west virginia department of environmental protection

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

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

March 25, 2014

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-5101738, issued to NOBLE ENERGY, INC., 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 all 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.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days 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.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-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) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: MND 3 BHS
Farm Name: CONSOL MINING CO., LLC
API Well Number: 47-5101738
Permit Type: Horizontal 6A Well
Date Issued: 03/25/2014

03/28/2014

4705101738

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) 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. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACOE). Through this permit, you are hereby being advised to consult with USACOE regarding this proposed activity.

2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.

3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the fill material shall be within plus or minus 2% of the optimum moisture content as determined by the standard proctor density test, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. Each lift must meet 95 % compaction of the optimum density based on results from the standard proctor density test of the actual soils used in specific engineered fill sites. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.

4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.

5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.

6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.

7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.

8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

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4705101738

WW-6B
(9/13)

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

51 3 558

1) Well Operator: Noble Energy, Inc.	494501907	Marshall	Franklin	Powhatan Point
	Operator ID	County	District	Quadrangle

2) Operator's Well Number: MND 3 BHS Well Pad Name: MND 3

3) Farm Name/Surface Owner: Consol Mining Co., LLC Public Road Access: CR 2/1

4) Elevation, current ground: 1128.39' Elevation, proposed post-construction: 1112'

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

6) Existing Pad: Yes or No yes-building now

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Marcellus at 6226' and 53' in thickness, pressure 4427#. Burkett at 6170', 27' in thickness, 3887# pressure. Hamilton at 6205', 21' in thickness, 3909# pressure.

8) Proposed Total Vertical Depth: 6279'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 13,842'

11) Proposed Horizontal Leg Length: 8,714'

12) Approximate Fresh Water Strata Depths: 165' and 298'

13) Method to Determine Fresh Water Depths: Offset well data

14) Approximate Saltwater Depths: None noted in offsets

15) Approximate Coal Seam Depths: 612' Pittsburgh Base

16) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated, drilling in pillar-mine maps attached

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

(a) If Yes, provide Mine Info: Name: Ireland Mine
Depth: Base at 612' at deepest point
Seam: Pittsburgh
Owner: Murray American Energy (Previously Consol)

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(9/13)

18) **CASING AND TUBING PROGRAM**

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	30"	New	LS	117#	40'	40'	CTS
Fresh Water	20"	New	LS	94#	400	400'	CTS
Coal	133/8"	New	J-55	54.5#	1062'	1062'	CTS
Intermediate	9 5/8"	New	J-55	36#	2600'	2600'	CTS
Production	5 1/2"	New	P110	20#	13,842'	13,842'	TOC 200' above 9 5/8 casing shoe
Tubing							
Liners							

MJK 1/21/2014
1/21/14

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	0.375		Type 1/Class A	1.2
Fresh Water	20"	26"	.438	2730	Type 1/Class A	1.2
Coal	13 3/8"	17 1/2"	.380	2730	Type 1/Class A	1.2
Intermediate	9 5/8"	12 3/8"	.352	3520	Type 1/Class A	1.19
Production	5 1/2"	8 3/4" & 8 1/2"	.361	12,640	Type 1/Class A	1.27
Tubing						
Liners						

PACKERS

Kind:				
Sizes:				
Depths Set:				

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(9/13)

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

Drill the vertical depth to the Marcellus at an estimated total vertical depth of approximately 6279 feet. Drill Horizontal leg - stimulate and produce the Marcellus Formation. If we should encounter an unanticipated void we will install casing at a minimum of 20' below the void but not more than 100' below the void, set a basket and grout to surface.

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

The stimulation will be multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals. See attached list. Maximum pressure not to exceed 10,000 lb.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 15.6

22) Area to be disturbed for well pad only, less access road (acres): 9.1

23) Describe centralizer placement for each casing string:

No centralizers will be used with conductor casing. Surface casing will have bow spring centralizers on first 2 joints then every third joint to 100' from surface. Intermediate casing will have bow spring centralizers on first 2 joints then every third joint to 100' from surface. Production string will have a rigid bow spring every joint to KOP, rigid bow spring every third joint from KOP to top of cement.

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

Conductor-1.15% CaCl *Surface and Coal (Intermediate)- Class A Portland Cement CaCl 2%, 2% Accelerator, 0.2% Antifoam and 0.125#/sk Flake. Excess Yield=1.18 Production- 14.8 ppg class A 25:75:0 System +2.6% Cement extender, 0.7% Fluid Loss additive, 0.45% high temp retarder, 0.2% friction reducer 15% Excess Yield=1.27 TOC greater or equal to 200' above 9.625" shoe.
*Surface and Coal string WVDEP approved variance attached.

25) Proposed borehole conditioning procedures:

Conductor-The hole is drilled w/air and casing is run on air. Apart from insuring the hole is clean via air circulation at TD, there are no other conditioning procedures. Surface-The hole is drilled w/air and casing is run on air. Fill with KCl water once drilled to TD. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement Coal-The hole is drilled and cased w/air or on Freshwater based mud. Once casing is at setting depth, circulate and fill w/KCl water and a minimum of one hole volume is circulated prior to pumping cement. Intermediate-Once surface casing is set and cemented, intermediate hole is drilled either on air or SOBM and filled with KCl water once drilled to TD. Production-The hole is drilled with SOBM and once to TD, circulated at maximum allowable pump rate for at least 6x bottoms up. Once on bottom with casing, circulate a minimum of one hole volume prior to pumping cement.

*Note: Attach additional sheets as needed.

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WW-9
(9/13)

API Number 47 - 4705101738
Operator's Well No. MND 3 BHS

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Noble Energy, Inc. OP Code 494501907

Watershed (HUC 10) Short Creek-Ohio River (HUC 10) Quadrangle Powhatan Point

Elevation 1112' Post Construction County Marshall District Franklin

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: Closed Loop-No pit will be utilized

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

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application
_____ Underground Injection (UIC Permit Number _____)
■ Reuse (at API Number TBD-Next anticipated well)
■ Off Site Disposal (Supply form WW-9 for disposal location)
_____ Other (Explain _____

Will closed loop system be used? If so, describe: Yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air thru coal string, then SOBM

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

Additives to be used in drilling medium? Please see attached

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

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

-Landfill or offsite name/permit number? Please see attached

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, 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 Laura L. Adkins

Company Official (Typed Name) Laura Adkins

Company Official Title Regulatory Analyst

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Subscribed and sworn before me this 17th day of FEBRUARY, 2014

Notary Public

My commission expires 9/3/2014

OFFICIAL SEAL
NOTARY PUBLIC, STATE OF WEST VIRGINIA
PHILIP W. YOUNG
3591 McCORKLE AVE SE
CHARLESTON, WV 25304
MY COMMISSION EXPIRES SEPT. 3, 2014

4705101738

Chemical List Including CAS#'s

Type: Friction Reducer (DWP-612)
Chemical Component as listed on MSDS: Long Chain Polyacrylamide
CAS: N/A

Type: Biocide (DWP-944)
1st Chemical Component as listed on MSDS: 2,2-Dibromo-3-nitrilopropionamide
CAS: 10222-01-2
2nd Chemical Component as listed on MSDS: Polyethylene Glycol Mixture
CAS: 25322-68-3

Type: Scale Inhibitor (DAP-901)
1st Chemical Component as listed on MSDS: Methanol
CAS: 67-56-1
2nd Chemical Component as listed on MSDS: Phosphoric Acid Ammonium Salt
CAS: Trade Secret
3rd Chemical Component as listed on MSDS: Ammonium Chloride
CAS: 12125-02-9
4th Chemical Component as listed on MSDS: Organic Phosphonate
CAS: Trade Secret
5th Chemical Component as listed on MSDS: Amine Salt
CAS: Trade Secret
6th Chemical Component as listed on MSDS: Oxyalkylated Polyamine
CAS: Trade Secret

Type: Surfactant (DWP-938)
Chemical Component as listed on MSDS: Soap
CAS: N/A

Type: Hydrochloric Acid
Chemical Component as listed on MSDS: Hydrochloric Acid
CAS: 7647-01-0

Type: PA Breaker (DWP-690)
Chemical Component as listed on MSDS: Hydrogen Peroxide
CAS: Trade Secret

Type: Gel Slurry (DWP-111)
Chemical Component as listed on MSDS: Viscosifier
CAS: N/A

Type: Oxidizer Breaker (DWP-901)
Chemical Component as listed on MSDS: Ammonium Persulfate
CAS: 7727-54-0

Type: Buffer (DWP-204)
Chemical Component as listed on MSDS: Formic Acid
CAS: 64-18-6

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Site Water/Cuttings Disposal

Cuttings

Haul off Company:

Eap Industries, Inc. DOT # 0876278
1575 Smith Twp State Rd. Atlasburg PA 15004
1-888-294-5227

MAX Environmental Technologie
233 Max Lane
Yukon, PA 25698
PAD004835146

Disposal Locations:

Apex Environmental, LLC Permit # 06-08438
11 County Road 78
Amsterdam, OH 43903
740-543-4389

Westmoreland Waste, LLC Permit # 100277
111 Conner Lane
Belle Vernon, PA 15012
724-929-7694

Sycamore Landfill (Allied Waste) R30-07900105-2010
4301 Sycamore Ridge Road
Hurricane, WV 25526
304-562-2611

Water

Haul off Company:
Dynamic Structures, Clear Creek DOT # 720485
3790 State Route 7
New Waterford, OH 44445
330-892-0164

Disposal Location:

Solidification
Waste Management, Arden Landfill Permit # 100172
200 Rangos Lane
Washington, PA 15301
724-225-1589

Solidification/Incineration
Soil Remediation, Inc. Permit # 02-20753
6065 Arrel-Smith Road
Lowelville, OH 44436

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4705101738

Form WW-9

Operator's Well No. MND 3 BHS

Noble Energy, Inc.

Proposed Revegetation Treatment: Acres Disturbed 15.6 acres Prevegetation pH _____

Lime 2 to 3 Tons/acre or to correct to pH _____

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch Hay or straw at 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	Ladino Clover	5
See site plans for full list		See site plans for full list	

Attach:
Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Jim Nicholson WVOOG State Inspector

Comments: _____

Title: Oil & Gas Inspector Date: 1/21/14

Field Reviewed? (X) Yes ( ) No

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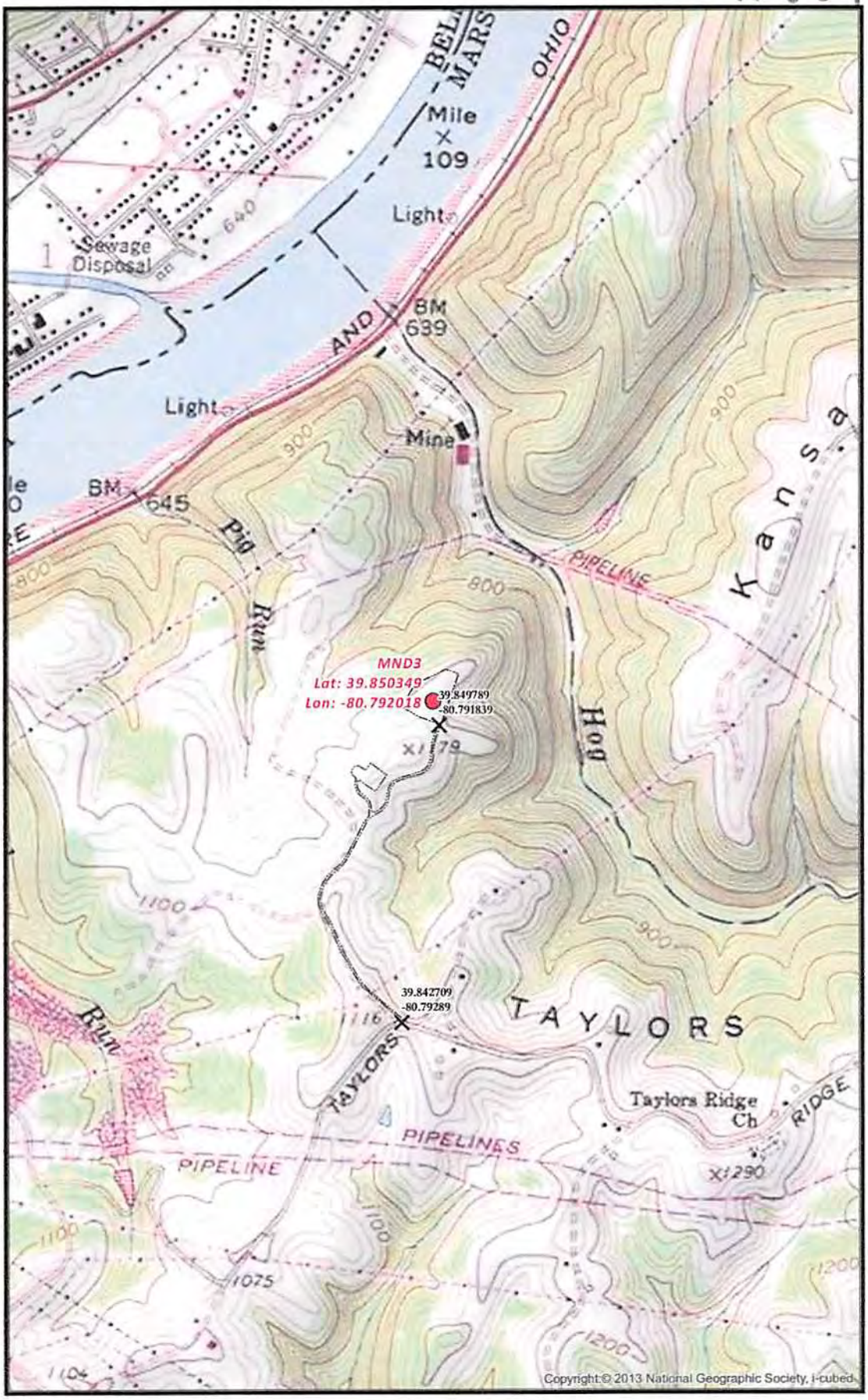
4705101738
Plat Spotted



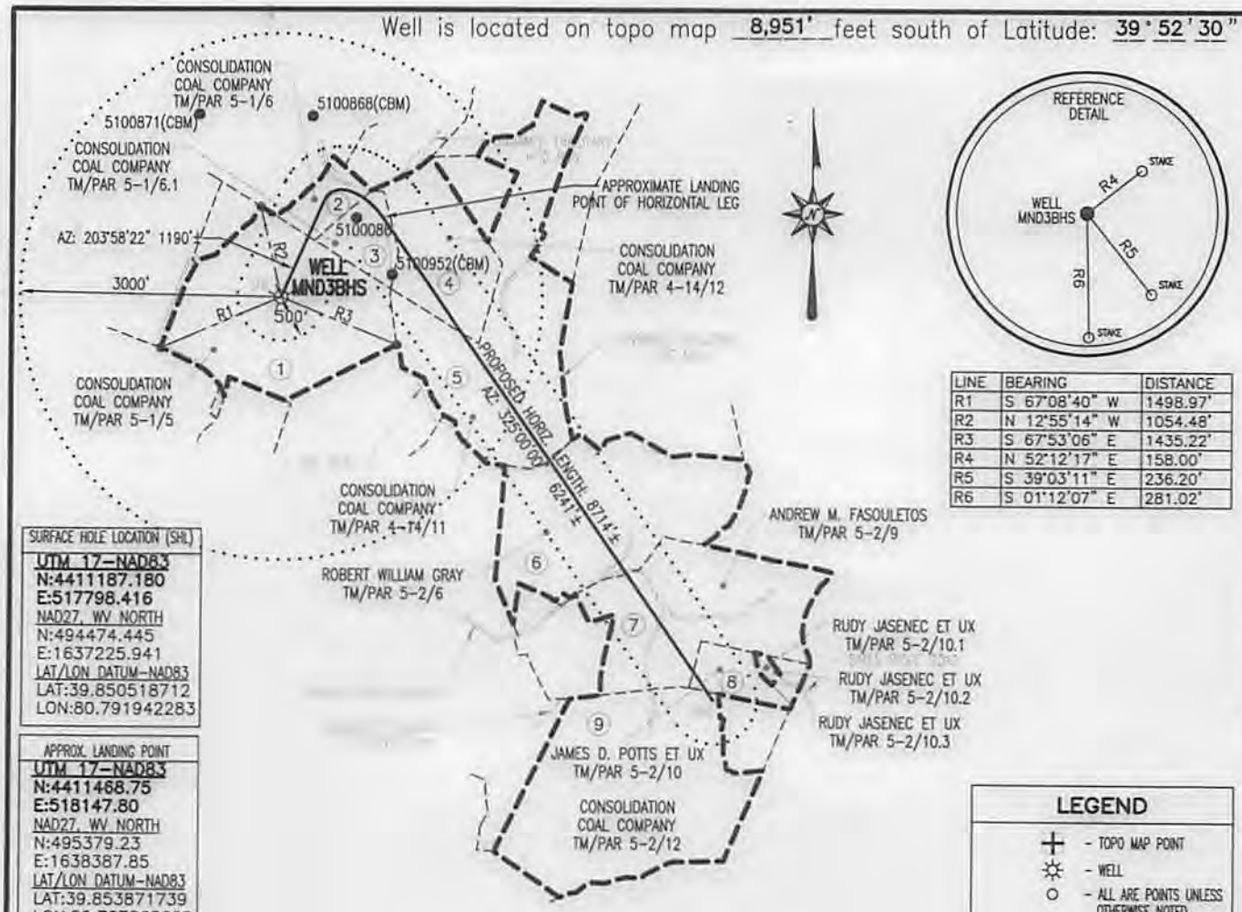
MND3 SITE SAFETY PLAN - SITE WELL LOCATION - X Access Road Intersection ● Well Pad Center ----- PROPOSED	0 500 1,000 2,000 Feet Scale 1" = 1,000' Projection: NAD_1927_StatePlane_West_Virginia_North_FIPS_4301 Units: Feet US	noble energy Disclaimer: All data is licensed for use by Noble Energy Inc. use only.	Date: 7/3/2013 Author: ChristopherGlover 1/6

Document Path: G:\Denver\GIS-Denver\Projects\District_30\Appalachia\MXDs\EHSR\Permitting\Moundsville\MND3\D30_PA_WV_MND3_Well_Location.mxd

03/28/2014

Well is located on topo map 8,951' feet south of Latitude: 39 ° 52 ' 30 "

Well is located on topo map 129' feet west of Longitude: 80 ° 47 ' 30 "



LINE	BEARING	DISTANCE
R1	S 67°08'40" W	1498.97'
R2	N 12°55'14" W	1054.48'
R3	S 67°53'06" E	1435.22'
R4	N 52°12'17" E	158.00'
R5	S 39°03'11" E	236.20'
R6	S 01°12'07" E	281.02'

SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83
N:4411187.180
E:517798.416
NAD27, WV NORTH
N:494474.445
E:1637225.941
LAT/LON DATUM-NAD83
LAT:39.850518712
LON:80.791942283

APPROX. LANDING POINT
UTM 17-NAD83
N:4411468.75
E:518147.80
NAD27, WV NORTH
N:495379.23
E:1638387.85
LAT/LON DATUM-NAD83
LAT:39.853871739
LON:80.787865602

BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83
N:4409820.45
E:519343.50
NAD27, WV NORTH
N:489904.72
E:1642221.14
LAT/LON DATUM-NAD83
LAT:39.838170758
LON:80.773921308

LEGEND
- + - TOPO MAP POINT
- ☼ - WELL
- ○ - ALL ARE POINTS UNLESS OTHERWISE NOTED.
- Ⓦ - WATER SOURCE
- ⓪ - LEASE NUMBER BASED ON ATTACHED WW-6A1
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE

WELLS WITHIN 3000'
- ● - EXISTING WELLS
- ⊘ - PLUGGED WELLS

NOTES:
1. There are no water wells or developed springs within 250' of proposed well.
2. There are no existing buildings within 625' of proposed well.
3. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
4. There are no native trout streams within 300' of proposed well.
5. Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
6. It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

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

FILE #: MND3BHS
DRAWING #: MND3BHS
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: OCTOBER 29, 2013
OPERATOR'S WELL #: MND3BHS
API WELL #: 47 (STATE) 51 (COUNTY) 01738 (PERMIT) H6A

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

WATERSHED: SHORT CREEK ELEVATION: 1122.81'
COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, OH-WV 7.5'
SURFACE OWNER: CONSOLIDATION COAL COMPANY / Consol Mining Co. ACREAGE: 180.214±
OIL & GAS ROYALTY OWNER: SEE ATTACHED WW-6A1 ACREAGE: 524.524±

03/28/2014

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,279'± TMD: 13,842'±

WELL OPERATOR NOBLE ENERGY, INC. DESIGNATED AGENT STEVEN M. GREEN
Address 333 TECHNOLOGY DRIVE, SUITE 116 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590
City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

API#5101669

EROSION & SEDIMENT CONTROL PLAN
FOR
MND 3 WELL PAD
FRANKLIN DISTRICT, MARSHALL COUNTY, WV

APPROVED
WVDEP OOG
11/13/2013

RJK 1/21/14
BC 1/21/14

GENERAL NOTES

1. THE TOPOGRAPHIC SURVEY UTILIZED FOR THIS BASE MAPPING WAS PERFORMED BY RETTEW ASSOCIATES, INC IN MAY 2013.
2. PROPERTY BOUNDARIES, LANDOWNER INFORMATION AND ROAD NETWORKS SHOWN ON THIS PLAN ARE BASED ON AVAILABLE COUNTY GIS PARCEL DATA.
3. EXISTING STRUCTURES, TREE LINES AND ROADWAYS HAVE BEEN LOCATED PER AVAILABLE ONLINE AERIAL PHOTOGRAPHY.
4. THE HORIZONTAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN DATUM 1983 (NAD 83), NORTH ZONE.
5. THE VERTICAL DATUM IS WEST VIRGINIA STATE PLAN, NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).
6. THE UTILITIES SHOWN ON THIS PLAN ARE FOR REFERENCE PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATION PRIOR TO ANY EXCAVATION BY NOTIFYING MISS UTILITY OF WEST VIRGINIA AT 1-800-245-4848.
7. A WETLANDS PRESENCE/ABSENCE SURVEY WAS PERFORMED BY RETTEW ASSOCIATES IN MAY 2013.
8. CONTRACTOR TO PROTECT ALL WETLANDS. NO WETLAND IMPACTS ARE PROPOSED IN THIS PLAN.
9. THE CUT & FILL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR PERMITTING AND INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY EXISTING GRADES AND TO VERIFY EARTHWORK VOLUMES, METHODS AND PROCEDURES. ANY ISSUES ARE TO BE BROUGHT TO THE ENGINEER'S AND OWNER'S ATTENTION PRIOR TO COMMENCEMENT OF WORK.
10. ALL EXISTING UTILITIES HAVE BEEN SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION.
11. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL ABOVE AND BELOW GROUND UTILITIES AND STRUCTURES AND WILL BE RESPONSIBLE FOR THE PROTECTION OF THESE UTILITIES AND STRUCTURES AT ALL TIMES.
12. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE AND ANY DAMAGE DUE TO THE CONTRACTORS NEGLIGENCE SHALL BE REPAIRED IMMEDIATELY AND COMPLETELY AT HIS EXPENSE.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF DAMAGED OR DESTROYED LANDSCAPE AND LAWNS.
14. CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON THE PROJECT SITE PRIOR TO THE START OF CONSTRUCTION.
15. CONTRACTOR TO RELOCATE UTILITIES AS REQUIRED.
16. CONTRACTOR MAY WIDEN ACCESS ROAD DUE TO STEEP SLOPES IF DEEMED NECESSARY AND PER APPROVAL BY THE OWNER AND ENGINEER.
17. PROPOSED ROCK CONSTRUCTION ENTRANCE TO BE BUILT SUCH THAT RUNOFF FROM PROPOSED ACCESS WILL NOT SHEET FLOW ON TO PUBLIC ROAD.
18. SEED AND MULCH ALL DISTURBED AREAS PER DETAILS IN THIS PLAN.
19. ALL CLEARED TREE GRINDINGS SHALL BE PLACED ON UPHILL SIDE OF COMPOST FILTER SOCKS AND NOT STOCKPILED ON-SITE.
20. CONTRACTOR SHALL STOP WORK IMMEDIATELY AND CONTACT NOBLE ENERGY AND APPROPRIATE RESPONSIBLE AUTHORITIES SHOULD ANY HISTORICAL ARTIFACTS (I.E. BONES, POTTERY, ETC.) BE ENCOUNTERED DURING CONSTRUCTION.
21. NO WORK SHALL BE DONE OUTSIDE THE LIMITS OF DISTURBANCE OR IN PROTECTED AREAS.

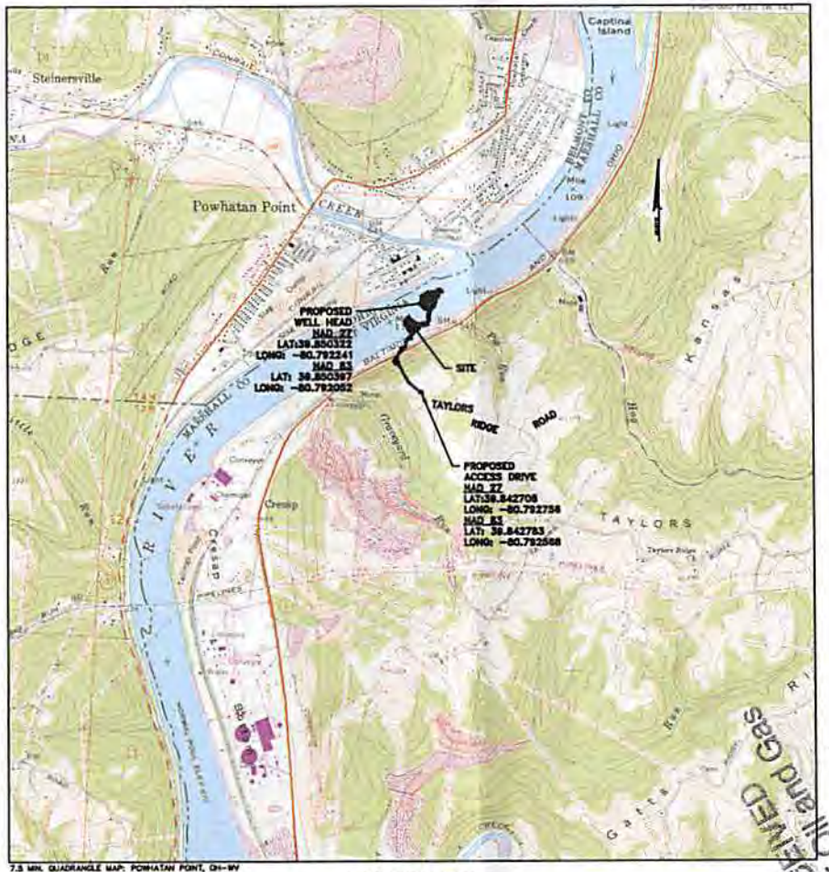
DIRECTIONS TO THE SITE

FROM INTERSECTION OF I-470 AND US-25/WV-2, TAKE WV-2 SOUTH FOR 8.5 MILES. TURN LEFT ON WV-2 ALT AND THEN IMMEDIATELY BEAR LEFT ON ROBERTS RIDGE ST JOSEPH RD/CR-21 AND FOLLOW FOR 4.8 MILES. TURN RIGHT ON TAYLORS RIDGE ROAD. FOLLOW FOR 2.7 MILES EXISTING ACCESS DRIVE WILL BE ON RIGHT.

CUT & FILL

	MELL PAD	MELL ACCESS	TANK PAD	TANK ACCESS	TOTAL SITE
CUT	+31,850 C.Y.	+11,348 C.Y.	+5,293 C.Y.	+3,100 C.Y.	+50,592 C.Y.
STONE	+ 4,127 C.Y.	+ 2,007 C.Y.	+1,227 C.Y.	+ 340 C.Y.	+ 7,463 C.Y.
FILL	-34,794 C.Y.	- 1,262 C.Y.	-6,661 C.Y.	- 184 C.Y.	-43,211 C.Y.
10% COMPACTION	- 3,185 C.Y.	- 968 C.Y.	- 698 C.Y.	- 210 C.Y.	- 5,059 C.Y.
TOPSOIL	- 5,061 C.Y.	- 3,060 C.Y.	-1,461 C.Y.	- 357 C.Y.	- 9,825 C.Y.
NET	- 7,064 C.Y.	+ 8,069 C.Y.	-3,801 C.Y.	+3,581 C.Y.	+ 0 C.Y.

NOTES:
1. THE ASSUMED TOP SOIL DEPTH IS 3".
2. THE CUT & FILL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY EXISTING GRADES AND VERIFY EARTHWORK VOLUMES, METHODS AND PROCEDURES. ANY ISSUES ARE TO BE BROUGHT TO THE ENGINEER'S AND OWNER'S ATTENTION PRIOR TO COMMENCEMENT OF WORK.



7.5 MIN. QUADRANGLE MAP: POWHATAN POINT, OH-WV

LOCATION MAP
SCALE - 1"=2000'

RECEIVED
Office of Oil and Gas
FEB 18 2014
WV Department of
Environmental Protection

WEST VIRGINIA
CALL BEFORE Dial
AT LEAST 48 HOURS, BUT NOT MORE THAN 10 WORKING DAYS (EXCLUDING WEEKENDS AND HOLIDAYS), PRIOR TO TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THESE ACTIVITIES SHALL CONTACT MISS UTILITY OF WEST VIRGINIA AT 811 OR 1-800-245-4848.
TICKET #: 1338400031 DATE: 08/07/13

SOILS CLASSIFICATION

DnD:	CULLEOKA-DORMONT COMPLEX, 8% TO 15% SLOPES
DnE:	CULLEOKA-DORMONT COMPLEX, 15% TO 25% SLOPES
DpC:	CULLEOKA-DORMONT-PEABODY COMPLEX, 8% TO 15% SLOPES
DpD:	CULLEOKA-DORMONT-PEABODY COMPLEX, 15% TO 25% SLOPES
DsE:	DORMONT-CULLEOKA COMPLEX, 25% TO 70% SLOPES, VERY STONY
PpC:	CULLEOKA-DORMONT-PEABODY COMPLEX, 8% TO 15% SLOPES

LIST OF DRAWINGS

DISTURBANCE SUMMARY

TOTAL LIMITS OF DISTURBANCE	= 15.8 ACRES
CLEARING REQUIRED	= 11.1 ACRES
PAD DISTURBANCE	= 8.1 ACRES

Electronic Version of Plans Can Be Viewed at: Q\OIL GAS\SAY FILES\REVIEWS

NO.	DATE	REVISION
1	11/8/13	REVISED PER WV DEP COMMENTS

SCALE: AS SHOWN

PLANS BY: RETTEW ASSOCIATES
MANAGER: MICHAEL R. OGDEN
DESIGN BY: ASN
DRAWN BY: ASN
SURV. CHIEF:
CHKD BY: ASL
CHKD BY: ASL
PA REG. NO.

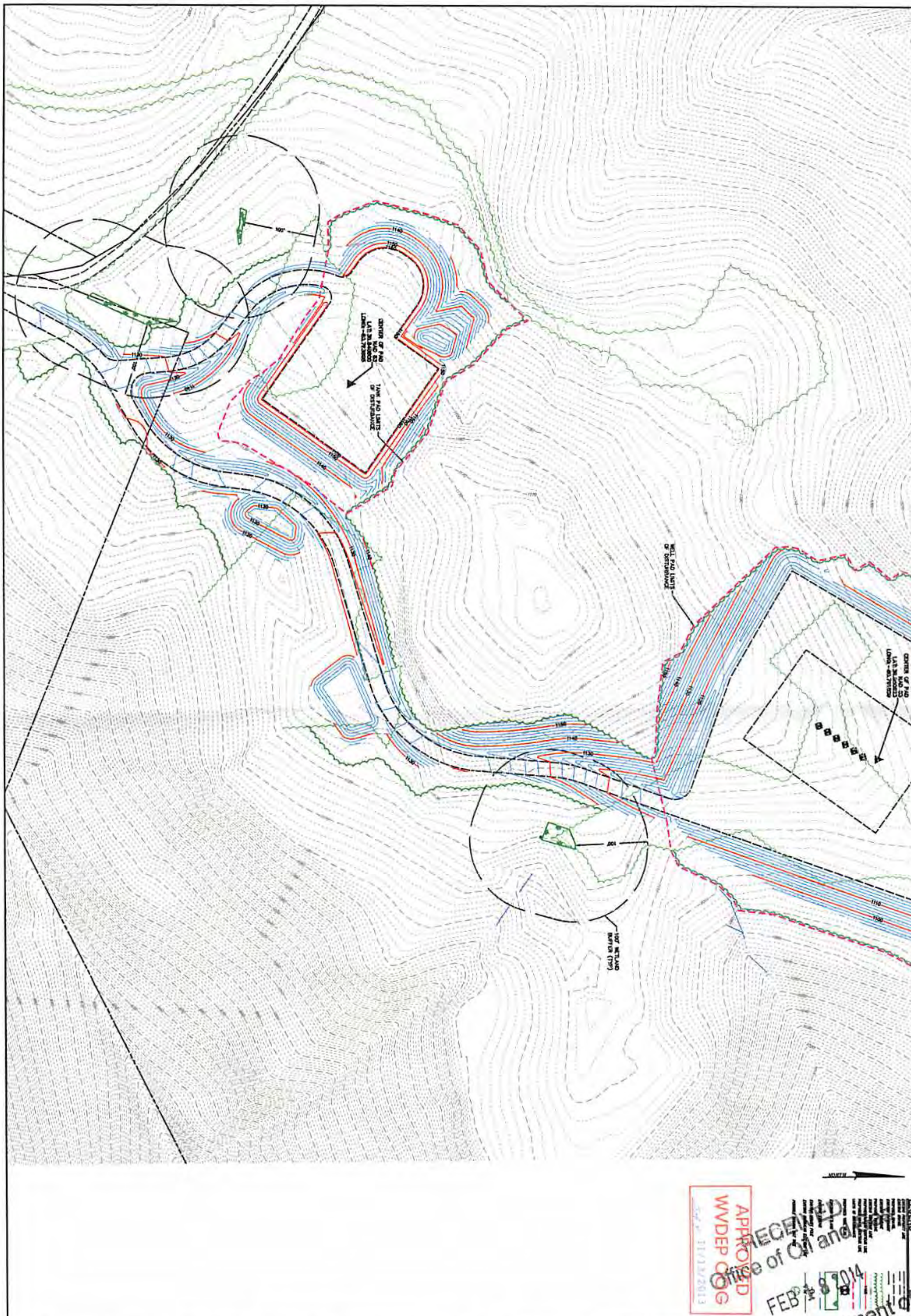
CLIENT
NOBLE ENERGY
333 TECHNOLOGY DRIVE, SUITE 116
CANONSBURG, PA 15317-3077
BEN DEREDIME, PE
(724) 820-3000
noble energy

RETTEW
RETTEW Associates, Inc.
Lancaster, PA • York, PA • Harrisburg, PA • Williamsport, PA
Tel: (717) 291-1720 Fax: (717) 291-1728
Email: mail@rettew.com
Website: www.rettew.com
Engineers • Surveyors • Landscape Architects
Environmental Consultants

COVER SHEET
FOR
MND 3 WELL PAD
FRANKLIN DISTRICT
MARSHALL COUNTY, WV

DATE: 8/26/13
SHEET NO. 1 OF 18
DWG. NO. 093642008

47051017 38



APPROVED WVDEP OOG 11/13/2013

RECEIVED Office of Oil and Gas FEB 18 2014 WV Department of Environmental Protection

ENVIRONMENTAL RESOURCES BUFFER PLAN FOR MND 3 WELL PAD

FRANKLIN DISTRICT — MARSHALL COUNTY, WV

DATE: 8/24/13
SHEET NO. 2 OF 18
DWG. NO. 093842008

RETTEW
RETTEW Associates, Inc.
Tele Towers, 4655 Steubenville Pk, Ste 305, Pittsburgh, PA 15205
Phone (412) 446-1728 • Fax (412) 446-1733
Email: rettew@rettew.com
Website: www.rettew.com
Engineers • Planners • Surveyors • Landscape Architects • Environmental Consultants

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BEN DEREUME, PE
(724) 820-3000
ne noble energy

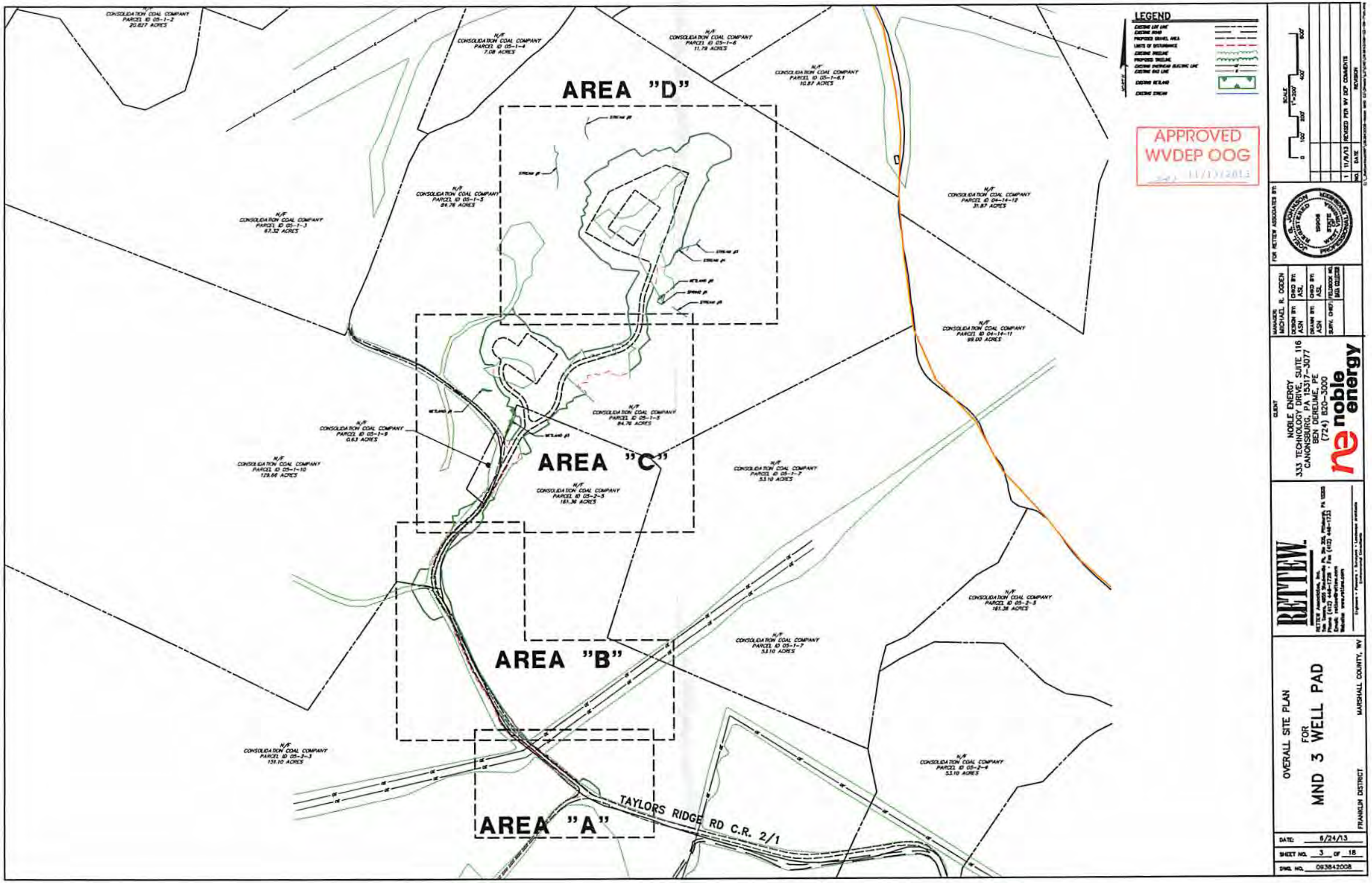
MANAGER: MICHAEL R. OGDEN
DESIGN BY: ASN — CHKD BY: ASL
DRAWN BY: ASN — CHKD BY: ASL
SURV. CHIEF: — FIELDBOOK NO.: DATA COLLECTOR

FOR RETTEW ASSOCIATES BY:
JOEL G. JOHNSON REGISTERED 19906 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

SCALE 1"=60'
0 30' 60' 120' 180'

NO.	DATE	REVISION
1	11/8/13	REVISED PER WV DEP COMMENTS

4705101738


LEGEND
AREA "D"
AREA "C"
AREA "B"
AREA "A"
TAYLORS RIDGE RD C.R. 2/1
APPROVED
WVDEP OOG
CLIENT
NOBLE ENERGY
333 TECHNOLOGY DRIVE, SUITE 116
CANONSBURG, PA 15317-3077
BEN DEREUME, PE
(724) 820-3000
noble energy
RETTEW
OVERALL SITE PLAN
FOR
MND 3 WELL PAD
FRANKLIN DISTRICT
MARSHALL COUNTY, WV
DATE: 6/24/13
SHEET NO. 3 OF 18
DWG. NO. 093842008

4705101738