) Well Control Supervisory Level certifications. The Driller will have IADC Well Control Fundamental Level certifications. A Drill Site Manager, Rig Manager, and Driller will be on location at all times during drilling operations. The Engineer and Superintendent will be available to provide well control support as needed. Individual names and certifications are available upon request.

Chevron uses the IADC Approved Drillers Method of Well Control.

BOP Equipment Diagram
See Appendix 6

Wellhead Schematic
See Appendix 7

Recording and Reporting of Significant Events
Lost circulation, the presence of Hydrogen Sulfide gas, fluid entry into the wellbore, or the presence of abnormally pressured zones will be noted in the daily drilling report that is kept in the Wellview reporting software. The data from this report will be made available to DEP Inspector or Emergency Response Personnel at their request in the event of a significant event. The DEP Inspector will be notified by phone immediately if any of the above significant events occur.

6. Hydrogen Sulfide (H2S)
Based on geologic records, offset well data, and area-specific information, formations containing hydrogen sulfide (H2S) gas at levels of concern are not anticipated to be encountered during drilling and completion activities conducted in Marshall County, West Virginia. During drilling and completion of Utica explorations wells only, the following precautions will be employed.

Detection, Monitoring and Warning Equipment
Wind socks / indicators are installed onsite during drilling, completions, workover and production operations.

Fixed monitors set to alarm at 5 parts per million (ppm) H2S will be installed at the rig floor, substructure, shakers, and mud pits. Fixed monitors are wired to digital readouts on the rig floor and in the DSM's office. If an alarm condition exists, sirens capable of being heard around the site will automatically sound.

If H2S is detected by fixed monitors at ≥10 ppm and persists, the well will be secured, wind direction observed, and all site personnel will muster upwind of the hazard. The DSM will consult with the appropriate technical experts and monitor H2S levels before work resumes.

Notification and Protection Zones

If notifications of H2S presence and protection zones will be made to site workers, visitors, local responders, and/or residents, the procedures described in Section 2 will be followed.

H2S Contingency Plan

If sites are known to have concentrations of H2S and work must continue in that environment, Chevron will implement its H2S Contingency Plan.

A specialized contractor will be brought in to provide training, fit testing and supplied air breathing apparatus or a cascade system. Five minute emergency escape packs will be available on site (attached to the railing on the rig floor (4 on rig floor, 1 on monkey board for derrickman). All personnel working on or visiting a known H2S site will be trained to use, and required to don, a personal monitor set to alarm at 5 ppm.

Employees and visitors to these sites will be provided with an awareness level of H2S training prior to entering any H2S areas. At a minimum, awareness level training will include:

- Physical and chemical properties of H2S
- Health hazards of H2S
- Personal protective equipment
- Information regarding potential sources of H2S
- Alarms and emergency evacuation procedures

7. Flaring

Continuous flaring is not anticipated during normal air drilling operations. During air drilling operations, a flare is maintained onsite and available for contingency to flare off gas for short durations. Chevron does not plan to flare during fluid drilling, completion or flowback activities. See Section 9 for additional detail.

8. Collision Avoidance

1. Plan Components:

Hole Section	Survey Tool	Survey Frequency
Surface (17.5" Hole)	Multi-Shot Gyro	Every 25 feet
Intermediate I (12.25" Hole)	EMWD	Every Joint of Drill Pipe (~31')
Curve & Landing Point (8.5" Hole)	MWD	At least every ~45'
Landing Point to TMD (8.5" Hole)	MWD	At least every ~90'

   a. Nudge activity if necessary will take place in the 12.25" and vertical production hole sections in order to achieve a SF >1.5 during planning
   b. COMPASS software, or a qualified alternate directional software, will be used for directional and anti-collision planning.
   c. General protocol and QA/QC during drilling activities

Drilling Engineer & BP Well Planner	Prior to the commencement of drilling on a pad (multi-well or single well) • Verify convergence calculation between Compass and BP software. • Verify declination calculation between Compass and BP software.

	• Ensure that PU model and survey tools state if the correction is applied for documentation
BP MWD Engineer	• Ensure that the correct Geodetic and Magnetic references are in use on all rig site computers and that calculated values for declination and convergence match those supplied by the BP Well Planner. • Ensure the precise application of directional survey corrections that follow their internal QA/QC process

d. For offset wellbore if any point satisfies either of the following proximity criteria, that wellbore shall be classified as an offset.
   i. C-C distance less than or equal to 100'
   ii. Separation factor is less than or equal to 3.0

2. Plan for proposed wellbore: All wells will be planned with a minimum 1.5 anti-collision safety factor
   a. Required Collision Monitoring

Separation Factor	**Health, Environment, & Safety Risk Offset Wellbore(s)**
SF ≤ 1.5 Collision monitoring rule	Perform collision monitoring
SF ≤ 1.0 Shut-in rule	Shut in (temporarily plug) offset wellbore at least 200 ft (60 m) below deepest MD on offset wellbore where SF ≤ 1 with wellbore projection to TD Depressurize offset wellbore above plug to reference wellbore pressure or less Record wellbore projection Continued drilling requires authorization from Drilling Operations Manager Actions are exempted for relief well
SF ≤ 0.75 Acceptable projection rule	Wellbore projection to TD with minimum SF > 0.5 Continued drilling requires authorization from D&C Manager Actions are exempted for relief well
SF ≤ 0.5 Acceptable drilling limit	Stop drilling, plug back Actions are exempted for relief well

3. Current spacing requirements for well pad surface layout is: 15' between wells and 30' between rows.
4. If suspected collision occurs:
   a. Cease drilling immediately
   b. For air drilling: Pick up off bottom, monitor if a significant increase in the amount of water is produced within the returns (e.g. a well drilling using air encounters an offset well filled with water from the cement displacement) or if a significant increase in the amount of SBM is produced within the returns (e.g. a well drilling using air encounters an offset well filled with SBM from the wells suspension).

c. For fluid drilling: Pick up off bottom and perform flow check. If flow check is positive then shut-in well and determine if well control can be established. If flow check is negative and losses are occurring, monitor and determine rate of losses. Also monitor if a significant change in mud properties has occurred (e.g. a well drilling using SBM encounters an offset well filled with water from the cement displacement).
d. Further actions and decision to continue drilling shall be based upon offset wellbore risk classification and status in association with the appropriate AMBU's drilling authority.
e. If decision is made to cease drilling, the well will be plugged back as necessary.

5. Notification to the OOG Oil and Gas inspector will take place within a reasonable time frame once operations are deemed under control.
6. Local directional drilling standard operating procedures and Chevron Global Technical Standards for Wellbore Positioning & Collision Avoidance can be shared upon request.

9. Deep Well Additional Requirements

Geoprog
See Appendix 3

Casing and Cement
See Appendix 5

Flaring Activities
Chevron does not conduct routine flaring activities during any phase of operation and maintains flaring equipment onsite as a contingency. Chevron will notify the county emergency response operator and/or fire department as soon as possible if a flare occurs or is anticipated to occur.

For air drilling operations, an 8" steel flare line will be available. If excessive gas is encountered during air drilling operations (volume of gas has the potential of exceeding the cuttings separator resulting in gas venting through cuttings line) the gas flow will be routed through the rig choke manifold, the 8" flare line, and the eco-tank to the flare stack. The flare line stack rises vertically 20 ft and is equipped with an electronic, continuously-arcing igniter.

During fluid drilling of Utica / explorations wells, an 8" steel flare line is employed. If significant gas is encountered during fluid drilling operations, it may be routed through the choke manifold, the mud-gas separator and the 8" flare line to the flare stack. The flare line stack rises vertically 20 ft and is equipped with an electronic, continuously-arcing igniter.

Chokes that will be used to regulate gas flow while drilling will be adjustable drilling type chokes. Chokes used shall meet the requirements of American Petroleum Institute (API) Spec 16C – Specification for Choke and Kill Systems.

Special anchoring will not be required for the 8" flare lines because their size will reduce backpressure and pressure spikes and the potential for whipping. Flare stacks will be at least 20' tall and flammable materials will be kept at least 20' away from the base of the flare stack.

Emergency Notification List (1 Mile Radius)
See Appendix 2

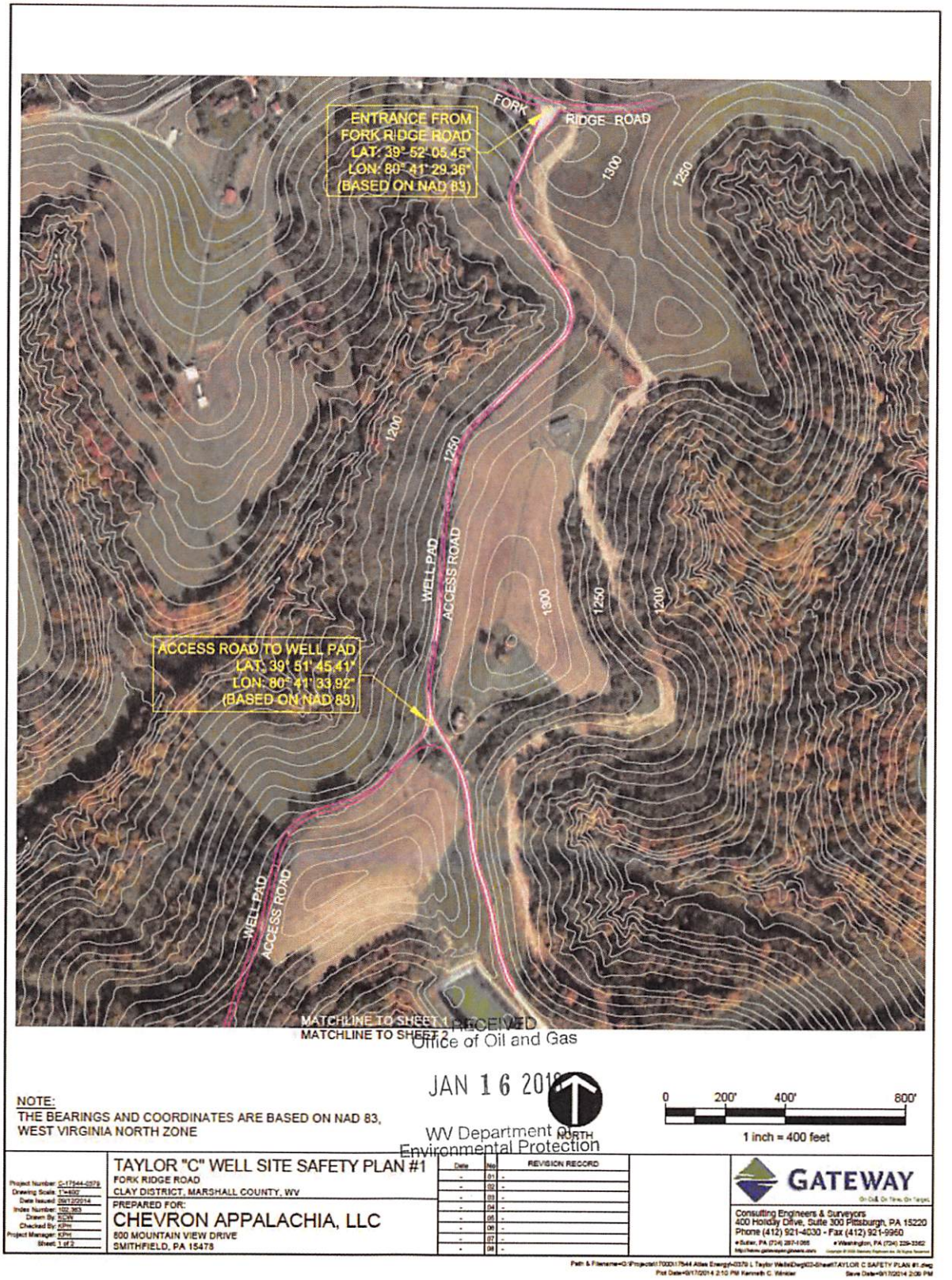
Spider Plot
See Appendix 8

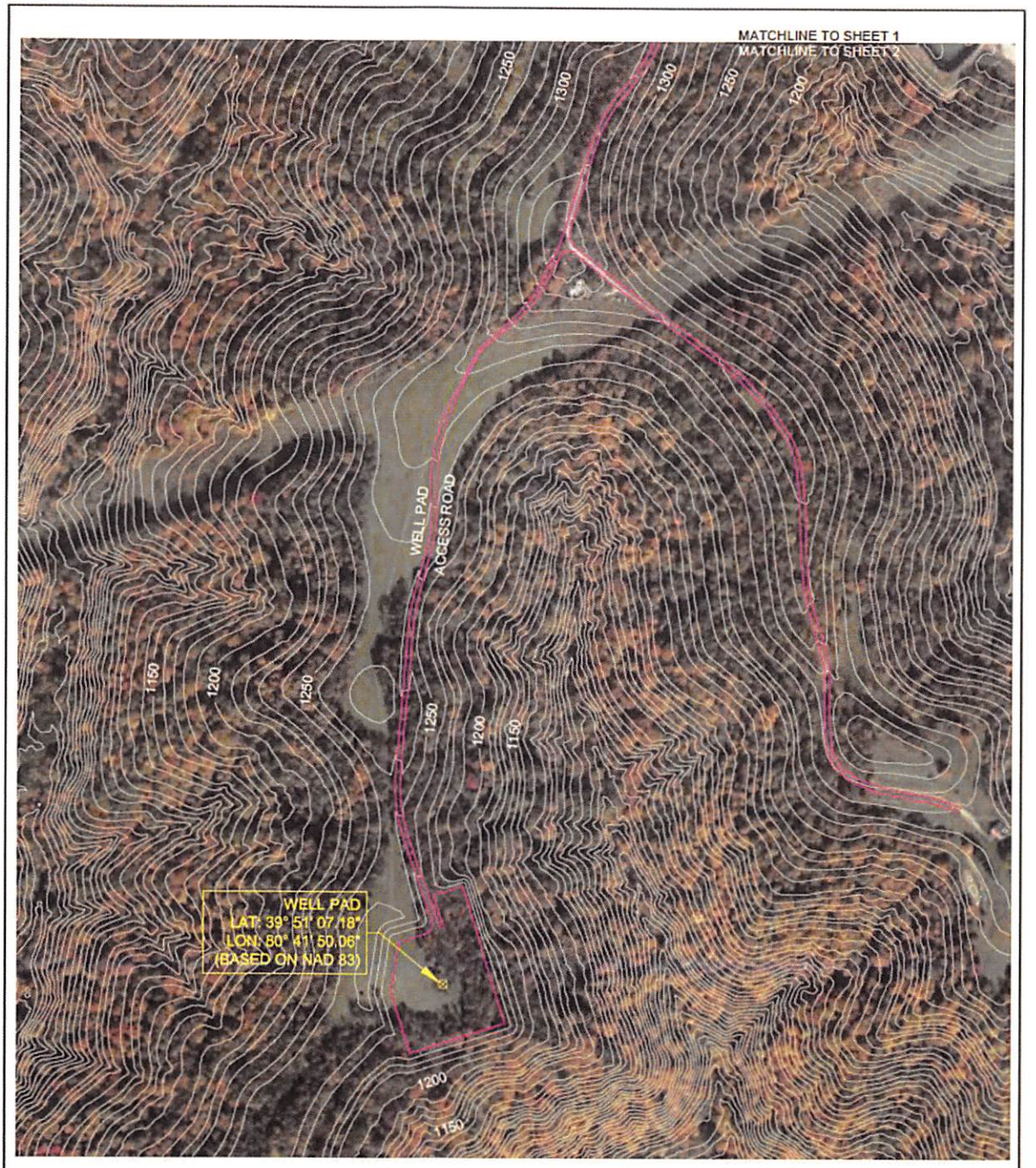
10. Deep Vertical Well Requirements

Chevron does not anticipate drilling deep vertical wells.

11. Appendices

1. Plan View Map of Location





NOTE:
THE BEARINGS AND COORDINATES ARE BASED ON NAD 83, WEST VIRGINIA NORTH ZONE

NORTH

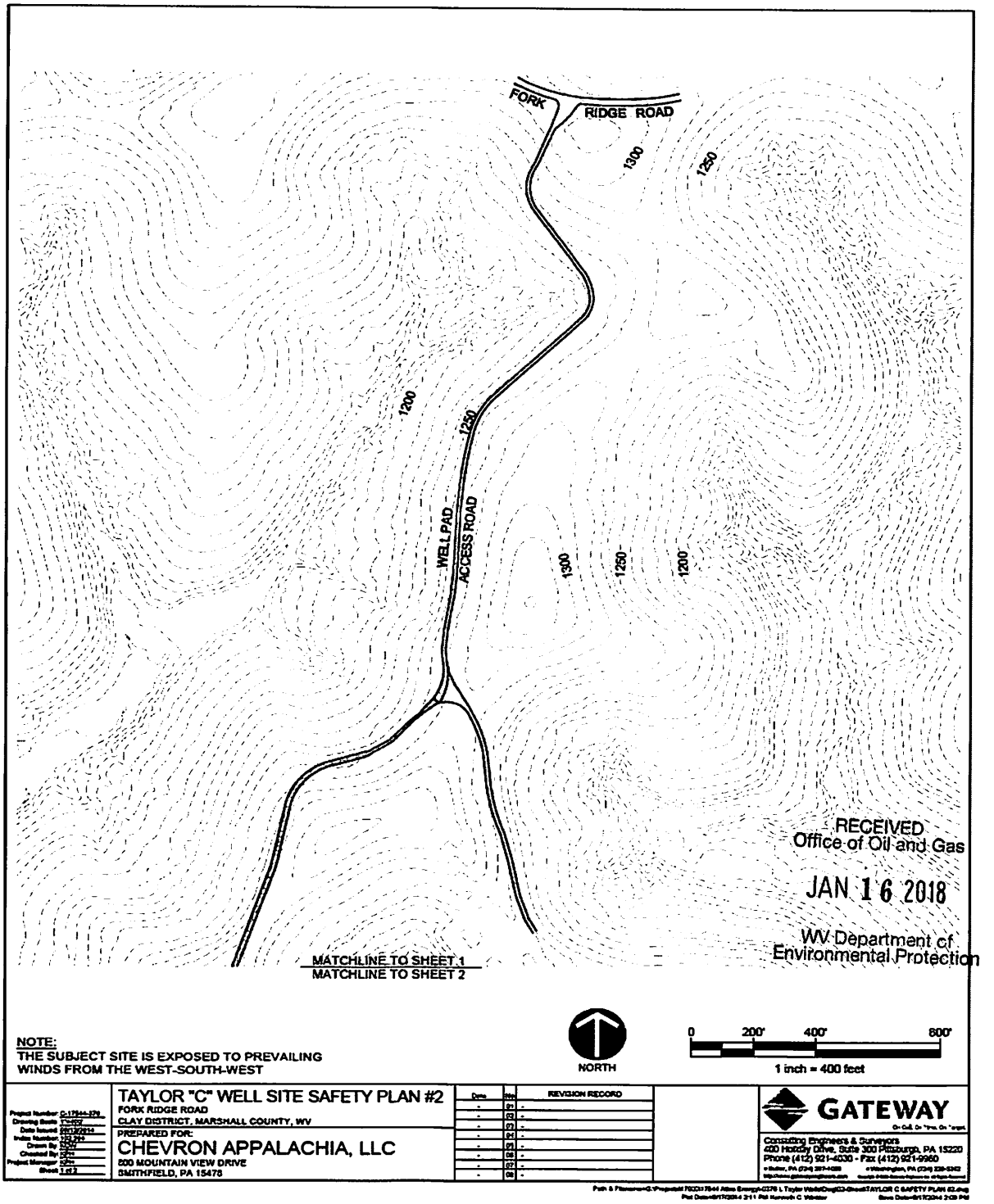
0 200' 400' 600'

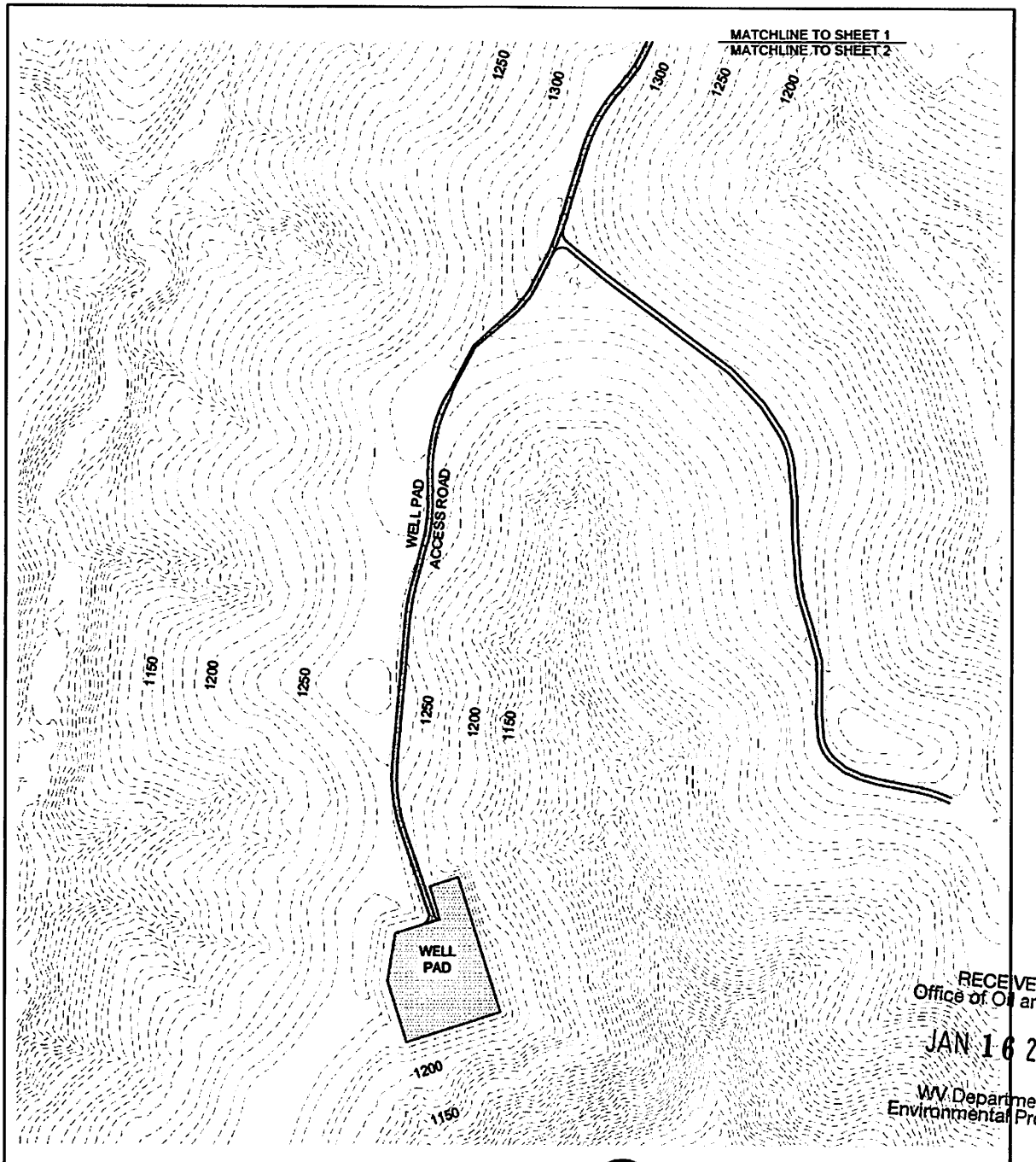
1 inch = 400 feet

Project Number: O-17544-0579 Drawing Scale: 1"=400' Date Issued: 09/12/2014 Index Number: 102.363 Drawn By: KDW Checked By: KPH Project Manager: KPH Sheet: 2 of 2	TAYLOR "C" WELL SITE SAFETY PLAN #1 FORK RIDGE ROAD CLAY DISTRICT, MARSHALL COUNTY, WV PREPARED FOR: CHEVRON APPALACHIA, LLC 800 MOUNTAIN VIEW DRIVE SMITHFIELD, PA 15478	Date / No. / REVISION RECORD - 01 - - 02 - - 03 - - 04 - - 05 - - 06 - - 07 - - 08 -	GATEWAY Consulting Engineers & Surveyors 400 Holiday Drive, Suite 300 Pittsburgh, PA 15220 Phone (412) 921-4030 - Fax (412) 921-9960 Butler, PA (724) 287-1285 Washington, PA (724) 229-3362

Path & Filename: G:\Projects\17000\17544 Atlas Energy\0579 L Taylor Wells\Dwg\02-Sheet\TAYLOR C SAFETY PLAN #1.dwg
Plot Date: 9/17/2014 2:10 PM Kenneth C Winster Save Date: 9/17/2014 2:09 PM

2. Topographic Map and Emergency Notification List (1 mile radius)





NOTE:
THE SUBJECT SITE IS EXPOSED TO PREVAILING WINDS FROM THE WEST-SOUTH-WEST

TAYLOR "C" WELL SITE SAFETY PLAN #2
FORK RIDGE ROAD
CLAY DISTRICT, MARSHALL COUNTY, WV

PREPARED FOR:
CHEVRON APPALACHIA, LLC
800 MOUNTAIN VIEW DRIVE
SMITHFIELD, PA 15478

Date	No.	REVISION RECORD
-	01	-
-	02	-
-	03	-
-	04	-
-	05	-
-	06	-
-	07	-
-	08	-

GATEWAY
Consulting Engineers & Surveyors
400 Holiday Drive, Suite 300 Pittsburgh, PA 15220
Phone (412) 921-4030 - Fax (412) 921-3960

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JAN 16 2018
WV Department of
Environmental Protection

Taylor C Well Site, Moundsville, Marshall County, WV								
ID#	PID	OWNER	ADDRESS	CITY	STATE	ZIP	Area	Phone1
0	03-0012-0001-0000-0000	KUHN PHILIP L EST - LIFE	1440 SAWMILL LN	GLEN EASTON	WV	26039	304	845-2759
1	03-0012-0002-0000-0000	KUHN PHILIP L EST - LIFE	1440 SAWMILL LN	GLEN EASTON	WV	26039	304	845-2759
2	03-0012-0002-0001-0000	KUHN HUBERT & ANDREA	1293 SAWMILL LN	GLEN EASTON	WV	26039	304	845-7971
3	03-0012-0003-0000-0000	KUHN HUBERT & ANDREA	1293 SAWMILL LN	GLEN EASTON	WV	26039	304	845-7971
4	03-0012-0003-0002-0000	HARDMAN MARY T	PO BOX 6799	WHEELING	WV	26003	304	232-1802
5	03-0012-0004-0000-0000	BUNGARD JOHN A	201 BUNGARD DR	GLEN EASTON	WV	26039	304	845-8048
6	03-0012-0004-0003-0000	WELLS ROGER DALE ET AL	1024 SAWMILL LN	GLEN EASTON	WV	26039	304	845-3001
7	03-0012-0004-0005-0000	WELLS ROGER DALE ET AL	1024 SAWMILL LN	GLEN EASTON	WV	26039	304	845-3001
8	04-0009-0013-0000-0000	ASTON LEWIS A JR ET UX	22 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	843-1399
9	04-0009-0014-0000-0000	STANDIFORD WILLIAM R & LINDA L	5211 FORK RIDGE RD	MOUNDSVILLE	WV	26041	304	845-4703
10	04-0009-0016-0000-0000	ASTON LEWIS A JR ET UX	22 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	843-1399
11	04-0009-0017-0002-0000	STANDIFORD WILLIAM R ET UX	5211 FORK RIDGE RD	MOUNDSVILLE	WV	26041	304	845-4703
12	04-0009-0019-0000-0000	FLETCHER H NELSON ET UX - LIFE	5552 FORK RIDGE RD	MOUNDSVILLE	WV	26041	304	845-1937
13	04-0009-0020-0000-0000	RULONG JAMES D C/O CLARENCE RULONG	5832 FORK RIDGE RD	MOUNDSVILLE	WV	26041	304	845-4577
14	04-0009-0022-0000-0000	RULONG JAMES D	5832 FORK RIDGE RD	MOUNDSVILLE	WV	26041	304	845-4577
15	04-0009-0023-0000-0000	ASTON LEWIS A JR ET UX	22 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	843-1399
16	04-0009-0023-0003-0000	STANDIFORD WILLIAM R ET UX	5211 FORK RIDGE RD	MOUNDSVILLE	WV	26041	304	845-4703
17	04-0009-0023-0005-0000	MCCRACKEN KENNETH L ET UX	32 S HIGHLAND AVE	MOUNDSVILLE	WV	26041	304	845-7770
18	04-0009-0023-0008-0000	STANDIFORD WILLIAM ROGER ET UX	5211 FORK RIDGE RD	MOUNDSVILLE	WV	26041	304	845-4703
19	04-0009-0027-0000-0000	TAYLOR LEE R ET UX	309 MORTON AVE	MOUNDSVILLE	WV	26041	304	845-3315
20	04-0010-0001-0000-0000	MOUNDSVILLE CITY OF	SIXTH STREET	MOUNDSVILLE	WV	26041	304	845-6300
21	04-0010-0003-0000-0000	COSTER EDWARD B ET UX ESTS-LIFE C/O COSTER JAMES	659 ASTON RIDGE RD	MOUNDSVILLE	PA	26041	304	845-8539
22	04-0010-0004-0000-0000	WINGROVE DENNIS D ET UX	719 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-5113
23	04-0010-0004-0001-0000	LILLEY RONALD K SR ET UX	448 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-1176
24	04-0010-0004-0002-0000	LILLEY RONALD K SR ET UX	448 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-1176
25	04-0010-0004-0003-0000	WINGROVE DENNIS D ET UX	719 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-5113
26	04-0010-0006-0000-0000	ASTON LEWIS A JR ET UX	22 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	843-1399
27	04-0010-0006-0001-0000	HOWARD GEORGE K ET UX	293 EASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-7886
28	04-0010-0007-0000-0000	GOULDSBERRY JOSEPH W ET UX	91 BOTTOM LN	MOUNDSVILLE	WV	26041	304	845-6517
29	04-0010-0007-0001-0000	EMERY CHARLES EDWARD	872 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-8047
30	04-0010-0007-0002-0000	EMERY CHARLES E & DEBBY	872 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-8047
31	04-0010-0007-0003-0000	EMERY CHARLES E & DEBBY	872 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-8047
32	04-0010-0008-0000-0000	WINGROVE DENNIS D ET UX	719 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-5113
33	04-0010-0009-0000-0000	CLARK ROY A ET UX	73 LINDEN AVE	MOUNDSVILLE	WV	26041	304	845-8834
34	04-0010-0010-0000-0000	STOUT JAMES	1460 ASTON RD	MOUNDSVILLE	WV	26041	304	843-1397
35	04-0010-0011-0000-0000	GOULDSBERRY JOSEPH W ET UX	91 BOTTOM LN	MOUNDSVILLE	WV	26041	304	845-6517
36	04-0010-0012-0000-0000	EMERY JOSEPH S ET UX	42 MULBERRY AVE	MOUNDSVILLE	WV	26041	304	845-6027
37	04-0010-0012-0001-0000	WEST DEVRON L ET UX	2546 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-3939
38	04-0010-0013-0000-0000	WEST DEVRON LEE & TRACIE JANE	2546 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-3939
39	04-0010-0013-0001-0000	WEST DEVRON LEE ET UX	2546 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-3939
40	04-0010-0013-0002-0000	EMERY JOSEPH S ET UX	42 MULBERRY AVE	MOUNDSVILLE	WV	26041	304	845-6027
41	04-0010-0014-0000-0000	SULLIVAN ROBERT MORRIS	1342 FIRST ST	MOUNDSVILLE	WV	26041		
42	04-0010-0015-0000-0000	SULLIVAN ROBERT MORRIS	1342 FIRST ST	MOUNDSVILLE	WV	26041		
43	04-0010-0016-0000-0000	CONNER DAVID SHAWN	67 N HIGHLAND AVE	MOUNDSVILLE	WV	26041	304	845-0512
44	04-0010-0017-0000-0000	CONSOLIDATION COAL COMPANY	1000 CONSOL ENERGY DR	CANONSBURG	PA	15317	724	485-4000
45	04-0010-0019-0000-0000	MCCARTHY BRENDAN J & JOSEPH E BOJALAD III	FORK RIDGE (REAR)	MOUNDSVILLE	WV	26041	412	301-0815
46	04-0010-0019-0001-0000	WILSON CARY & TRUDY J	845 SPOON LN	MOUNDSVILLE	WV	26041	304	845-7062
47	04-0010-0019-0002-0000	WILSON CARY & TRUDY J	845 SPOON LN	MOUNDSVILLE	WV	26041	304	845-7062
48	04-0010-0020-0000-0000	TAYLOR LEE R ET UX	309 MORTON AVE	MOUNDSVILLE	WV	26041	304	845-3315
49	04-0010-0021-0000-0000	TAYLOR LEE R ET UX	309 MORTON AVE	MOUNDSVILLE	WV	26041	304	845-3315
50	04-0010-0022-0000-0000	SULLIVAN ROBERT MORRIS	1342 FIRST ST	MOUNDSVILLE	WV	26041		
51	04-0010-0023-0000-0000	CONSOLIDATION COAL COMPANY	1000 CONSOL ENERGY DR	CANONSBURG	PA	15317	724	485-4000
52	04-0011-0003-0000-0000	ROUSH HARRY F ET UX	52 ROSBY ROAD DR	MOUNDSVILLE	WV	26041	304	845-6094
53	04-0011-0004-0000-0000	ROUSH HARRY F	52 ROSBY ROAD DR	MOUNDSVILLE	WV	26041	304	845-6094
54	04-0011-0005-0000-0000	ROUSH HARRY F ET UX	52 ROSBY ROAD DR	MOUNDSVILLE	WV	26041	304	845-6094
55	04-0011-0006-0000-0000	ROUSH HARRY F ET UX	52 ROSBY ROAD DR	MOUNDSVILLE	WV	26041	304	845-6094
56	04-0011-0007-0000-0000	HOWARD JEREMY & JOSIAH	1887 ASTON RIDGE RD	MOUNDSVILLE	WV	26041		
57	04-0011-0007-0001-0000	BABOUL GEORGE III & HEATHER A	1911 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	740	526-0943

58	04-0011-0008-0000-0000	CLARK ROY A ET UX	1621 ASTON RIDGE RD	MOUNDSVILLE	WV	26041		
59	04-0011-0008-0001-0000	MAINS LESLIE	731 BOLSTERS MILLS RD	OXFORD	ME	04270		
60	04-0011-0008-0002-0000	STOUT JAMES	1460 ASTON RD	MOUNDSVILLE	WV	26041	304	843-1397
61	04-0011-0008-0003-0000	STOUT JAMES	1460 ASTON RD	MOUNDSVILLE	WV	26041	304	843-1397
62	04-0011-0008-0004-0000	DAVIS MARGARET C/O MOORE MARGARET L	1580 ASTON RIDGE RD	MOUNDSVILLE	WV	26041		
63	04-0011-0008-0005-0000	STANDIFORD WILLIAM R II ET UX	1606 ASTON RIDGE RD	MOUNDSVILLE	WV	26041		
64	04-0011-0008-0006-0000	STOUT JAMES	1460 ASTON RD	MOUNDSVILLE	WV	26041	304	843-1397
65	04-0011-0009-0000-0000	SULLIVAN ROBERT MORRIS	1342 FIRST ST	MOUNDSVILLE	WV	26041		
66	04-0011-0010-0000-0000	SULLIVAN ROBERT MORRIS	1342 FIRST ST	MOUNDSVILLE	WV	26041		
67	04-0011-0011-0000-0000	LITMAN FLOYD MILTON C/O LITMAN STEVEN K	PO BOX 723	MOUNDSVILLE	WV	26041		
68	04-0011-0011-0001-0000	WOOD CHARLES M ET UX	79 BOULDER RD	MOUNDSVILLE	WV	26041	304	843-0328
69	04-0011-0011-0002-0000	LITMAN FLOYD MILTON ET AL	PO BOX 723	MOUNDSVILLE	WV	26041		
70	04-0011-0011-0003-0000	WOOD WILLIAM T ET UX - LIFE WOOD WILLIAM S & DANIEL J WOOD	1210 NINTH ST	MOUNDSVILLE	WV	26041	304	843-1747
71	04-0011-0011-0004-0000	GUMP CLARK T	1035 ROSBY ROCK DR	MOUNDSVILLE	WV	26041	304	843-1161
72	04-0011-0011-0005-0000	WOOD ANGELA R	33 BOULDER RD	MOUNDSVILLE	WV	26041		
73	04-0011-0013-0000-0000	SEDOSKY DOROTHY DAKAN	240 CURTIS AVE	MOUNDSVILLE	WV	26041	304	843-2701
74	04-0011-0014-0000-0000	WEST DEVRON LEE ET UX	2546 ASTON RIDGE RD	MOUNDSVILLE	WV	26041		
75	04-0011-0015-0000-0000	WEST DEVRON LEE ET UX	2546 ASTON RIDGE RD	MOUNDSVILLE	WV	26041		
76	04-0011-0016-0000-0000	WEST DEVRON ET UX	2546 ASTON RIDGE RD	MOUNDSVILLE	WV	26041		
77	04-0011-0017-0000-0000	WEST DEVRON ET UX	2546 ASTON RIDGE RD	MOUNDSVILLE	WV	26041		
78	04-0011-0018-0000-0000	WEST DEVRON L & TRACIE J	2546 ASTON RIDGE RD	MOUNDSVILLE	WV	26041		
79	04-0011-0019-0000-0000	CONNER GLEN WILLIAM ET AL	2619 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-6194
80	04-0011-0020-0000-0000	YOHO LARRY E ET UX	2611 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	843-1619
81	04-0011-0021-0000-0000	YOHO LARRY E ET UX - G E YOHO	2611 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	843-1619
82	04-0011-0028-0000-0000	WEST DEVRON L & TRACIE J	2546 ASTON RIDGE RD	MOUNDSVILLE	WV	26041		
83	04-0011-0029-0000-0000	HENRY CHARLES M ET UX	634 ROSBY ROCK RD	MOUNDSVILLE	WV	26041		
84	04-0011-0030-0000-0000	SEDOSKY DOROTHY	240 CURTIS AVE	MOUNDSVILLE	WV	26041	304	843-2701
85	04-0011-0031-0000-0000	OTT FRANKLIN L ET UX	716 ROSBY ROCK DR	MOUNDSVILLE	WV	26041	304	845-6116
86	04-0011-0032-0000-0000	OTT FRANKLIN L ET UX	716 ROSBY ROCK DR	MOUNDSVILLE	WV	26041	304	845-6116
87	04-0011-0033-0000-0000	WAYSON MAXINE SEDOSKY	300 WILLIAM ST	CAMDEN WYOMING	DE	19934		
88	04-0011-0034-0000-0000	SEDOSKY DOROTHY DAKAN	240 CURTIS AVE	MOUNDSVILLE	WV	26041	304	843-2701
89	04-0011-0034-0001-0000	SEDOSKY DOROTHY DAKAN	240 CURTIS AVE	MOUNDSVILLE	WV	26041	304	843-2701
90	04-0011-0035-0000-0000	OLIVER GOLDIE M	2724 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	843-5907
91	04-0011-0036-0000-0000	OLIVER GOLDIE M	2724 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	843-5907
92	04-0011-0037-0000-0000	OLIVER GOLDIE M	2724 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	843-5907
93	04-0011-0049-0000-0000	SEDOSKY DOROTHY DAKAN	240 CURTIS AVE	MOUNDSVILLE	WV	26041	304	843-2701
94	04-0011-0051-0000-0000	CONNER GLEN W ET UX	2619 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	843-6194
95	04-0011-0059-0000-0000	CONSOLIDATION COAL COMPANY C/O MURRAY ENERGY	46226 NATIONAL RD	SAINT CLAIRSVILLE	OH	43950	740	338-3100
96	09-0001-0005-0000-0000	CONSOLIDATION COAL COMPANY C/O MURRAY ENERGY	46226 NATIONAL RD	SAINT CLAIRSVILLE	OH	43950	740	338-3100
97	09-0001-0006-0000-0000	UNKNOWN	UNKNOWN	MOUNDSVILLE	WV	26041		
98	09-0001-0007-0000-0000	UNKNOWN	UNKNOWN	MOUNDSVILLE	WV	26041		
99	09-0001-0008-0000-0000	BOGGS DEBORRAH E	71 CANYON CREEK DR	MOUNDSVILLE	WV	26041		
100	09-0001-0008-0001-0000	BOGGS DEBORRAH E	71 CANYON CREEK DR	MOUNDSVILLE	WV	26041		
101	09-0001-0008-0002-0000	BOGGS DEBORRAH E	71 CANYON CREEK DR	MOUNDSVILLE	WV	26041		
102	09-0001-0009-0000-0000	MAJEWSKI JEREMY A & NICOLE M	BOX 129 ROSBY ROCK	MOUNDSVILLE	WV	26041	304	845-9331
103	09-0001-0010-0000-0000	CROW JAMES EARL EST C/O CROW JAMES B	187 CANYON CREEK DR	MOUNDSVILLE	WV	26041	304	845-5234
104	09-0001-0010-0001-0000	CROW JAMES EARL EST C/O CROW JAMES B	187 CANYON CREEK DR	MOUNDSVILLE	WV	26041	304	845-5234
105	09-0001-0012-0000-0000	CLARK ROBERT L ET AL C/O MORRIS KEVIN	RD 2 BOX 128	MOUNDSVILLE	WV	26041		
106	09-0002-0001-0000-0000	CROW CLARA I	634 LONE WOLF LN	MOUNDSVILLE	WV	26041	304	845-3780
107	09-0002-0002-0000-0000	CROW HAROLD ET UX	245 CANYON CREEK DR	MOUNDSVILLE	WV	26041	304	845-0788
108	09-0002-0002-0001-0000	CROW JAMES EARL EST C/O CROW JAMES B	187 CANYON CREEK DR	MOUNDSVILLE	WV	26041	304	845-5234
109	09-0002-0002-0002-0000	CROW HAROLD B & CONNIE S	245 CANYON CREEK DR	MOUNDSVILLE	WV	26041	304	845-0788
110	09-0002-0002-0003-0000	CROW HAROLD B & CONNIE S	245 CANYON CREEK DR	MOUNDSVILLE	WV	26041	304	845-0788
111	09-0002-0002-0004-0000	CROW JAMES EARL EST C/O CROW GREG	231 CANYON CREEK DR	MOUNDSVILLE	WV	26041		
112	09-0002-0002-0005-0000	WOOD MARCUS L ET UX	249 CANYON CREEK DR	MOUNDSVILLE	WV	26041		

113	09-0002-0003-0000-0000	CNX LAND RESOURCES INC	1000 CONSOL ENERGY DR	CANONSBURG	PA	15317	724	485-4000
114	09-0002-0004-0000-0000	CONKLE LAWRENCE & SHIRLEY ESTS C/O CONKLE ROY	75 ARLINGTON AVE	MOUNDSVILLE	WV	26041	304	845-1808
115	09-0002-0005-0000-0000	WEST TRACIE L ET AL	2546 ASTON RIDGE RD	MOUNDSVILLE	WV	26041	304	845-3939

ID - corresponds with Map ID shown on Figure X included with SSP

DISCLAIMER: This list was compiled using publicly available sources, including tax parcel ownership information and internet phone number and reverse lookup databases. While all reasonable efforts were used to ensure that the list is complete and accurate as of the date submitted, Chevron does not warrant the completeness or accuracy of the list and disclaims all liability for its use. In the event of an emergency situation that requires notification or evacuation of local residents, Chevron will coordinate with local emergency responders as provided in the well site safety plan.

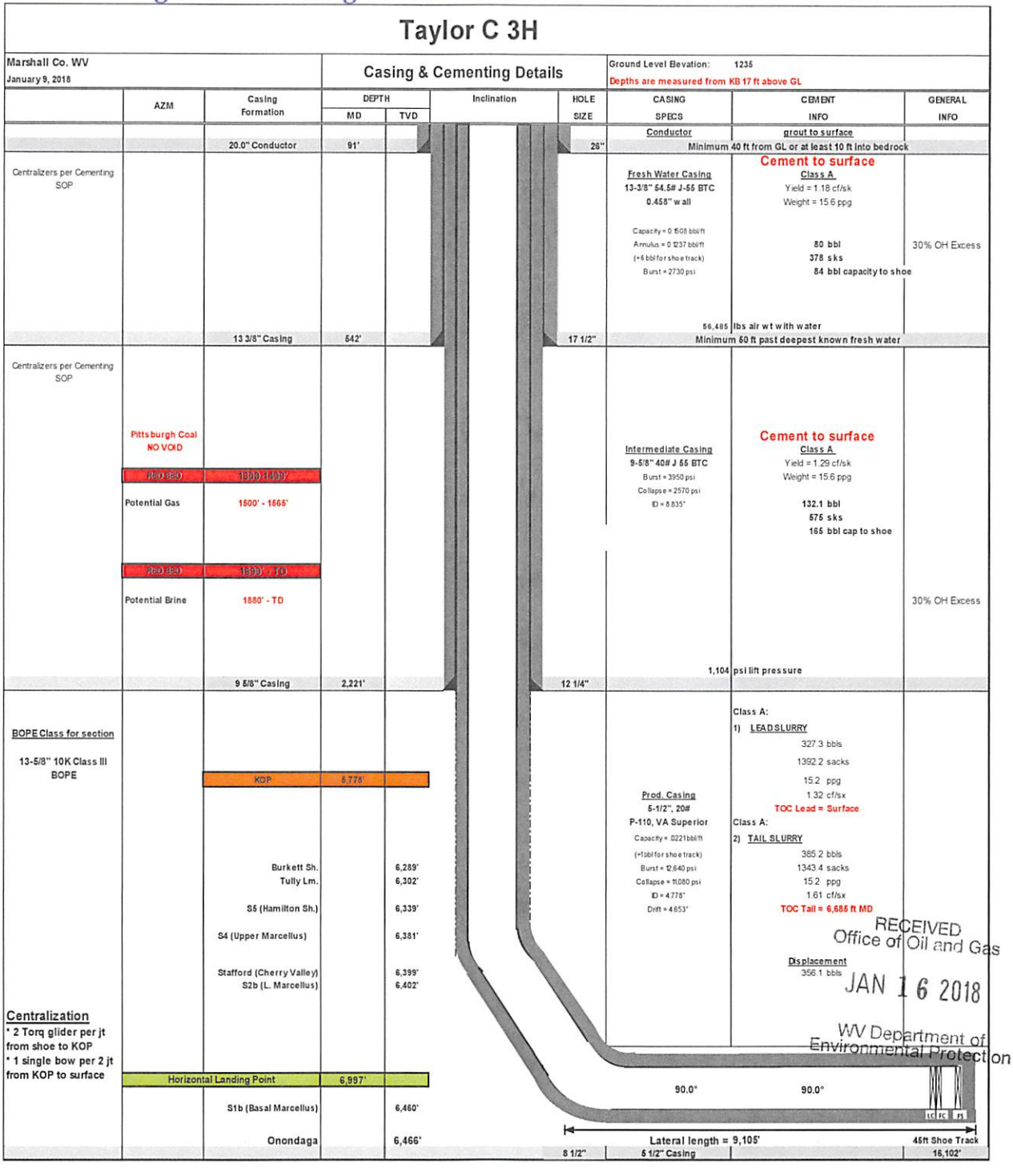
3. Geoprog

L. Taylor Pad (Taylor C)						
	Fm Top/Casing	Pre-Drill Depths				Shallow Hazards/Comments
		Sea Level	GL	Air KB	Fluid KB	
	Surface	1235	0	17	25	
	Conductor	1178	57	74	82	Conductor set 57' below surface
	Dunkard Formation Base	760	475	492	500	The Dunkard Grp. Is bedrock to the top of the Waynesburgh Coal. This is where the freshwater resides in WV. Below the Dunkard Grp it is more likely to be brine rather than fresh water.
	Waynesburgh Coal Top/Monongahela Grp Top	760	475	492	500	The Waynesburg Coal depth was determined by using Francis Waynesburg coal depth (715'Sub Sea) as an offset, then it was deepened by 15' based on contour maps. There is a 15' structural deepening in formation tops from the Francis pad to the Taylor C pad. The Waynesburg coal is roughly 6" thick.
	Water String	710	525	542	550	2" water stream 619-648'MD Francis pad (=596-625' TVDKB air on Taylor C) Deepest known FW at 765' SS (470'GL) based on deepest water well within 1 mile radius.
	Pittsburgh Coal Top	435	800	817	825	-Pittsburg Coal prog'd from Coal Contour map (WVGES) -Pittsburg Coal indicated ~816'MD on Francis mudlog = 808' TVDKB (air) on Taylor C pad (~793'+15' structural dip). On Taylor C 8H mudlog, the Pcoal is in a thick limestone bed**
	Pittsburgh Coal Base/Monogahela	430	806	823	831	Closest well is 136' from Ireland coal mine, solid coal is expected. NO VOID
Drilling on air down to the 9-5/8" casing point	Conemaugh Group Top and Base	430	806	823	831	Potential redbeds up to 150' below seam 970-1250' KBTVD. Redbeds seen on Berger 7H in Conemaugh group (seen at 1,125-1,150'MD on Berger)
		-9	1244	1261	1269	Potential brine @ 1276 KBTVD; encountered on Francis offset
		-33	1268	1285	1293	Potential redbeds @ 1300-1490' KBTVD. Encountered on Francis
		-54	1289	1306	1314	There is a pretty distinctive SS bed @1230'KBTVD-1280'KBTVD.
	Allegheny Formation Top and Base	-54	1289	1306	1314	On Taylor C 8H mudlog the Allegheny Fm is mostly siltstone with some limestone in the silts. There are some traces of redrock. There is a pretty distinctive limestone bed @ 1410'KBTVD-1435'KBTVD. The Clarion coal (in West Virginia) marks the base of the Allegheny Fm. There is coal on the mudlog but we did not have the Clarion coal labeled
		-264	1499	1516	1524	
	Pottsville Group/Salt Sands Top and Base	-264	1499	1516	1524	Kick on Berger 7H (6,101units) occurred in the Salt Sands@ 1545-1565'KBTVD in Berger depth.
		-504	1739	1756	1764	
	Mauch Chunk Group Top and Base	-504	1739	1756	1764	Potential redbeds @ 1690-2460' KBTVD. Encountered on Francis
		-611	1846	1863	1871	
Drilling on syn fluid to TD		-611	1846	1863	1871	
	Big Lime Top and Base	-613	1848	1865	1873	Potential brine @1880-2370' KBTVD; encountered on Francis 1H and encountered water at a rate of 25 bbls/hr on Francis 13H
		-699	1934	1951	1959	
	Burgoon Top and Base	-699	1934	1951	1959	Potential H20 or gas at Burgoon. Gas flare on Francis at top of Burgoon. Flared for roughly 30 mins for 14' MD drilling
		-919	2154	2171	2179	
	Squaw Top	-919	2154	2171	2179	
	Coal/Intermediate	-969	2204	2221	2229	Set Intermediate Casing 50' below top of Squaw formation
	Squaw Base	-1044	2279	2296	2304	
	Weir Top and Base	-1044	2279	2296	2304	Encountered abundant water (rate of 45 bbls/hr) on Francis somewhere within the Squaw/Weir transition
		-1244	2479	2496	2504	
	Berea Top and Base	-1258	2493	2510	2518	
		-1274	2509	2526	2534	
	RED BEDS	-1303	2538	2555	2563	Potential redbeds @ 2570-2810' KBTVD on Francis 1V
	RED BEDS	-1318	2553	2570	2585	Potential redbeds @ 2582-2802' KBTVD on Francis 13H
	Gordon Top and Base	-1504	2739	2756	2764	
		-1584	2819	2836	2844	
	RED BEDS	-1783	3018	3035	3043	Potential redbeds @ 3050-3380' KBTVD on Francis 1V
	Upper Bayard Top and Base	-1857	3092	3109	3117	Pore pressure gradient 0.65 psi/ft from SYCM to TD
		-1889	3124	3141	3149	Possible gas to TD from MDLX to TD
	Rhinestreet Top and Base	-4664	5899	5916	5924	
		-4961	6196	6213	6221	
	Sycamore Grit	-4961	6196	6213	6221	
	Middlesex	-5056	6291	6308	6316	

Burkett	-5132	6367	6384	6392	
Tully	-5152	6387	6404	6412	
S5	-5186	6421	6438	6446	
S3	-5254	6489	6506	6514	
Stafford (Cval)	-5285	6518	6535	6543	
S2B (Lower Marcellus)	-5285	6520	6537	6545	
S2A	-5294	6529	6546	6554	
Purcell	-5307	6542	6559	6567	
S1B (Basal Marcellus)	-5310	6545	6562	6570	
Onondaga	-5315	6550	6567	6575	
Huntersville	0	1235	1252	1260	
TD					

4. Well Bore Diagram &

5. Casing and Cementing Information



Rig KB-GL = 32.0

40" csg ID = 19.25
Wall Thichness 0.375

Conductor cmt= -198.5 bbl

446.6434167 cu ft
Deepest Acquifer 165

13-3/8" csg ID = 12.62
13-3/8" ST lgt= 44.0
Wall Thichness 0.458
Depth = 991

Top of Coal mine: 834
if no mine:
normal cement job
30% excess:

132 bbl
575 sks

2363

13-3/8" csg ID = 8.84
13-3/8" ST lgt= 40.0
Wall Thichness 0.395
Depth = 991

#REF! cu ft

Berea 2602
9-5/8" csg ID = 8.835
9-5/8" ST lgt= 45.0
Wall Thichness 0.395
Planned shoe py= 2600
Depth = 2602

741.6425663 cu ft

General cement calculations:
O.H. excess = 10%
Cement to surface
1 bbl shoe track
TOC Tail 200' above Marcellus
Surface casing is 8-5/8" 28#

Cement Slurries

1) VARICEM ™

#REF! ~~bbls (estm'd)~~
~~0.0~~ ~~bbls (extra)~~
#REF! ~~bbls (Total)~~
#REF! ~~sx~~
~~14.2~~ ~~ppg~~
~~1.32~~ ~~cf/sx~~

Lead Length:
0'
(Surface to 2000' MD)

Planned top of Lead Slurry	**0**	**ft TVD**
TOC Lead	**0**	ft MD
8-5/8", 28# casing shoe	0	ft
Planned TD	16102	ft
Top Marcellus	TBD while drilling	ft
~~VariCem Slurry~~		
~~Lead Slurry CH length =~~	**0**	**ft**
~~Lead Slurry CH volume =~~	#REF!	**bbl**
~~Lead Slurry CH volume =~~	#REF!	**sacks**

5-1/2" csg ID = 4.778

4000.784689 cu ft

Lead Slurry

Slurry OH length =	6685.0	ft
Slurry OH volume =	327.3	bbl
Slurry COH volume =	0.0	bbl
Slurry Volume =	**327.3**	**bbl**
Slurry Volume =	**1392.2**	**sacks**

20% excess

Planned top of Tail Slurry	**6181**	**ft TVD**
TOC Tail =	**6685.0**	ft MD
Tail slurry length =	9417.0	ft
Tail Slurry Volume =	**385.2**	**bbl**
Tail Slurry Volume =	**1343.4**	**sacks**
Disp Vol to Ball seat =	**355.1**	**bbl**
Displacement Vol to FC =	**356.1**	**bbl**

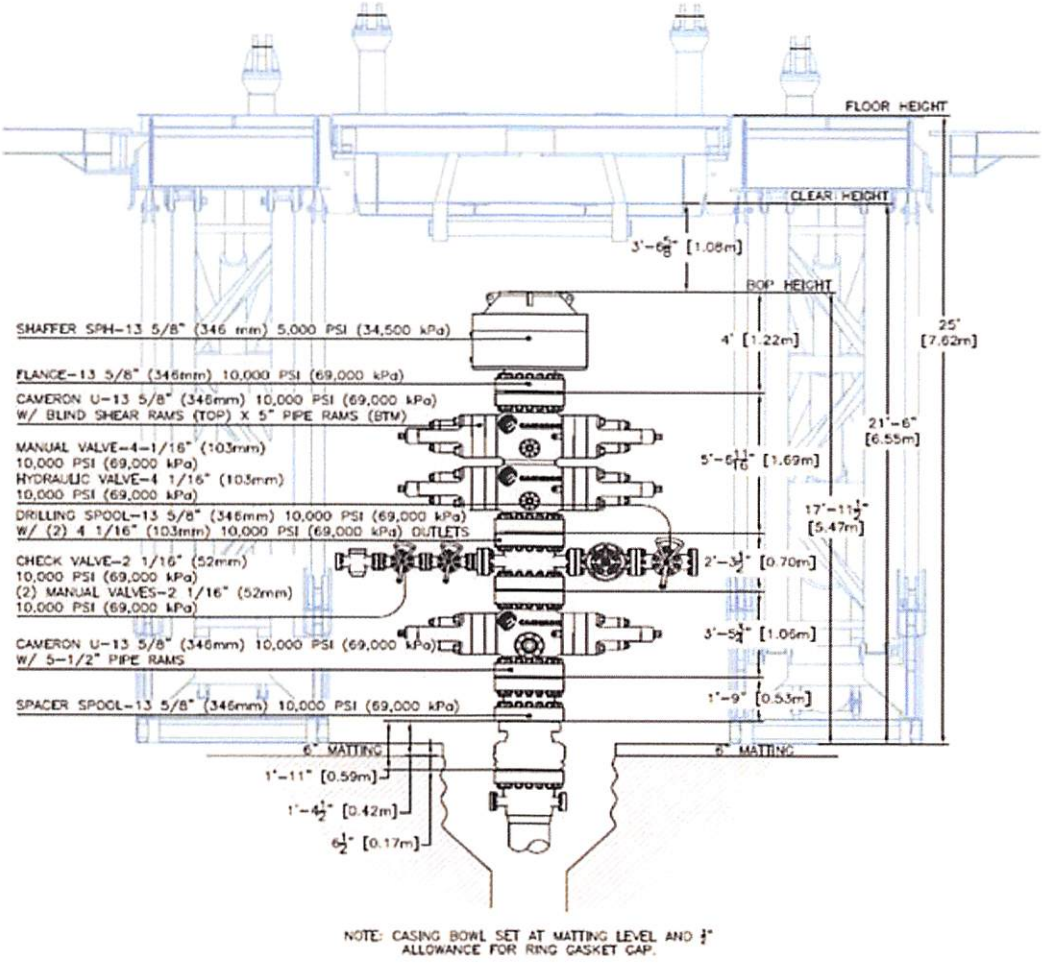
% excess
5-1/2" csg ID = 4.778
5-1/2" ST lgt= 45.0
5-1/2" Ball seat lgt= 92.00
Wall Thichness 0.361

Hydrostatic Pressure due to cement placement:

Due to Varicem:	**0.0**	**psi**
Due to SuperCBL:	4885.5	**psi**
Due to Fracem:	-4885.5	**psi**
Total press on bttm =	**0.0**	**psi**
Inside csg hyd w/ SW=	2677.4	**psi**
Eff U-tube press =	-2677.4	**psi**
	8839.6	

6. BOP Schematic

BOP LAYOUT **RIG 560ST**



NOTE: CASING BOWL SET AT MATTING LEVEL AND ¾" ALLOWANCE FOR RING GASKET GAP.

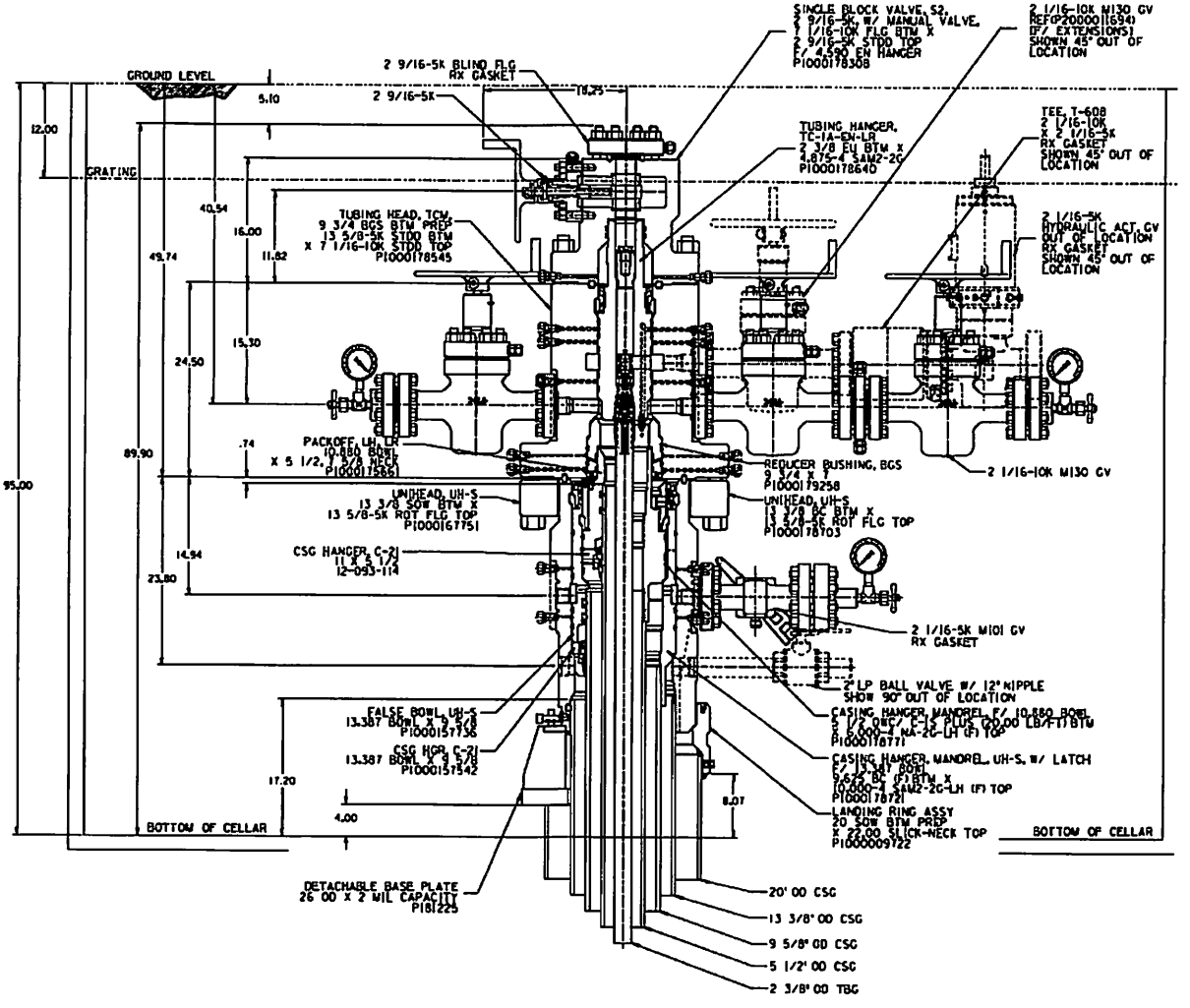
STACK COMPONENTS REPRESENTED ARE SUBJECT TO AVAILABILITY, PLEASE CONFIRM WITH WELL CONTROL DEPARTMENT MANAGER.

EQUIPMENT REPRESENTATION ONLY
NOT DRAWN TO SCALE

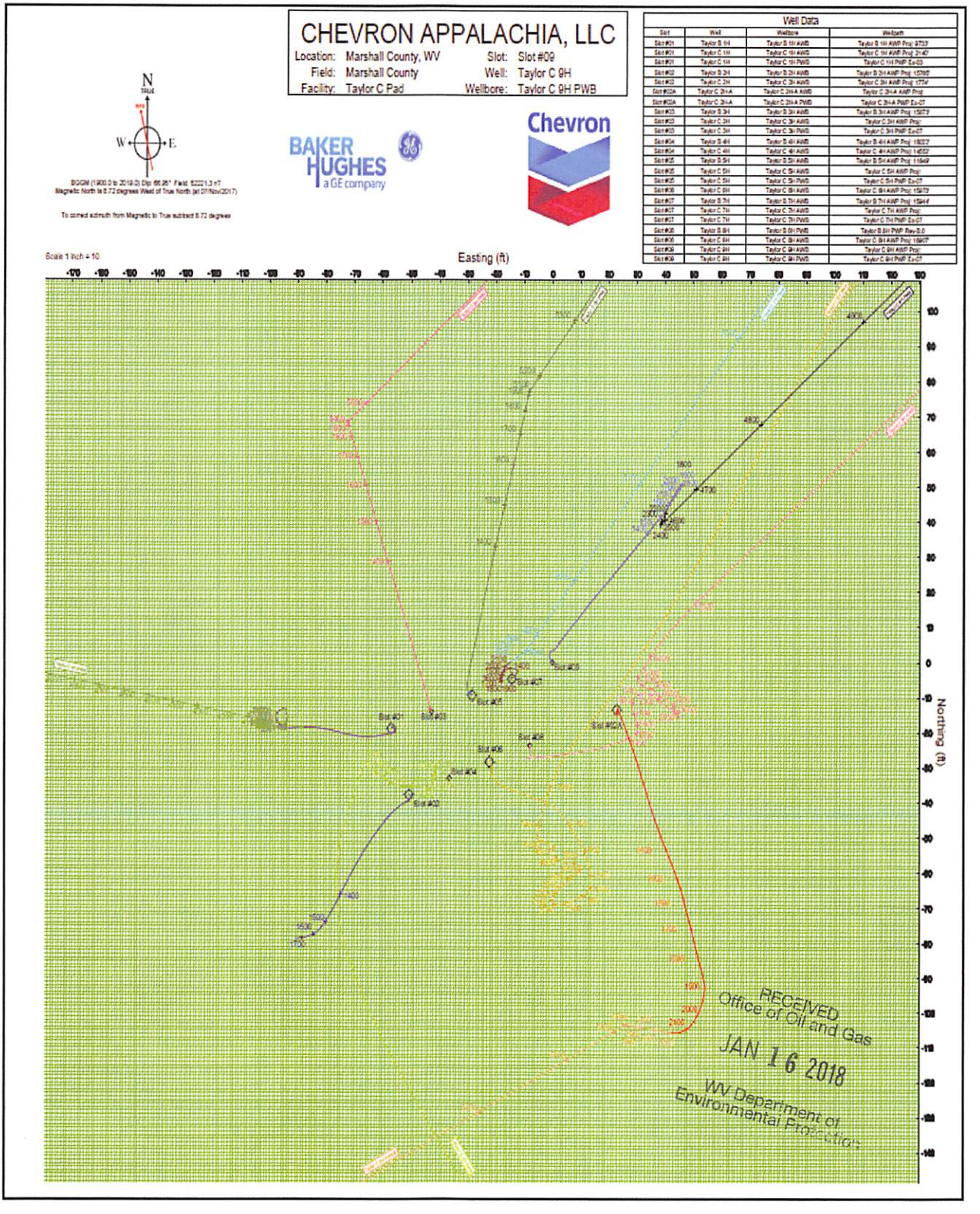
PRECISION DRILLING

DATE: 2017/09/08
DWG No.: BOP-560-005
DWG BY: CB

7. Wellhead Assembly



8. Spider Plot



WW-6AW
(1-12)

API NO.
OPERATOR WELL NO. TAYLOR C 3H
Well Pad Name: Taylor C

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A
The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions
Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided,* That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, Alex O'Neill, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	West Virginia	West Virginia North State Plane NAD 27	East:	1,663,767.374 ft
County:	Marshall		North:	494,580.229 ft
District:	Clay	Public Road Access:		
Quadrangle:	GLEN EASTON	Generally used farm name:		TAYLOR C
Watershed:	Middle Grave Creek – Grave Creek			

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, **provided that Chevron U.S.A. Inc. drills the well on West Virginia North State Plane NAD 27 coordinates of North 494,580.229 ft, East 1,663,767.374 ft in accordance with the Agreement between Consolidation Coal Company, Murray American Energy and Chevron U.S.A. Inc. dated 2014-11-19.**

RECEIVED
Office of Oil and Gas
JAN 16 2018
WV Department of
Environmental Protection

*Please check the box that applies

- ☐ SURFACE OWNER
- ☐ SURFACE OWNER (Road and/or Other Disturbance)
- ☐ SURFACE OWNER (Impoundments/Pits)
- ☐ COAL OWNER OR LESSEE
- ☒ COAL OPERATOR
- ☐ WATER PURVEYOR
- ☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD

FOR EXECUTION BY A NATURAL PERSON

Signature: _____
Print Name: _____
Date: _____

FOR EXECUTION BY A CORPORATION, ETC.

Company: Consolidation Coal Company
By: Alex O'Neill
Its: Coal, Oil & Gas Relations Manager
Signature: _____
Date: 1/9/2018

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as 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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov

WW-6AW
(1-12)

API NO. 47- _____ - _____
OPERATOR WELL NO. Taylor C 3H
Well Pad Name: Taylor C

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

VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A
The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions
Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided,* That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, Casey V. Saunders, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	West Virginia	Easting:	WV North State Plane - 1,663,767.374
County:	Marshall	Northing:	WV North State Plane - 494,580.229
District:	Clay	Public Road Access:	
Quadrangle:	Glen Easton	Generally used farm name:	Taylor C
Watershed:	Middle Grave Creek - Grave Creek		

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.

*Please check the box that applies	FOR EXECUTION BY A NATURAL PERSON
☐ SURFACE OWNER	Signature: _____
☐ SURFACE OWNER (Road and/or Other Disturbance)	Print Name: _____
☐ SURFACE OWNER (Impoundments/Pits)	Date: _____
☒ COAL OWNER OR LESSEE	**FOR EXECUTION BY A CORPORATION, ETC.**
☐ COAL OPERATOR	Company: CONSOL Energy, Inc.
☐ WATER PURVEYOR	By: Casey V. Saunders
☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD	Its: Manager Coal-Gas Coordination
	Signature: Casey V. Saunders
	Date: 01/09/2018

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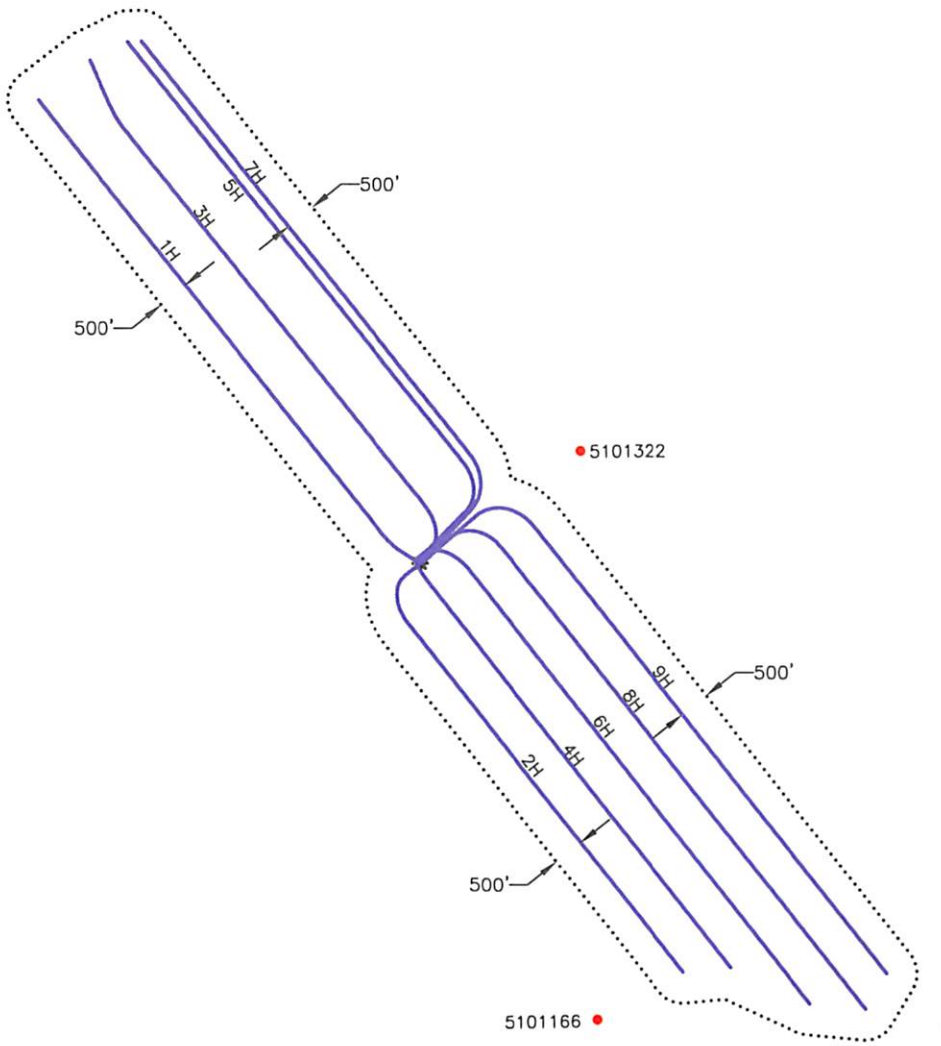
Office of Oil and Gas
JAN 16 2018
WV Department of
Environmental Protection

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as 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 or your personal information, please contact DEP's Chief Privacy Officer at deprivacyofficer@wv.gov.



NO KNOWN WELLS WITHIN AREA OF REVIEW

Blue Mountain Inc.
10125 MASON DIXON HIGHWAY
BURTON, WV 26562
PHONE: (304) 662-6486

PREPARED FOR:
CHEVRON APPALACHIA, LLC
700 CHERRINGTON PARKWAY
CORAOPOLIS, PA 15108

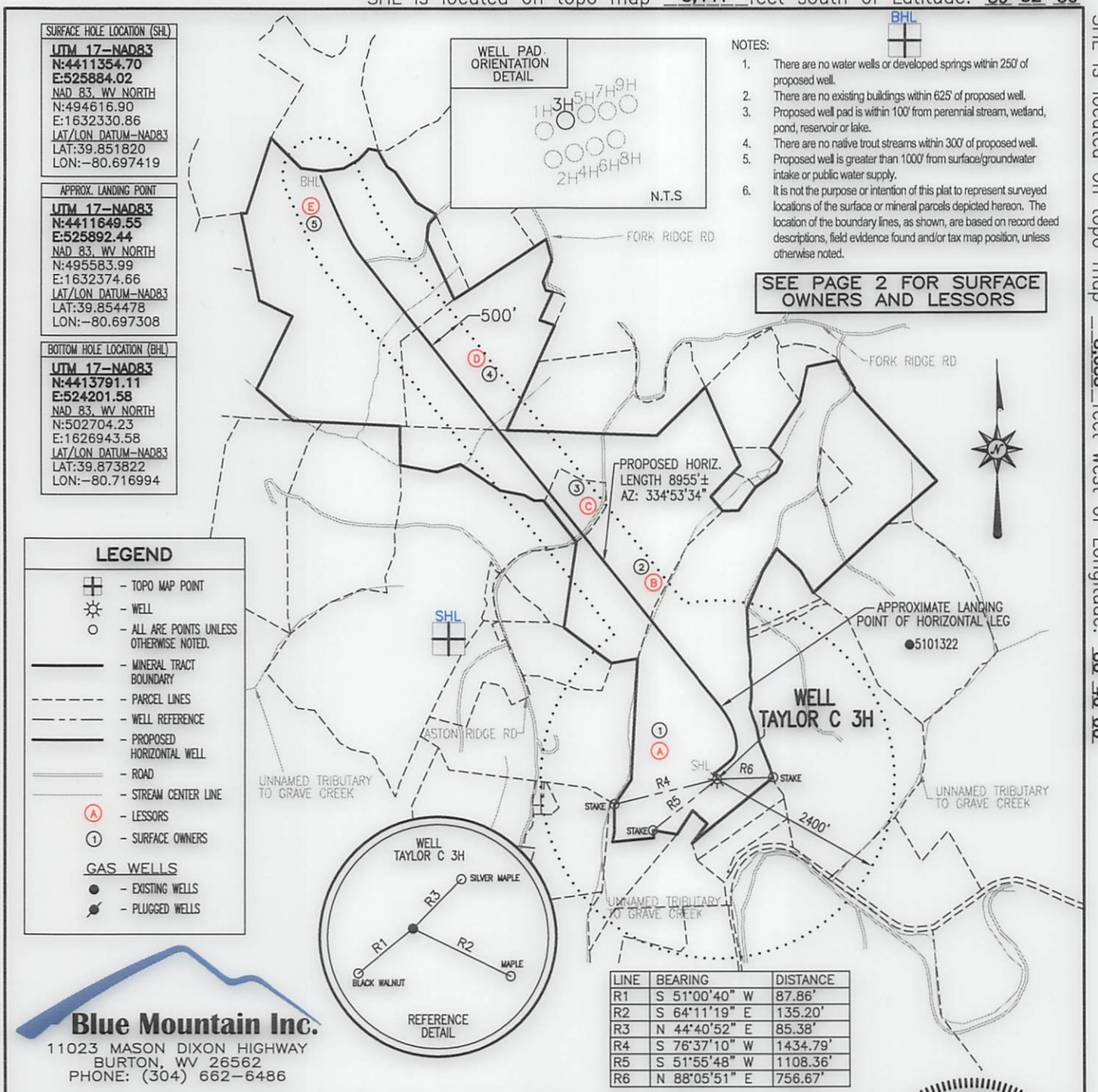
LEGEND
☼ – WELL LOCATION
● – EXCISTING WELL

TAYLOR C
AREA OF REVIEW MAP
MARSHALL COUNTY
CLAY DISTRICT
WEST VIRGINIA

TOPO QUAD: GLEN EASTON, WV
SCALE: 1" = 3000'
DATE: JANUARY 08, 2018

BHL is located on topo map 427 feet south of Latitude: 39°52'30"
SHL is located on topo map 8,441 feet south of Latitude: 39°52'30"

BHL is located on topo map 2,431 feet west of Longitude: 80°42'30"
SHL is located on topo map 8,633 feet west of Longitude: 80°40'00"



Blue Mountain Inc.
11023 MASON DIXON HIGHWAY
BURTON, WV 26562
PHONE: (304) 662-6486

FILE #: TAYLOR C 3H
DRAWING #: TAYLOR C 3H
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1/2500
PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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 DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: George D. Six
R.P.E.: L.L.S.: P.S. No. 2000

GEORGE D. SIX LICENSED No. 2000 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR
PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

DATE: JANUARY 10, 2018
OPERATOR'S WELL #: TAYLOR C 3H
API WELL #: 47 (STATE) 51 (COUNTY) 01802 Mod (PERMIT) H6A

Well Type: [ ] Oil [ ] Waste Disposal [X] Production [ ] Deep
[X] Gas [ ] Liquid Injection [ ] Storage [X] Shallow

WATERSHED: MIDDLE GRAVE CREEK - GRAVE CREEK
ELEVATION: 1257.00'
COUNTY/DISTRICT: MARSHALL / CLAY
QUADRANGLE: GLEN EASTON, WV 7.5'
SURFACE OWNER: WILLIAMS OHIO VALLEY MIDSTREAM LLC
ACREAGE: 265.439±
OIL & GAS ROYALTY OWNER: LEE R. & SHERRI L. TAYLOR
ACREAGE: 643.246±

DRILL [X] CONVERT [ ] DRILL DEEPER [ ] REDRILL [ ] FRACTURE OR STIMULATE [X]
PLUG OFF OLD FORMATION [ ] PERFORATE NEW FORMATION [ ] PLUG & ABANDON [ ]
CLEAN OUT & REPLUG [ ] OTHER CHANGE [ ] (SPECIFY):

TARGET FORMATION: MARCELLUS
ESTIMATED DEPTH: TVD: 6,465.23'± TMD 16,102.55'±

WELL OPERATOR: CHEVRON APPALACHIA, LLC
Address: 700 CHERRINGTON PARKWAY
City: CORAOPOLIS State: PA Zip Code: 15108

DESIGNATED AGENT: KENNETH E. TAWNEY
Address: 500 LEE STREET, EAST SUITE 1600
City: CHARLESTON State: WV Zip Code: 25301-3202

TAYLOR C
3H
PAGE 2 OF 2

	SURFACE OWNER	DIST-TM/PAR
1	WILLIAMS OHIO VALLEY MIDSTREAM LLC	4-10/21
2	LEWIS A. ASTON JR. ET UX	4-10/6
3	GEORGE K. HOWARD ET UX	4-10/6.1
4	MARNIE KAY BUCHANAN EST	4-9/11
5	THOMAS E. HICKS	4-8/37

	LESSOR
A	LEE R. & SHERRI L. TAYLOR
B	LEWIS A. ASTON JR. & CATHY ASTON
C	LEWIS A. ASTON JR. & CATHY ASTON
D	JAMES & MARNIE BUCHANAN
E	CHRISTA D. HICKS & LESLIE M. HICKS

01802 M00
H6A

SURFACE HOLE LOCATION (SHL)	APPROX. LANDING POINT	BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83	**UTM 17-NAD83**	**UTM 17-NAD83**
N:4411354.70	**N:4411649.55**	**N:4413791.11**
E:525884.02	**E:525892.44**	**E:524201.58**
NAD 83, WV NORTH	NAD 83, WV NORTH	NAD 83, WV NORTH
N:494616.90	N:495583.99	N:502704.23
E:1632330.86	E:1632374.66	E:1626943.58
LAT/LON DATUM-NAD83	LAT/LON DATUM-NAD83	LAT/LON DATUM-NAD83
LAT:39.851820	LAT:39.854478	LAT:39.873822
LON:-80.697419	LON:-80.697308	LON:-80.716994

JANUARY 10, 2018

Blue Mountain Inc.
11023 MASON DIXON HIGHWAY
BURTON, WV 26562
PHONE: (304) 662-6486

1

51-01802MOD

Susan Laird
Permitting Assistant, HES Permitting

January 15, 2018

West Virginia DEP
Office of Oil & Gas
601 57th Street SE
Charleston, WV 25304-2345

RE: Taylor C 1H, 2HA, 3H, 5H, 7H & 9H
Casing Modification Change

Dear Mr. Brewer,

Please accept this as our formal request for a modification to the Well Permit Application (WW-6B) for the Taylor C 1H, 2HA, 3H, 5H, 7H and 9H Casing & Tubing Program.

See below the explanations for the modifications from our drilling department:

- Reason for the 9-5/8" casing change to J-55 was this satisfies our global requirements for casing design and saves money.
- The 5-1/2" burst pressure changed because we switched to a different provider who specifically manufactures their casing to a higher yield stress, thus increasing burst pressure.
- The cement yields have changed because we have changed our slurries and with our provider we wanted to have flexibility to use class A, G or H cement types.

If you have any question please contact me at (412) 865-2504.

Sincerely,

Susan Laird

Appalachian Mountain Business Unit
Chevron North America Exploration and Production Company
700 Cherrington Parkway
Coraopolis, PA 15108
Tel 412-865-2504
slaird@chevron.com

WW-6B
(04/15)

API NO. 47- 51 - 01802 MOD
OPERATOR WELL NO. 3H
Well Pad Name: Tayor C

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

1) Well Operator:	Chevron Appalachia, LLC	49449935	Marshall	Clay	Glen Easton, WV
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: 3H Well Pad Name: Tayor C

3) Farm Name/Surface Owner: Williams Ohio Valley Midstream Public Road Access: CR 17 Fork Ridge Road

4) Elevation, current ground: 1257' Elevation, proposed post-construction: 1236'

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 JW 10/16/17

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 6533', 49' - 0.64 psi/ft

8) Proposed Total Vertical Depth: 6,555' GL

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 15,989'

11) Proposed Horizontal Leg Length: 8,955'

12) Approximate Fresh Water Strata Depths: 470' GL

13) Method to Determine Fresh Water Depths: 1 mi radius offset wells, freshwater wells, and freshwater base level

14) Approximate Saltwater Depths: 1276', 1880'-2370' KB: Francis 1V offset well

15) Approximate Coal Seam Depths: 800' GL

16) Approximate Depth to Possible Void (coal mine, karst, other): None

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

(a) If Yes, provide Mine Info: Name: Ireland Mine
Depth: 800' GL
Seam: Pittsburgh No. 8'
Owner: CONSOL Energy

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WV Department of
Environmental Protection

API NO. 47- 51 - 01802 MOD
OPERATOR WELL NO. 3H
Well Pad Name: Tayor C

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			40'	40'	141.8
Fresh Water	13 3/8"	New	J-55	54.5#	520'	520'	691.0
Coal							
Intermediate	9 5/8	New	J-55	40#	2,104'	2,104'	941.0
Production	5 1/2	New	P-110	20#	15,989	15,989	3430.0
Tubing							
Liners							

JW 10/16/17

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"	26"					
Fresh Water	13 3/8"	17 1/2	0.380"	2,730 psi	1,911 psi	Class A	1.18
Coal							
Intermediate	9 5/8"	12 1/4	0.395"	3,950 psi	2,768 psi	Class A	1.19
Production	5 1/2"	8 1/2"	0.361"	14,360 psi	9,975 psi	Class A, G or H	1.15
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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Office of Oil and Gas
OCT 19 2017
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Environmental Protection

WW-6B
(10/14)

API NO. 47- 51 - 01802 MOD
OPERATOR WELL NO. 3H
Well Pad Name: Tayor C

JW 10/16/17

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill 17 1/2" hole to 600 then run and cement 13 3/8" casing to surface covering the fresh water. Drill 12.25" hole to 2,330' then run and cement to surface 9 5/8" casing, covering the Big Injun. Drill 8 1/2" hole to KOP at 5,778'. Drill 8 1/2" curve and lateral to 15,989' MD and 6,555 TVD. Run 5 1/2" production casing and cement back to surface.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Chevron will utilizing plug and perf method with 52 stages using 8,572 bbl of fluid and 315,000 lbm of sand per stage.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 22.01

22) Area to be disturbed for well pad only, less access road (acres): 4.66

23) Describe centralizer placement for each casing string:

There will be a bow spring centralizer every two jts on the Water string and intermediate. Vertical Production: bow spring - (1) per every other jt over coupling; Curve and Lateral: solid composite (1) per jt of csg to KOP.

24) Describe all cement additives associated with each cement type:

For the Water String the blend will contain Class A cement 3% CaC12 , and flake. The intermediate will contain Class A cement 3% CaC12, Salt, and flake. The Production cement will have a lead and tail cement. The lead will contain Class A cement, KCl, dispersant, suspension agent, and retarder. The tail will contain Class A cement, Calcium Carbonate, KCl, dispersant, de-foamer, suspension agent, and friction reducer.

25) Proposed borehole conditioning procedures:

Well will be circulated a minimum of 3 bottoms up once casing point has been reached on all hole sections and until uniform mud properties are achieved.

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Office of Oil and Gas

OCT 19 2017

WV Department of
Environmental Protection

*Note: Attach additional sheets as needed.

47-057-01802 34
47-057-01804 54

Chevron

Susan Laird
Permitting Assistant, HES Permitting

January 11, 2018

West Virginia DEP
Office of Oil & Gas
601 57th Street SE
Charleston, WV 25304-2345

Certified Mail:

RE: Taylor C 3H and 5H Modification

Dear Mr. Brewer,

Please accept this as our formal request for a modification to the Well Permit Application (WW-6B) for the Taylor C 3H and 5H.

Due to the P&A of the Taylor C 7H, we are adjusting the spacing on the adjacent wells to recover the reserves that will be lost from the 7H proposed lateral. The plan will be to shift the Taylor C 3H ~315 ft. NW and shift Taylor C 5H approximately ~490 ft. NW from there permitted locations.

Included in these modification packages are the following documents for each well:

WW-6B – (field approved)
Site Safety Plan
WW-6AW - Voluntary Statement of No Objection
Area of Review Map
Mylar Plats and copy

If you have any question please contact me at (412) 865-2504 or slaird@chevron.com

Sincerely,

Susan Laird

Appalachian Mountain Business Unit
Chevron North America Exploration and Production Company
700 Cherrington Parkway
Coraopolis, PA 15108
Tel 412-865-2504
slaird@chevron.com