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

May 22, 2014

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-8510093, issued to EQT PRODUCTION COMPANY, 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: 515275
Farm Name: BRITTON, DEWAYNE ET US
API Well Number: 47-8510093
Permit Type: Horizontal 6A Well
Date Issued: 05/22/2014

Promoting a healthy environment.

API Number:

PERMIT CONDITIONS 4708510093

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. The Office of Oil and Gas has approved your permit application, which includes your addendum. Please be advised that the addendum is part of the terms of the well work permit, and will be enforced as such. The Office of Oil and Gas must receive a copy of all data collected, and submitted in a timely fashion, but no later than the WR35 submittal.

2. 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.

3. 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.

4. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. 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.

5. 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.

6. 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.

7. 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.

PERMIT CONDITIONS

8. 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.

9. 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.

WW - 6B
(9/13)

3/28

4708510093

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
W.VA. CODE §22-6A - WELL WORK PERMIT APPLICATION

1) Well Operator: EQT Production Company

Operator ID	County	District	Quadrangle
	085	1	539

2) Operator's Well Number: 515275 Well Pad Name: PEN15

3) Farm Name/Surface Owner : Dewayne Britton et ux Public Road Access: WV-74

4) Elevation, current ground: 1,119.0 Elevation, proposed post-construction: 1,119.0

5) Well Type: (a) Gas • Oil _____ Underground Storage _____

Other _____

(b) If Gas: Shallow • Deep _____

Horizontal •

6) Existing Pad? Yes or No: yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
Target formation is Marcellus at a depth of 6395' with the anticipated thickness to be 50 feet and anticipated target pressure of 4176 PSI

8) Proposed Total Vertical Depth: 6,395
9) Formation at Total Vertical Depth: Marcellus
10) Proposed Total Measured Depth 14,326
11) Proposed Horizontal Leg Length 4,710
12) Approximate Fresh Water Strata Depths: 83, 163, 242, 394, 770, 873
13) Method to Determine Fresh Water Depth: By offset wells
14) Approximate Saltwater Depths: 1652, 1943, 2521
15) Approximate Coal Seam Depths: 14, 273, 379, 744
16) Approximate Depth to Possible Void (coal mine, karst, other): None reported
17) Does proposed well location contain coal seams directly overlying or adjacent to an active mine?
(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

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WW - 6B
(3/13)

4708510093

CASING AND TUBING PROGRAM

18)

TYPE	Size	New or Used	Grade	Weight per ft.	FOOTAGE: for Drilling	INTERVALS: Left in Well	CEMENT: Fill- up (Cu.Ft.)
Conductor	20	New	MC-50	81	40	40	38 C.T.S.
Fresh Water	13 3/8	New	MC-50	54	973	973	846 C.T.S.
Coal	-	-	-	-	-	-	-
Intermediate	9 5/8	New	MC-50	40	5,330	5,330	2,095 C.T.S.
Production	5 1/2	New	P-110	20	14,326	14,326	See Note 1
Tubing	2 3/8		J-55	4.6			May not be run, if run will be set 100' less than TD
Liners							

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	20	24	0.375	-	Construction	1.18
Fresh Water	13 3/8	17 1/2	0.38	2,480	1	1.21
Coal	-	-	-	-	-	-
Intermediate	9 5/8	12 3/8	0.395	3,590	1	1.21
Production	5 1/2	8 1/2	0.361	12,640	-	1.27/1.86
Tubing						
Liners						

Packers

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

Note 1: EQT plans to bring the TOC on the production casing cement job 1,000' above kick off point, which is at least 500' above the shallowest production zone, to avoid communication.

Dve

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

Drill and complete a new horizontal well in the Marcellus Formation. The vertical drill to go down to an approximate depth of 3620'.

Then kick off the horizontal leg into the Marcellus using a slick water frac.

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

Hydraulic fracturing is completed in accordance with state regulations using water recycled from previously fractured wells and obtained from freshwater sources. This water is mixed with sand and a small percentage (less than 0.3%) of chemicals (including 15% Hydrochloric acid, gelling agent, gel breaker, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "slickwater" completion. Maximum anticipated treating pressures are expected to average approximately 8500 psi, maximum anticipated treating rates are expected to average approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 200,000 barrels of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 200,000 pounds of sand per stage.

21) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): No additional Disturbance

22) Area to be disturbed for well pad only, less access road (acres): ±.3 ac

23) Describe centralizer placement for each casing string.

- Surface: Bow spring centralizers – One at the shoe and one spaced every 500'.
- Intermediate: Bow spring centralizers– One cent at the shoe and one spaced every 500'.
- Production: One spaced every 1000' from KOP to int csg shoe

24) Describe all cement additives associated with each cement type. Surface (Type 1 Cement): 0-3% Calcium Chloride Used to speed the setting of cement slurries.

0.4% flake. Loss Circulation Material (LCM) is used to combat the loss of the cement slurry to a thief zone.

Intermediate (Type 1 Cement): 0-3% Calcium Chloride. Salt is used in shallow, low temperature formations to speed the setting of cement slurries. 0.4% flake. Loss Circulation Material (LCM) is used to combat the loss of whole drilling fluid or cement slurry (not filtrate) to a thief zone.

Production:

Lead (Type 1 Cement): 0.2-0.7% Lignosulfonate (Retarder). Lengthens thickening time.

0.3% CFR (dispersant). Makes cement easier to mix.

Tail (Type H Cement): 0.25-0.40% Lignosulfonate (Retarder). Lengthens thickening time.

0.2-0.3% CFR (dispersant). This is to make the cement easier to mix.

60 % Calcuim Carbonate. Acid solubility.

0.4-0.6% Halad (fluid loss). Reduces amount of water lost to formation.

25) Proposed borehole conditioning procedures. Surface: Circulate hole clean (Approximately 30-45 minutes) rotating & reciprocating one full joint until cuttings diminish at surface. When cuttings returning to surface diminish, continue to circulate an additional 5 minutes. To ensure that there is no fill, short trip two stands with no circulation. If there is fill, bring compressors back on and circulate hole clean. A constant rate of higher than expected cuttings volume likely indicates washouts that will not clean up.

Intermediate: Circulate hole clean (Approximately 30-45 minutes) rotating & reciprocating one full joint until cuttings diminish at surface. When cuttings returning to surface diminish, continue to circulate an additional 5 minutes. If foam drilling, to enhance hole cleaning use a soap sweep or increase injection rate & foam concentration.

Production: Pump marker sweep with nut plug to determine actual hole washout. Calculate a gauge holes bottoms up volume. Perform a cleanup cycle by pumping 3-5 bottoms up or until the shakers are clean. Check volume of cuttings coming across the shakers every 15 minutes.

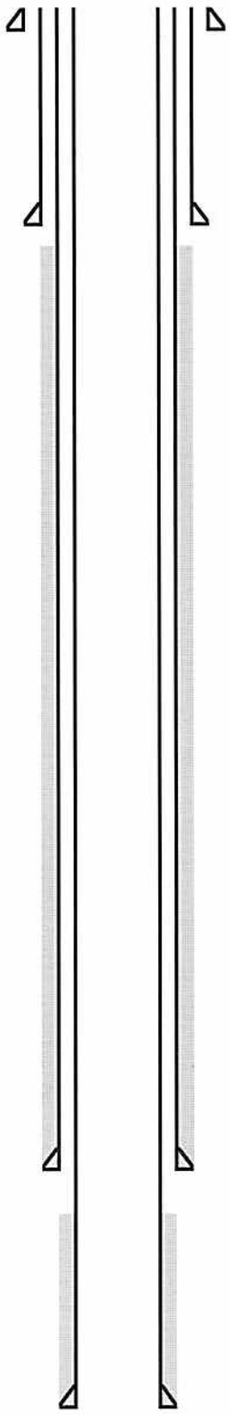
*Note: Attach additional sheets as needed.

4708510093

Well Schematic
EQT Production

Well Name	515275 (PEN15H6)
County	Ritchie
State	West Virgina

Elevation KB:	1132
Target	Marcellus
Prospect	
Azimuth	335
Vertical Section	5672



Depth	Formation	Depth
0'		0'
500'		500'
	873' Fresh Water Base	
1,000'	1,040' Base Red Rock	1,000'
1,500'		1,500'
	1,748' Maxton	
2,000'	1,967' Big Lime 2,079' Big Injun	2,000'
	2,375' Weir	
2,500'	2,580' -Gantz	2,500'
	2,719' -Fifty foot 2,801' -Thirty foot	
3,000'	2,844' -Gordon 2,926' -Forth Sand 3,114' -Bayard	3,000'
3,500'	3,464' -Warren 3,545' -Speechley	3,500'
4,000'		4,000'
	4,195' -Balltown A	
4,500'	4,580' -Riley	4,500'
5,000'	4,951' -Benson	5,000'
	5,211' -Alexander 5,330' Int. csg pt	
5,500'		5,500'
	6,105' -Sonyea 6,218' -Middlesex	
6,000'	6,275' -Genesee 6,326' -Geneseo 6,353' -Tully 6,368' -Hamilton 6,374' -Marcellus	6,000'
6,500'	6,424' Onondaga	6,500'
7,000'		7,000'
7,500'		7,500'
8,000'		8,000'

Hole Size 24" - 20" Conductor at 40'
Bit Size 17.5"

TOC @ Surface
13 3/8", MC-50, 54.5# @ 973' ft MD
Bit Size 12.375"

TOC @ Surface
9 5/8", MC-50, 40# @ 5,330' ft MD
Bit Size 8.5"

KOP = 3,620' ft MD
10 Deg DLS

Land @ 9,116' ft MD
6,395' ft TVD

5 1/2", P-110, 20# 13,826' ft MD
6,395' ft TVD

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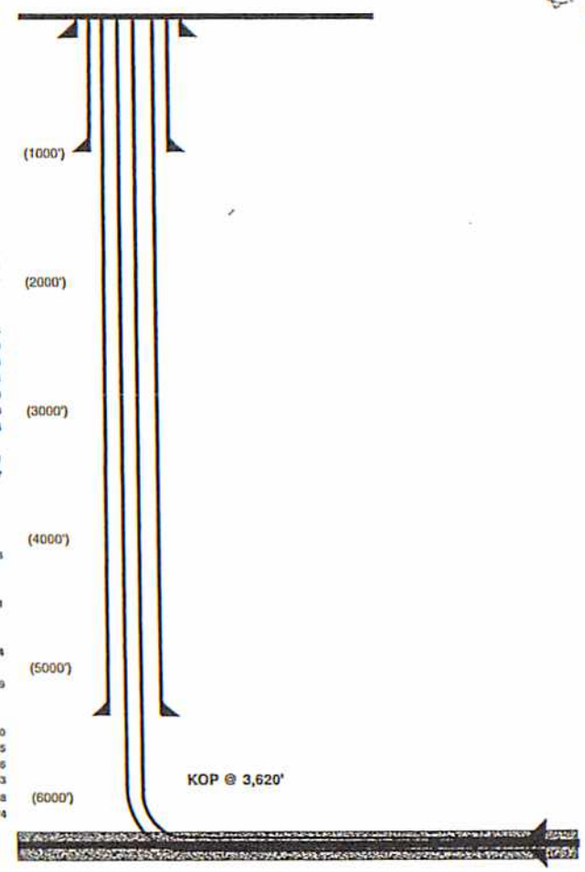
Well 515275 (PEN15H6)
EQT Production
Pennsboro
Ritchie West Virgina

Azimuth 335
Vertical Section 5672

TVD Depth (feet)	Formation Tops (TVD)		
0'			
250'			
500'			
750'			
	Base Fresh Water	873	
1,000'	Base Red Rock	1040	(1000')
1,250'			
1,500'			
1,750'	Maxton	1748 - 1780	
	Big Lime	1967 - 2036	
2,000'	Big Injun	2079 - 2147	(2000')
2,250'			
	Weir	2375 - 2473	
2,500'	-Gantz	2580 - 2649	
	-Fifty foot	2719 - 2768	
2,750'	-Thirty foot	2801 - 2834	
	-Gordon	2844 - 2890	
3,000'	-Forth Sand	2926 - 2940	(3000')
	-Bayard	3114 - 3464	
3,250'			
	-Warren	3464 - 3521	
3,500'	-Speechley	3545 - 3607	
3,750'			
4,000'			(4000')
	-Balltown A	4195 - 4248	
4,250'			
4,500'	-Riley	4580 - 4621	
4,750'			
	-Benson	4951 - 4974	
5,000'			(5000')
	-Alexander	5211 - 5239	
5,250'			
	Int. csg pt	5330	
5,500'	-Sonyea	6105 - 6130	
	-Middlesex	6218 - 6275	
5,750'	-Genesee	6275 - 6326	
	-Geneseo	6326 - 6353	
6,000'	-Tully	6353 - 6368	(6000')
	-Hamilton	6368 - 6374	
6,250'	Marcellus top	6374	
	Target Inside Marcellus	6395	
6,500'	Marcellus Bottom	6424	



Hole Size (inches)	Casing Type	Casing Size (inches)	Wt (ppf)/Grade
24	Conductor	20	
17 1/2	Surface	13 3/8	54#/MC-50
12 3/8	Intermediate	9 5/8	40#/MC-50
8 1/2	Production Casing	5 1/2	20#/P-110

Land curve @ 6,395' ft TVD
9,116' ft MD

Est. TD @ 6,395' ft TVD
13,826' ft MD

4,710' ft Lateral

Proposed Well Work:
Drill and complete a new horizontal well in the Marcellus formation.
The vertical drill to go down to an approximate depth of 3620'.
Then kick off the horizontal leg into the Marcellus using a slick water frac.

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(5/13)

API No. 47 - 085 - 0
Operator's Well No. 515275

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

Fluids/Cuttings Disposal & Reclamation Plan

Operator Name EQT Production Company OP Code ____

Watershed (HUC10) Long Run of North Fork Hughes River Quadrangle Pennsboro

Elevation 1119.0 County Ritchie District Clay

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

Will a pit be used ? Yes: ____ No: X

If so please describe anticipated pit waste: ____

Will a synthetic liner be used in the pit? Yes ____ No X If so, what ml.? 60

Proposed Disposal Method For Treated Pit Wastes:

- ____ Land Application
- ▪ Underground Injection (UIC Permit Number 0014, 8462, 4037)
- ____ Reuse (at API Number ____)
- ▪ Off Site Disposal (Supply form WW-9 for disposal location)
- ____ Other (Explain ____)

Will closed loop system be used ? Yes, The closed loop system will remove drill cuttings from the drilling fluid. The drill cuttings are then prepared for transportation to an off-site disposal facility.

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Air is used to drill the top-hole sections of the wellbore, Surface, Intermediate, and Pilot hole sections, water based mud is used to drill the curve and lateral.

If oil based, what type? Synthetic, petroleum, etc ____

Additives to be used in drilling medium? MILBAR, Viscosifer, Alkalinity Control, Lime, Chloride Salts,Rate Filtration Control, Deflocculant, Lubricant, Detergent, Defoaming, Walnut Shell, X-Cide, SOLTEX Terra. Of the listed chemicals the following are generally used when drilling on air: lubricant, detergent, defoaming. Water based fluids use the following chemicals: MILBAR, viscosifer, alkalinity control, lime, chloride salts, rate filtration control, deflocculant, lubricant, detergent, defoaming, walnut shell, x-cide, SOLTEX terra

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

- If left in pit and plan to solidify what medium will be used? (Cement, Line, sawdust) n/a
- Landfill or offsite name/permit number? See Attached List

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 ____
Company Official (Typed Name) Victoria J. Roark
Company Official Title Permitting Supervisor

Subscribed and sworn before me this 20 day of March, 20 14

____ Notary Public

My commission expires 8-24-22

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Pamela Sykes
EQT Production
PO Box 280
Bridgeport, WV 26330
My Commission Expires Aug. 24, 2022

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MAR 28 2014
WV Department of
Environmental Protection

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WW-9

Operator's Well No. 515275

Proposed Revegetation Treatment: Acres Disturbed ±.3 ac Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilize type

Fertilizer Amount 1/3 lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre

Seed Mixtures

Temporary Seed Type	lbs/acre	Permanent Seed Type	lbs/acre
KY-31	40	Orchard Grass	15
Alsike Clover	5	Alsike Clover	5
Annual Rye	15		

Attach:
Drawing(s) of road, location,pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: David W Cann

Comments: pressed & mulch all cut area no less than 2 ton per acre install and maintain all C & S during operation

Title: oil & gas inspector Date: 4-2-14

Field Reviewed? (✓) Yes ( ) No

EQT Production Water plan
Offsite disposals for Marcellus wells

4708510093

CWS TRUCKING INC.
P.O. Box 391
Williamstown, WV 26187
740-516-3586
Noble County/Noble Township
Permit # 3390

LAD LIQUID ASSETS DISPOSAL INC.
226 Rankin Road
Washington, PA 15301
724-350-2760
724-222-6080
724-229-7034 fax
Ohio County/Wheeling
Permit # USEPA WV 0014

TRI COUNTY WASTE WATER MANAGEMENT, INC.
1487 Toms Run Road
Holbrook, PA 15341
724-627-7178 Plant
724-499-5647 Office
Greene County/Waynesburg
Permit # TC-1009

Waste Management - Meadowfill Landfill
Rt. 2, Box 68 Dawson Drive
Bridgeport, WV 26330
304-326-6027
Permit #SWF-1032-98
Approval #100785WV

Waste Management - Northwestern Landfill
512 E. Dry Road
Parkersburg, WV 26104
304-428-0602
Permit #SWF-1025 WV-0109400
Approval #100833WV

BROAD STREET ENERGY LLC
37 West Broad Street
Suite 1100
Columbus, Ohio 43215
740-516-5381
Washington County/Belpre Twp.
Permit # 8462

TRIAD ENERGY
P.O. Box 430
Reno, OH 45773
740-516-6021 Well
740-374-2940 Reno Office Jennifer
Nobel County/Jackson Township
Permit # 4037

KING EXCAVATING CO.
Advanced Waste Services
101 River Park Drive
New Castle, Pa. 16101
Facility Permit# PAR000029132

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MAR 28 2014
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EQT

Where energy meets innovation.™

Site Specific Safety Plan

EQT PEN 15 Pad

Pennsboro

Ritchie County, WV

For Wells:

515275	515276	515277	515278	515279		

Date Prepared: March 17, 2014

EQT Production

Title: Permitting Supervisor

3-24-14
Date

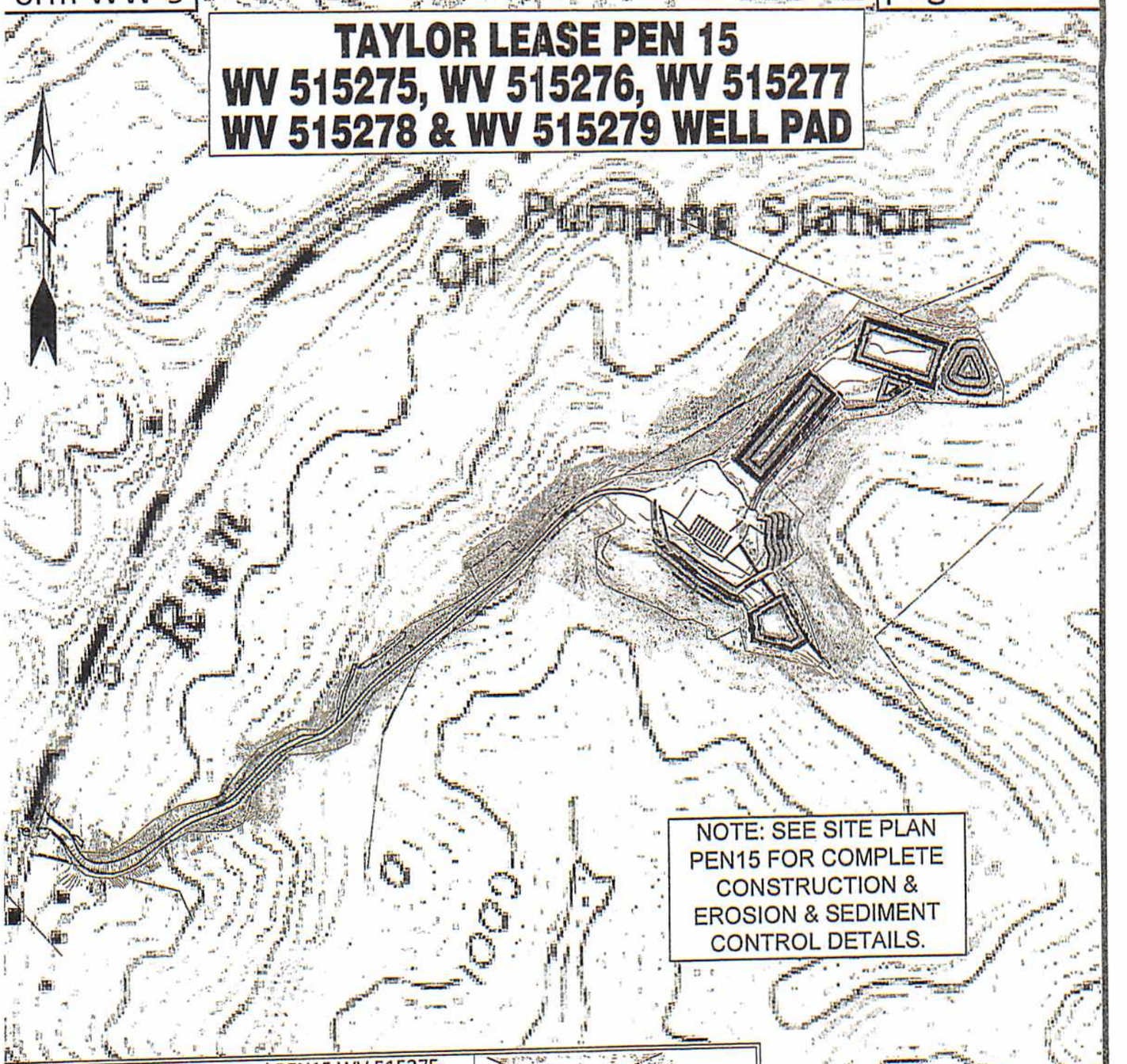
WV Oil and Gas Inspector

Title

4-2-14
Date

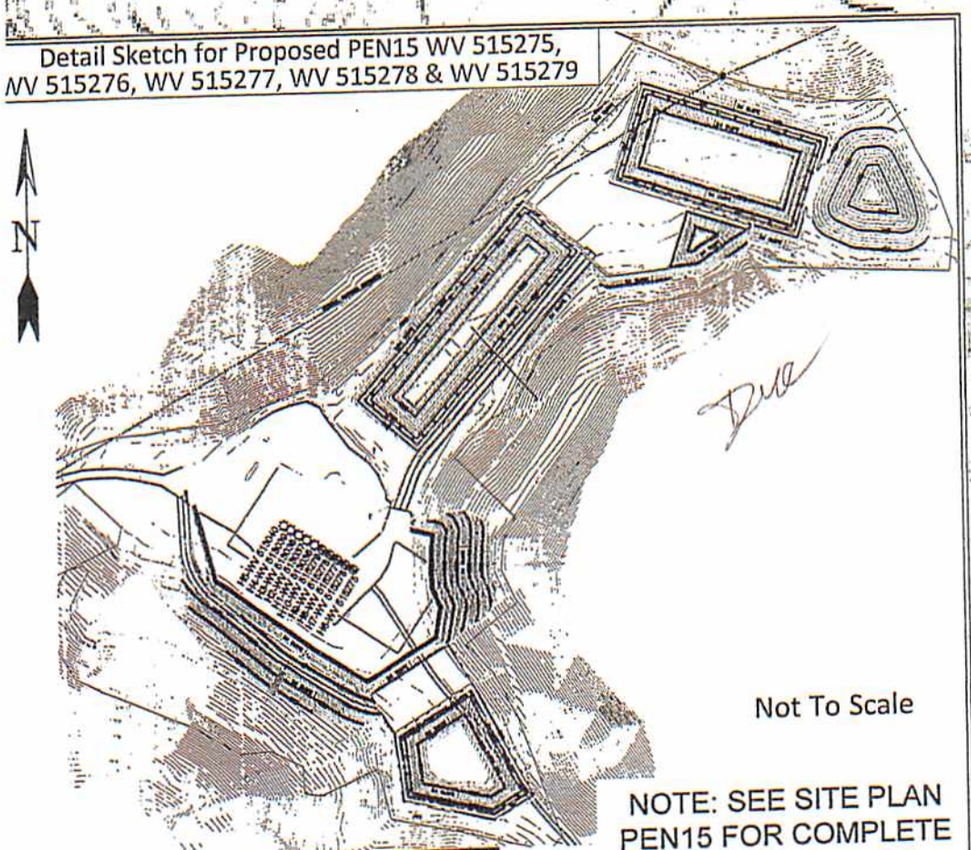
Form WW-9 | 47-085-10093 | page of

TAYLOR LEASE PEN 15
WV 515275, WV 515276, WV 515277
WV 515278 & WV 515279 WELL PAD



NOTE: SEE SITE PLAN PEN15 FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.

Detail Sketch for Proposed PEN15 WV 515275, WV 515276, WV 515277, WV 515278 & WV 515279



Not To Scale

NOTE: SEE SITE PLAN PEN15 FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.

SCALE: 1"=500'

0' 500' 1000'

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.
SLS SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.
(304) 462-5634 WWW.SLSSURVEYS.COM

TOPO SECTION OF PENNSBORO 7.5'
USGS TOPO QUADRANGLE

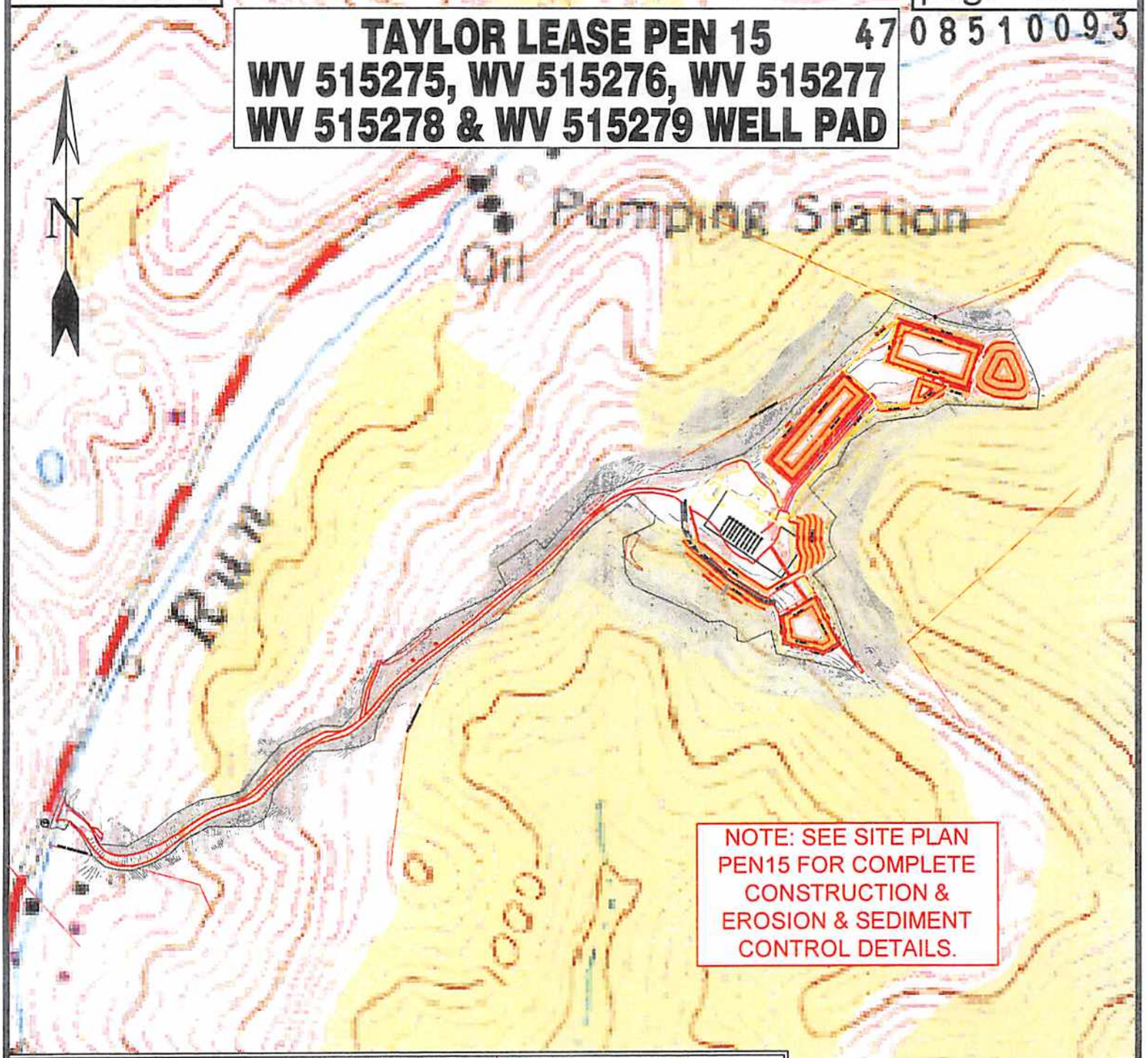
DRAWN BY	FILE NO.	DATE	CADD FILE:
		01-31-14	

Form WW-9

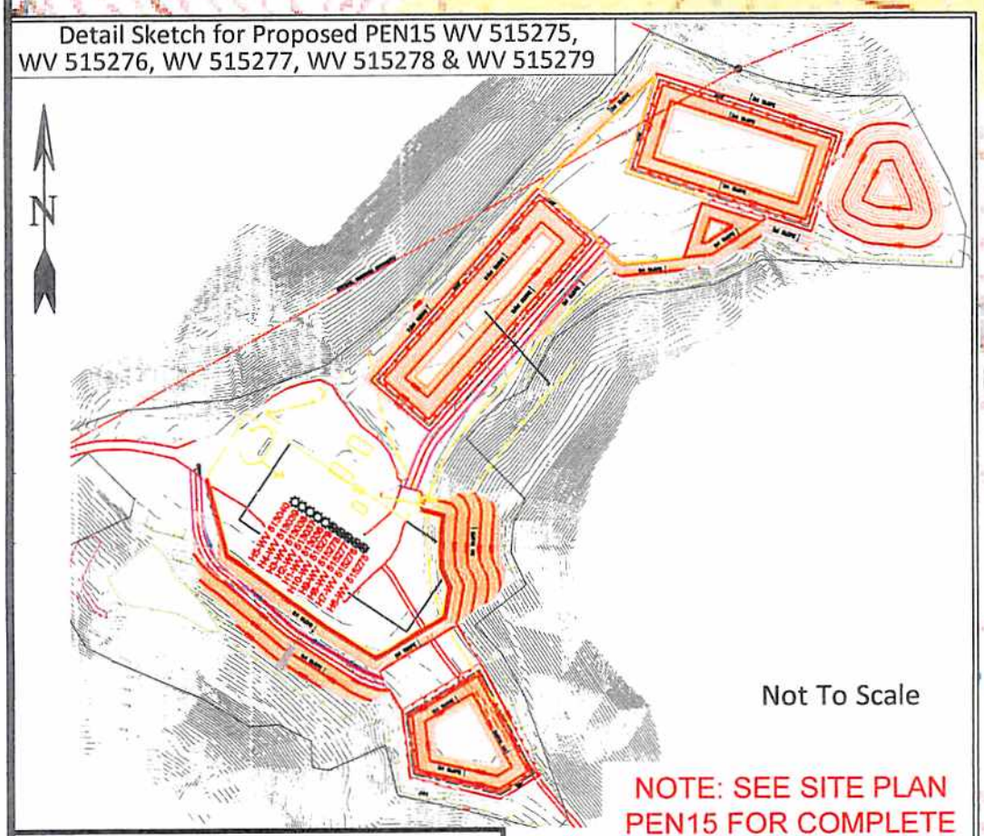
page of

TAYLOR LEASE PEN 15
WV 515275, WV 515276, WV 515277
WV 515278 & WV 515279 WELL PAD

4708510093



Detail Sketch for Proposed PEN15 WV 515275, WV 515276, WV 515277, WV 515278 & WV 515279



Not To Scale

NOTE: SEE SITE PLAN PEN15 FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.
SLS
SURVEYORS
ENGINEERS
ENVIRONMENTAL
PROJECT MGMT.
(304) 462-5634
WWW.SLSSURVEYS.COM

DRAWN BY	FILE NO.	DATE	CADD FILE:
K.D.W.	7496	01-31-14	7496REC-PEN15.dwg

TOPO SECTION OF PENNSBORO 7.5'
USGS TOPO QUADRANGLE

RECEIVED
Office of Oil and Gas
MAR 28 2014
Department of
Environmental Protection

SCALE: 1"=500'

0' 500' 1000'

FORM WW 6

EQT PRODUCTION COMPANY
TAYLOR LEASE
1,600 ACRES±
WELL NO. WV 515275

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

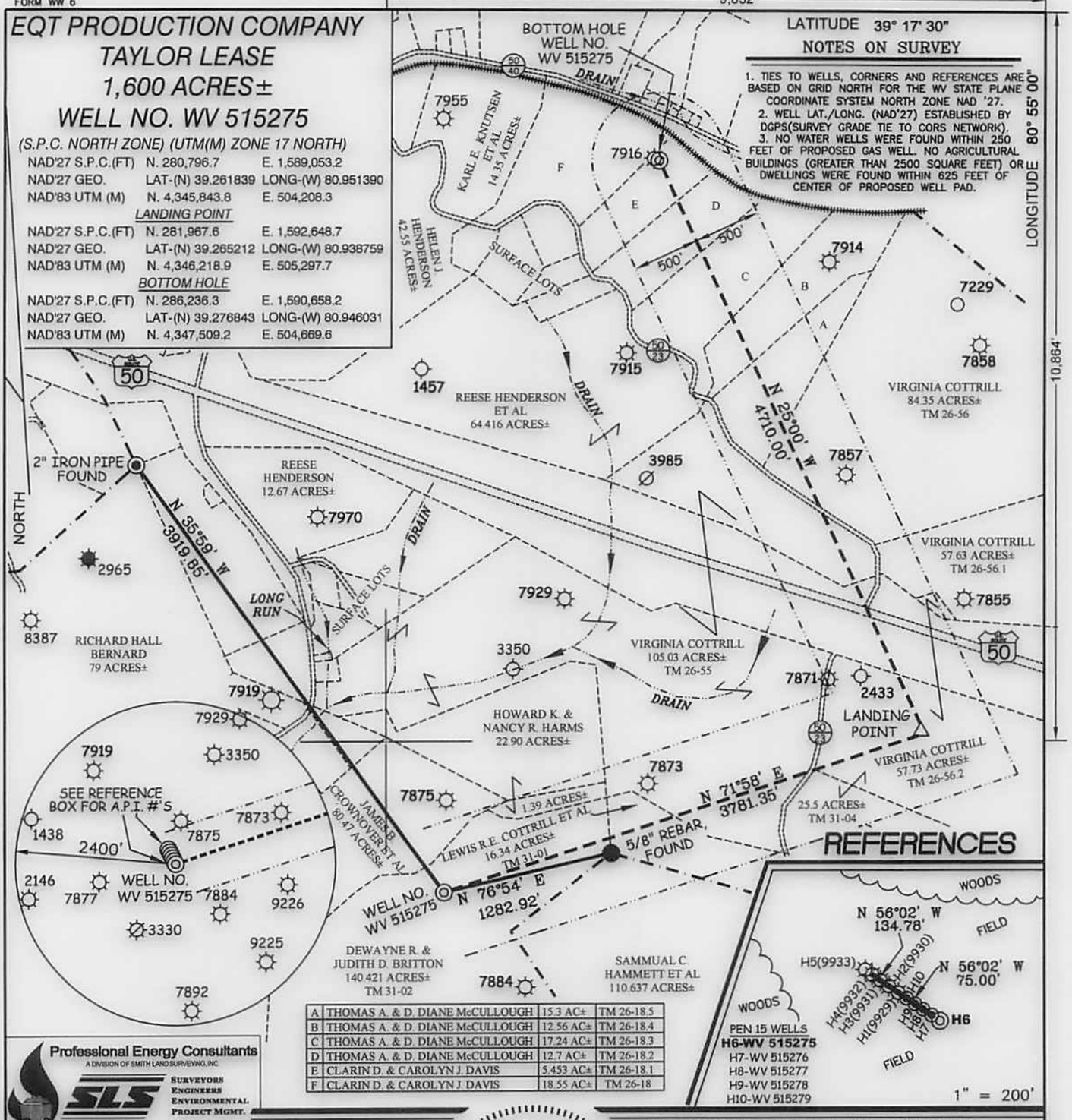
NAD'27 S.P.C.(FT)	N. 280,796.7	E. 1,589,053.2
NAD'27 GEO.	LAT-(N) 39.261839	LONG-(W) 80.951390
NAD'83 UTM (M)	N. 4,345,843.8	E. 504,208.3
LANDING POINT		
NAD'27 S.P.C.(FT)	N. 281,967.6	E. 1,592,648.7
NAD'27 GEO.	LAT-(N) 39.265212	LONG-(W) 80.938759
NAD'83 UTM (M)	N. 4,346,218.9	E. 505,297.7
BOTTOM HOLE		
NAD'27 S.P.C.(FT)	N. 286,236.3	E. 1,590,658.2
NAD'27 GEO.	LAT-(N) 39.276843	LONG-(W) 80.946031
NAD'83 UTM (M)	N. 4,347,509.2	E. 504,669.6

LATITUDE 39° 17' 30"

LONGITUDE 80° 55' 00"

NOTES ON SURVEY

1. TIES TO WELLS, CORNERS AND REFERENCES ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SURVEY GRADE TIE TO CORS NETWORK).
3. NO WATER WELLS WERE FOUND WITHIN 250 FEET OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS (GREATER THAN 2500 SQUARE FEET) OR DWELLINGS WERE FOUND WITHIN 625 FEET OF CENTER OF PROPOSED WELL PAD.



A	THOMAS A. & D. DIANE McCULLOUGH	15.3 AC±	TM 26-18.5
B	THOMAS A. & D. DIANE McCULLOUGH	12.56 AC±	TM 26-18.4
C	THOMAS A. & D. DIANE McCULLOUGH	17.24 AC±	TM 26-18.3
D	THOMAS A. & D. DIANE McCULLOUGH	12.7 AC±	TM 26-18.2
E	CLARIN D. & CAROLYN J. DAVIS	5.453 AC±	TM 26-18.1
F	CLARIN D. & CAROLYN J. DAVIS	18.55 AC±	TM 26-18

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.
SLS SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.
(304) 462-8634 WWW.SLSSURVEYS.COM

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

P.S. 677 Gregory A. Smith

GREGORY A. SMITH LICENSED No. 677 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

DATE JANUARY 10 , 20 14

REVISED _____ , 20 _____

OPERATORS WELL NO. WV 515275

API WELL NO. 47 — 85 — 10093H6A
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 7496P515275

SCALE 1" = 1000'

PROVEN SOURCE OF ELEVATION DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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

WELL TYPE: OIL ____ GAS X INJECTION ____ WASTE DISPOSAL ____ IF "GAS" PRODUCTION X STORAGE ____ DEEP ____ SHALLOW X

LOCATION:

ELEVATION 1,119' (PAD ELEVATION) WATERSHED LONG RUN OF NORTH FORK HUGHES RIVER

DISTRICT CLAY COUNTY RITCHIE QUADRANGLE PENNSBORO 7.5'

SURFACE OWNER DEWAYNE BRITTON ET UX ACREAGE 140.421

ROYALTY OWNER E. R. TAYLOR HEIRS ACREAGE 1,600±

PROPOSED WORK: 105804

DRILL X CONVERT ____ DRILL DEEPER ____ REDRILL ____ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ____ PERFORATE NEW FORMATION ____ PLUG AND ABANDON ____ CLEAN OUT AND REPLUG ____ OTHER ____

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS

ESTIMATED DEPTH 6395 TVD

COUNTY NAME

PERMIT

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT REX C. RAY

ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 ADDRESS 115 PROFESSIONAL PLACE

BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330