



---

**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](http://www.dep.wv.gov)

December 08, 2014

**WELL WORK PERMIT**

**Horizontal 6A Well**

This permit, API Well Number: 47-10303043, 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: 513920

Farm Name: DALLISON, RICHARD ET AL

**API Well Number: 47-10303043**

**Permit Type: Horizontal 6A Well**

Date Issued: 12/08/2014

**Promoting a healthy environment.**

# 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. The entire well pad shall be bermed, including a mountable berm at the well pad entrances, to prevent runoff from leaving the pad during drilling and completion operations.
2. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE 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.
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.
10. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

47 10303043

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	103	4	254
County		District	Quadrangle

2) Operator's Well Number: 513920 Well Pad Name: BIG192

3) Farm Name/Surface Owner: Dallison Public Road Access: 7/6

4) Elevation, current ground: 1,452.0 Elevation, proposed post-construction: 1,452.0

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 7655 with the anticipated thickness to be 53 feet and anticipated target pressure of 4841 PSI

8) Proposed Total Vertical Depth: 7655

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 15579

11) Proposed Horizontal Leg Length: 7,060

12) Approximate Fresh Water Strata Depths: 549, 581, 780

13) Method to Determine Fresh Water Depth: By offset wells

14) Approximate Saltwater Depths: 2257, 2370

15) Approximate Coal Seam Depths: 743, 804, 919, 1009, 1240

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: \_\_\_\_\_

*DMH  
9-10-14*

RECEIVED  
Office of Oil and Gas  
SEP 15 2014  
WV Department of  
Environmental Protection

CASING AND TUBING PROGRAM

18)

<u>TYPE</u>	<u>Size</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft.</u>	<u>FOOTAGE: for Drilling</u>	<u>INTERVALS: Left in Well</u>	<u>CEMENT: Fill-up (Cu.Ft.)</u>
Conductor	26	New	MC-50	Varies	80	80	98 C.T.S.
Fresh Water	13 3/8	New	MC-50	54	1,000	1,000	868 C.T.S.
Coal	-	-	-	-	-	-	-
Intermediate	9 5/8	New	MC-50	40	2,765	2,765	1,079 C.T.S.
Production	5 1/2	New	P-110	20	15,579	15,579	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							

<u>TYPE</u>	<u>Size</u>	<u>Wellbore Diameter</u>	<u>Wall Thickness</u>	<u>Burst Pressure</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	26	30	0.5	-	Construction	1.18
Fresh Water	13 3/8	17 1/2	0.38	2,480	* See Note 2	1.21
Coal						
Intermediate	9 5/8	12 3/8	0.395	3,590	* See Note 2	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.

**Note 2:** Reference Variance 2014-17. (Attached)

DMH  
9-10-14

RECEIVED  
Office of Oil and Gas

SEP 15 2014

WV Department of  
Environmental Protection

(3/13)

4710303043

19) 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 7002 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): no additional disturbance

- 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 % Calcium 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.

DNH 9-10-14

SEP 15 2014



4710303043

west virginia department of environmental protection

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

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

March 18, 2014

Nabors Completion & Production Services Company  
1380 Route 286 Hwy E #121  
Indiana PA 15701

Re: Cement Variance Request

Dear Sir or Madam,

This agency is approving a variance request for the cement blend listed below to be used on surface and coal protection strings for the drilling of oil and gas wells in the state of West Virginia. The variance cannot be used without requesting its use on a permit application and approval by this agency:

- Type 1 (2% Calcium Chloride-Accelerator, 0.25% Super Flake-Lost Circulation, 5.2% Water, 94% Type "1" Cement)

If you have any questions regarding this matter feel free to contact me at 304-926-0499, ext. 1653.

Sincerely,

James Peterson  
Environmental Resources Specialist / Permitting

Promoting a healthy environment.

RECEIVED  
Office of Oil and Gas

SEP 15 2014

WV Department of  
Environmental Protection

47 10303043



west virginia department of environmental protection

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

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

**BEFORE THE OFFICE OF OIL AND GAS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
STATE OF WEST VIRGINIA**

IN THE MATTER OF A VARIANCE FROM )                   ORDER NO. 2014 - 17  
REGULATION 35 CSR § 4-11.4/11.5/14.1 )  
AND 35 CSR § 8-9.2.h. 4/5/6/8 OF THE )  
THE OPERATIONAL )  
REGULATIONS OF CEMENTING OIL )  
AND GAS WELLS )

**REPORT OF THE OFFICE**

Nabors Completion & Production Services Co. requests approval of a different cement blend for use in cementing surface and coal protection casing of oil and gas wells.

**FINDINGS OF FACT**

- 1.) Nabors Completion & Production Services Co. proposes the following cement blend:
  - 2% Calcium Chloride (Accelerator)
  - 0.25 % Super Flake (Lost Circulation)
  - 94% Type "1" Cement
  - 5.20 % Water
  
- 2.) Laboratory testing results indicate that the blend listed in Fact No.1 will achieve a 500 psi compressive strength within 6 hours and a 2,435 psi compressive strength within 24 hours.

Promoting a healthy environment.

RECEIVED  
Office of Oil and Gas

SEP 15 2014

WV Department of  
Environmental Protection

47 10303043

**CONCLUSIONS OF LAW**

Pursuant to Articles 6 and 6A, Chapter 22 of the Code of West Virginia, the Office of Oil and Gas has jurisdiction over the subject matter embraced in said notice, and the persons interested therein, and jurisdiction to promulgate the hereinafter prescribed Order.

Pursuant to 35 CSR § 4-11.5 and 35 CSR § 8-9.2.h.8 the Chief of the Office of Oil and Gas may approve different cement blends upon the well operator providing satisfactory proof that different cement types are adequate.

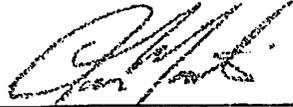
**ORDER**

It is ordered that Nabors Completion & Production Services Co. may use the cement blend listed in Findings of Fact No.1 for the cementing of surface and coal protection casing of oil and gas wells in the State as may be requested by oil and gas operators. The waiting time on the cement blend shall be 8 hours. The cement blend shall be mixed in strict accordance with the specifications for each blend and weight measurements made on-site to assure the cement slurries meet the minimum weight specifications. A sample shall be collected and, if after 8 hours the cement is not set up, additional time will be required. Nabors Completion & Production Services Co. shall keep a record of cement blend jobs in which the cement blend approved under this order is to be used and made available to the Office of Oil and Gas upon request.

Dated this, the 18th day of March, 2014.

IN THE NAME OF THE STATE OF WEST VIRGINIA

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



James Martin, Chief  
Office of Oil and Gas

RECEIVED  
Office of Oil and Gas

SEP 15 2014

WV Department of  
Environmental Protection

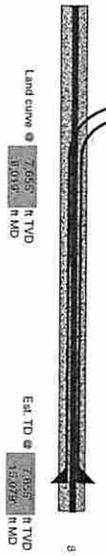
4710303043

Well: S19292(B1G192H16)  
 EOT Production  
 Big Run  
 Wetzel  
 West Virginia

Admin: 343  
 Vertical section: 798

TVD Depth (ft)	Formation Top (TVD)	Formation	Hole Size (inches)	Casing Type	Casing Size (inches)	WT (ppb)/Grade
250'	780	Best Fresh Water	17 1/2"	Surface	13 3/8"	54M/C-50
580'	918	Best Fresh Water	17 1/2"	Surface	13 3/8"	54M/C-50
750'		Best Fresh Water	17 1/2"	Surface	13 3/8"	54M/C-50
1,000'		Best Fresh Water	17 1/2"	Surface	13 3/8"	54M/C-50
1,250'		Best Fresh Water	17 1/2"	Surface	13 3/8"	54M/C-50
1,500'		Best Fresh Water	17 1/2"	Surface	13 3/8"	54M/C-50
1,750'		Best Fresh Water	17 1/2"	Surface	13 3/8"	54M/C-50
2,000'		Best Fresh Water	17 1/2"	Surface	13 3/8"	54M/C-50
2,250'		Best Fresh Water	17 1/2"	Surface	13 3/8"	54M/C-50
2,500'	2351	Marston	12 3/8"	Intermediate	9 5/8"	40M/C-50
2,750'	2481	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
3,000'	2627	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
3,250'	2662	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
3,500'	2697	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
3,750'	2732	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
4,000'	2767	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
4,250'	2802	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
4,500'	2837	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
4,750'	2872	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
5,000'	2907	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
5,250'	2942	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
5,500'	2977	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
5,750'	3012	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
6,000'	3047	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
6,250'	3082	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
6,500'	3117	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
6,750'	3152	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
7,000'	3187	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
7,250'	3222	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
7,500'	3257	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
7,750'	3292	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50
8,000'	3327	Big Lime	12 3/8"	Intermediate	9 5/8"	40M/C-50

Proposed Well Work:  
 Drill and complete a new horizontal well in the Marcellus formation.  
 This vertical well to go down to an approximate depth of 7002'.  
 Then kick off the horizontal leg into the Marcellus using a slick water frac.



*DMH  
 5-10-14*

RECEIVED  
 Office of Oil and Gas  
 SEP 15 2014  
 WV Department of  
 Environmental Protection

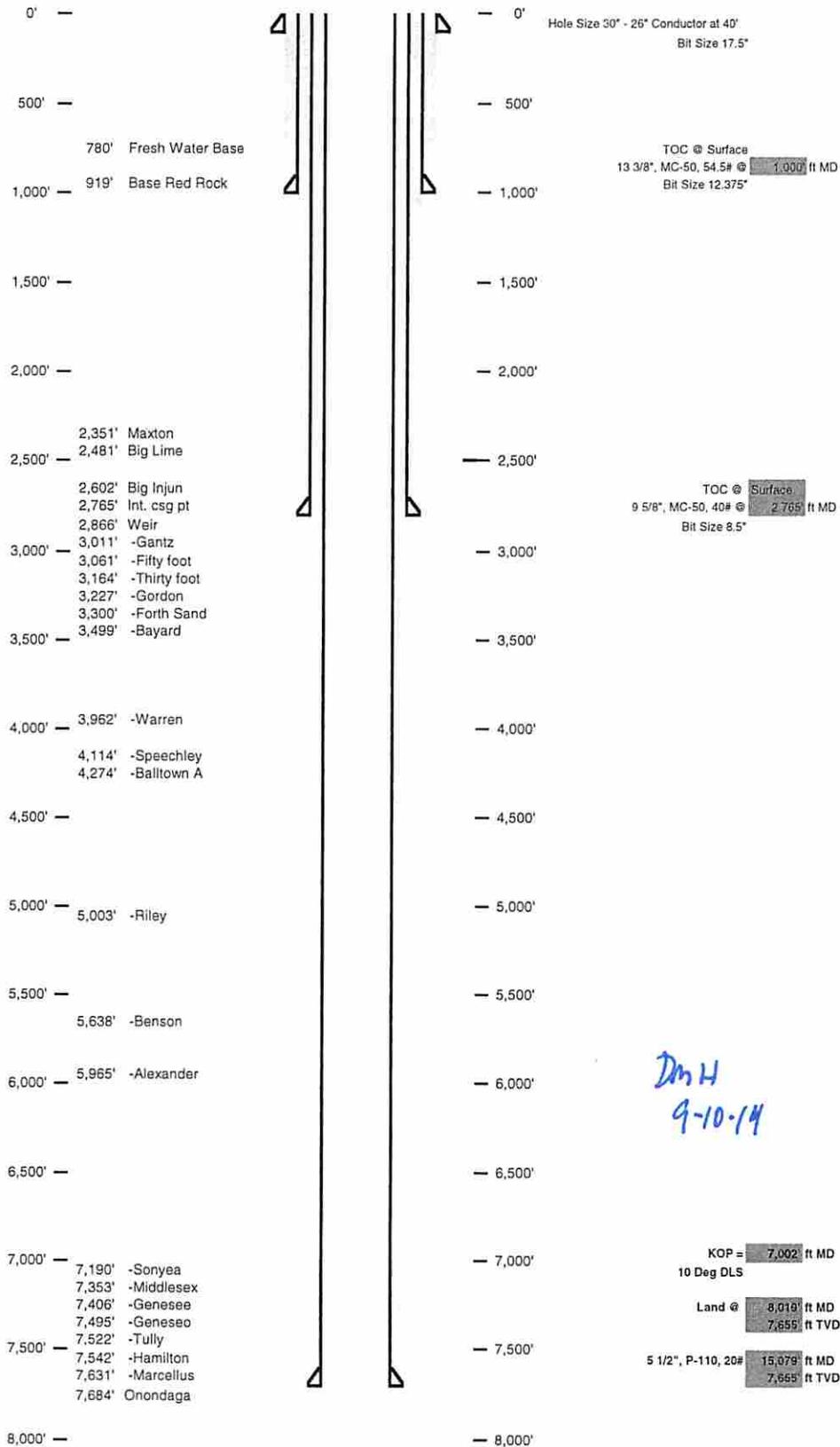
Well Schematic  
EQT Production

47 10303043

Well Name: E19920 (BIG192H16)  
County: Welzel  
State: West Virginia

Elevation KB:  
Target  
Prospect  
Azimuth  
Vertical Section

1485  
Marcellus  
345  
7698



WW-9  
(5/13)

Page \_\_\_\_\_ of \_\_\_\_\_  
API No. 47 - 103 - 4710303043  
Operator's Well No. 513920

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

Fluids/Cuttings Disposal & Reclamation Plan

Operator Name EQT Production Co. OP Code \_\_\_\_\_  
Watershed (HUC10) Aunty Run of South Fork Fishing Creek Quadrangle Big Run 7.5  
Elevation 1452.0 County Wetzel District Grant

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

*DMH  
GHOY*

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfill  
- If left in pit and plan to solidify what medium will be used? (Cement, Lime, sawdust) 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.

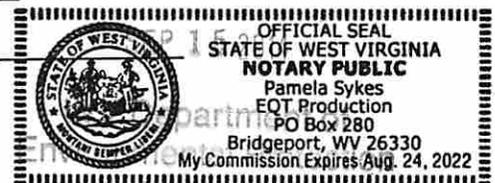
Company Official Signature \_\_\_\_\_  
Company Official (Typed Name) Victoria J. Roark  
Company Official Title Permitting Supervisor

Subscribed and sworn before me this 6 day of Sept, 2014

*Pamela Sykes*

RECEIVED  
Office of Oil and Gas  
Notary Public

My commission expires 8-24-22



Proposed Revegetation Treatment: Acres Disturbed no additional disturbance Prevegetation pH 6.5

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		Permanent	
Seed Type	lbs/acre	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: [Signature]

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Title: Oil + Gas Inspector Date: 9-10-14

Field Reviewed? (   /   ) Yes ( \_\_\_\_\_ ) No

RECEIVED  
Office of Oil and Gas  
SEP 15 2014

WV Department of  
Environmental Protection

**EQT Production Water plan**  
**Offsite disposals for Marcellus wells**

4710303043

**CWS TRUCKING INC.**

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

**BROAD STREET ENERGY LLC**

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

**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

**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

**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

**KING EXCAVATING CO.**

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

**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

DMH  
9-10-14



Where energy meets innovation.™

47 10303043

# Site Specific Safety Plan

EQT BIG 192 Pad

Jacksonburg

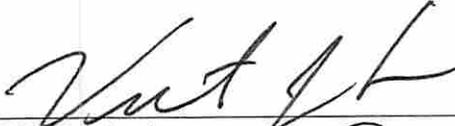
Wetzel County, WV

For Wells: \_\_\_\_\_

513916      513917      513918      513920      \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

  
 \_\_\_\_\_  
 EQT Production

Permitting Supervisor  
 Title

9-4-14  
 Date

Date Prepared:

August 21, 2014

  
 \_\_\_\_\_  
 WV Oil and Gas Inspector

Oil + Gas Inspector  
 Title

9-10-14  
 Date

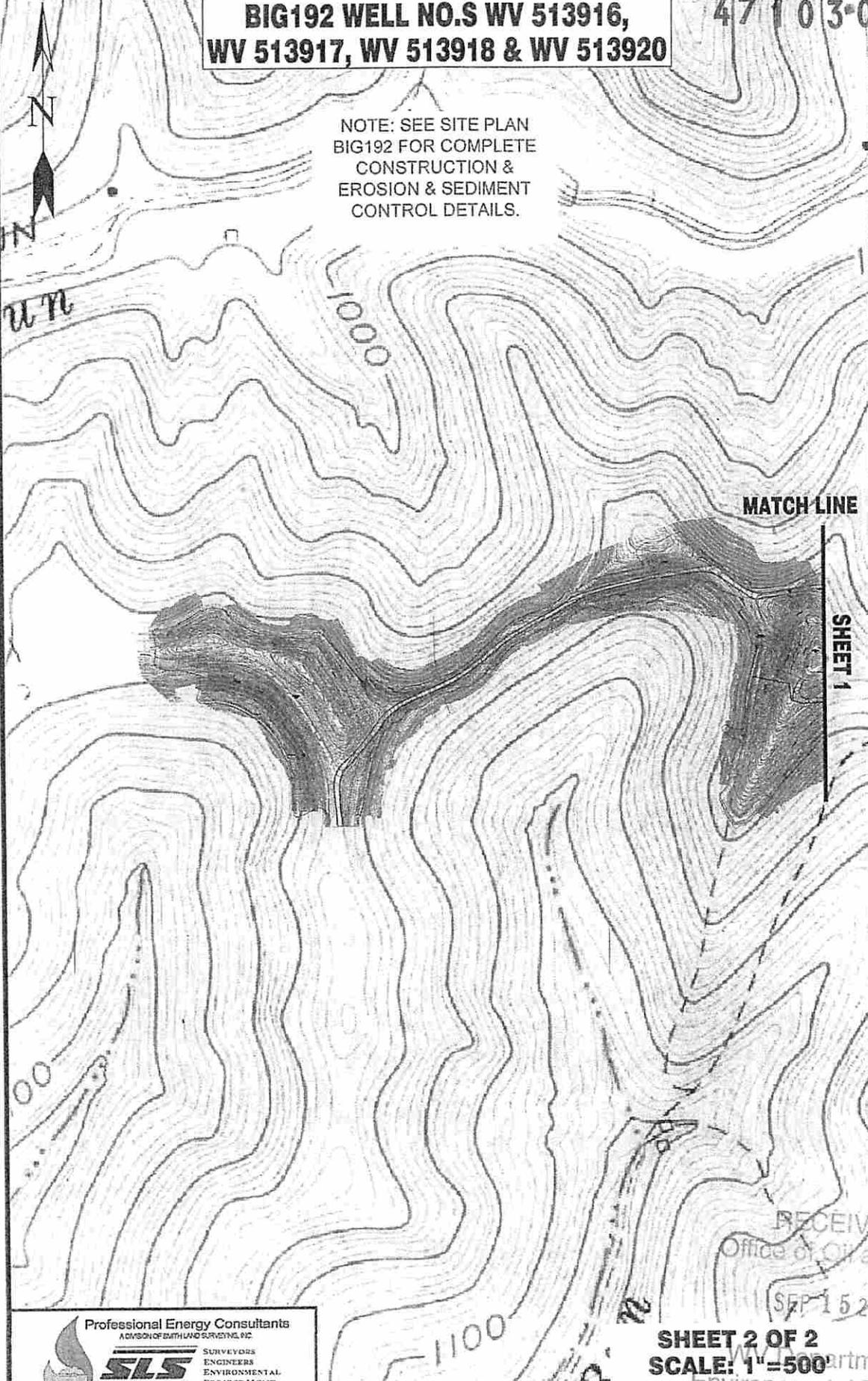
RECEIVED  
 Office of Oil and Gas

SEP 15 2014

WV Department of  
 Environmental Protection

**ROBINSON LEASE**  
**BIG192 WELL NO.S WV 513916,**  
**WV 513917, WV 513918 & WV 513920**

NOTE: SEE SITE PLAN  
BIG192 FOR COMPLETE  
CONSTRUCTION &  
EROSION & SEDIMENT  
CONTROL DETAILS.



**MATCH LINE**

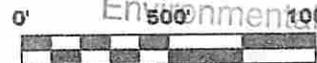
**SHEET 1**

*DMH*  
*9-10-14*

RECEIVED  
Office of Oil and Gas

SEP 15 2014

**SHEET 2 OF 2**  
**SCALE: 1"=500'**



Professional Energy Consultants  
A DIVISION OF EARTH LAND SURVEYING, INC.



**SLS**  
SURVEYORS  
ENGINEERS  
ENVIRONMENTAL  
PROJECT MGMT.

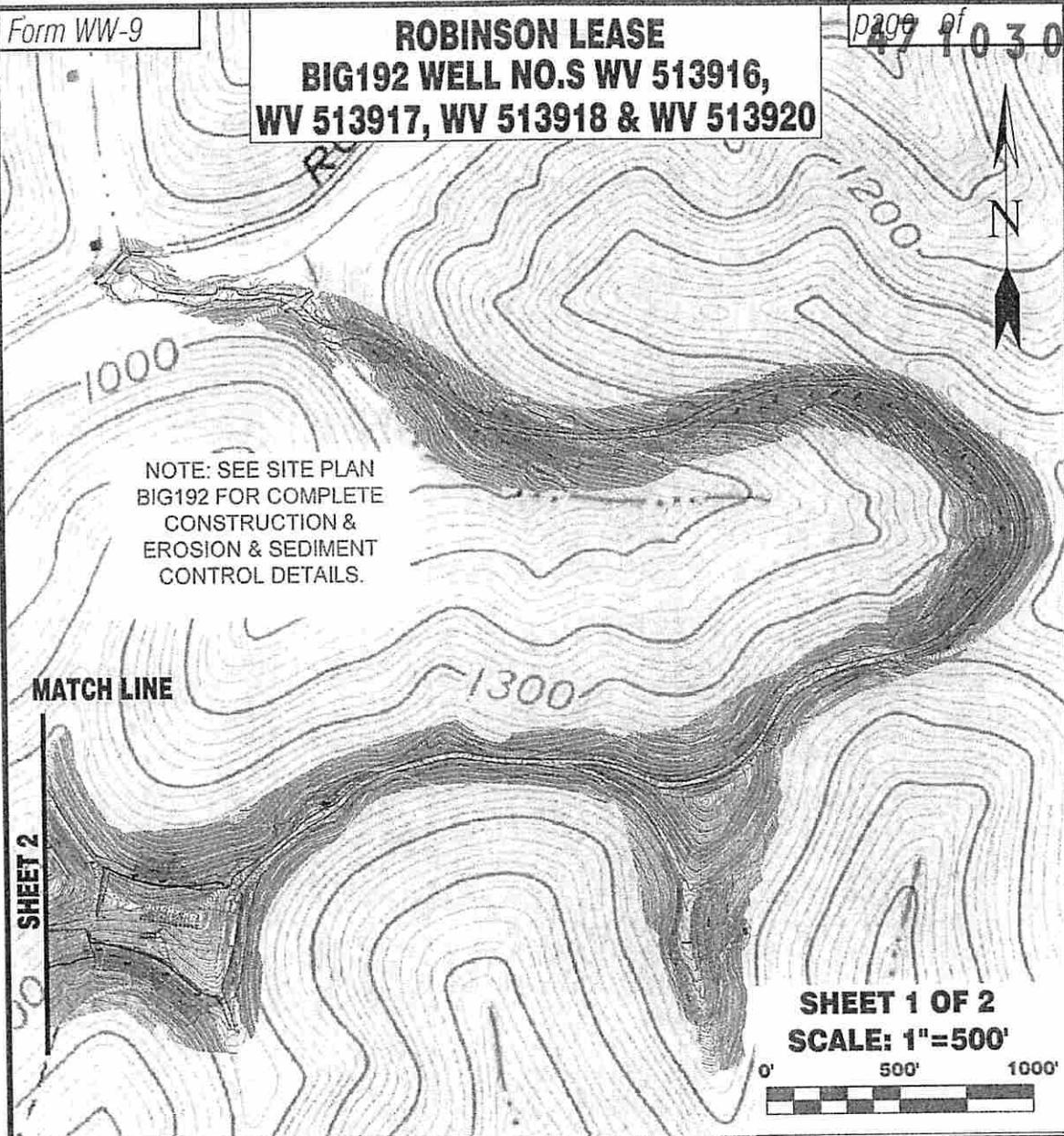
(304) 452-5534 www.slsurveyors.com

DRAWN BY K.D.W.	FILE NO. 7797	DATE 08-21-14	CADD FILE: 7797REC09162.dwg
--------------------	------------------	------------------	--------------------------------

TOPO SECTIONS OF BIG RUN 7.5'  
TOPO QUADRANGLE

Department of  
Environment and Protection

**ROBINSON LEASE  
BIG192 WELL NO.S WV 513916,  
WV 513917, WV 513918 & WV 513920**

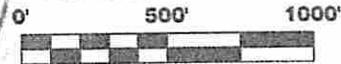


NOTE: SEE SITE PLAN  
BIG192 FOR COMPLETE  
CONSTRUCTION &  
EROSION & SEDIMENT  
CONTROL DETAILS.

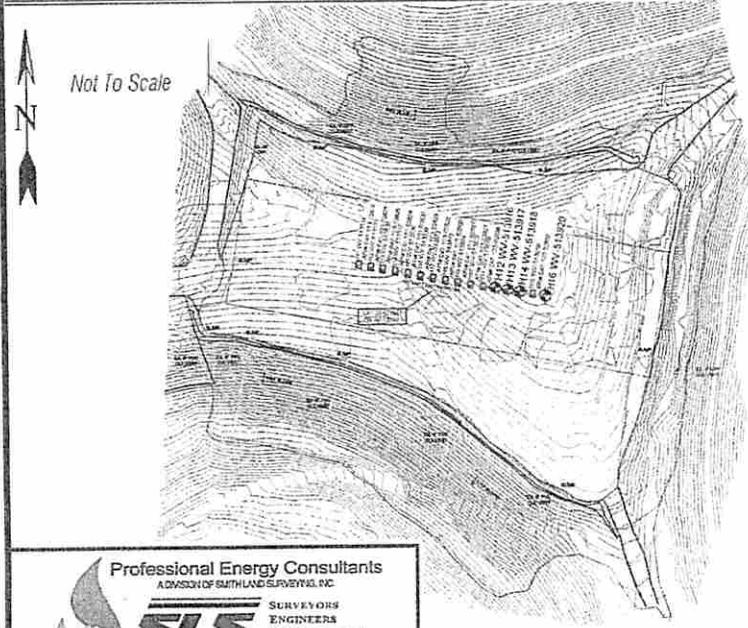
MATCH LINE

SHEET 2

**SHEET 1 OF 2  
SCALE: 1"=500'**



Detail Sketch for Proposed BIG192 Well No.s WV 513916, WV 513917, WV 513918 & WV 513920



NOTE: SEE SITE PLAN  
BIG192 FOR COMPLETE  
CONSTRUCTION &  
EROSION & SEDIMENT  
CONTROL DETAILS.

DMH  
9-10-14

Professional Energy Consultants  
A DIVISION OF SMITH LAND SURVEYS, INC.



**SLS**  
SURVEYORS  
ENGINEERS  
ENVIRONMENTAL  
PROJECT MGMT.  
DD4 462 5634 WWW.SLSURVEYS.COM

TOPO SECTIONS OF BIG RUN 7.5'  
TOPO QUADRANGLE

DRAWN BY K.D.W.	FILE NO. 7797	DATE 08-21-14	CADD FILE: 7797REGDR181.dwg
--------------------	------------------	------------------	--------------------------------

**WELL OPERATOR** EQT PRODUCTION COMPANY  
**DESIGNATED AGENT** REX C. RAY  
**ADDRESS** 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330

**WELL TYPE:** OIL  GAS  INJECTION  WASTE LIQUID  GAS "PRODUCTION"  STORAGE  DEEP  SHALLOW

**LOCATION:** ELEVATION 1,452' (PAD ELEVATION) WATERSHED AUNTY RUN OF SOUTH FORK FISHING CREEK DISTRICT GRANT COUNTY WETZEL COUNTY QUADRANGLE BIG RUN 7.5 SURFACE OWNER RICHARD DALLISON ET AL ROYALTY OWNER ED BROOME, INC ET AL PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER  MARCELLUS  ESTIMATED DEPTH TVD 7,631'

**PERMIT** COUNTY NAME: LEASE NO. 104225 ACREAGE 1,100± ACREAGE 879.30± QUADRANGLE BIG RUN 7.5 DISTRICT GRANT COUNTY WETZEL COUNTY QUADRANGLE BIG RUN 7.5 SURFACE OWNER RICHARD DALLISON ET AL ROYALTY OWNER ED BROOME, INC ET AL

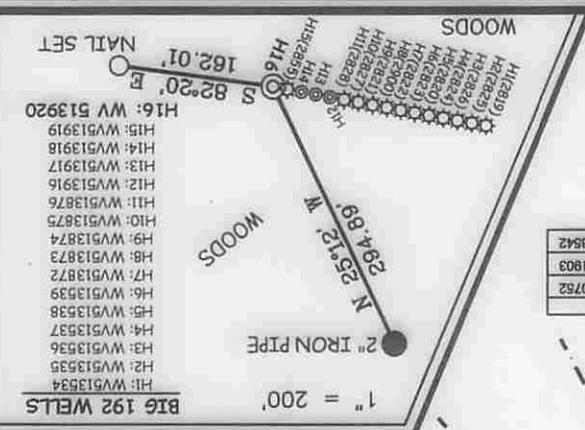


STATE OF WEST VIRGINIA  
 DIVISION OF ENVIRONMENTAL PROTECTION  
 OFFICE OF OIL AND GAS

MINIMUM DEGREE OF ACCURACY 1 / 200  
 FILE NO. 7797P513920R3 (390-38)  
 SCALE 1" = 2000'  
 CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORP NETWORK)

P.S. 849  
 VICTOR MOYERS  
 LICENSED PROFESSIONAL SURVEYOR  
 STATE OF WEST VIRGINIA  
 No. 849

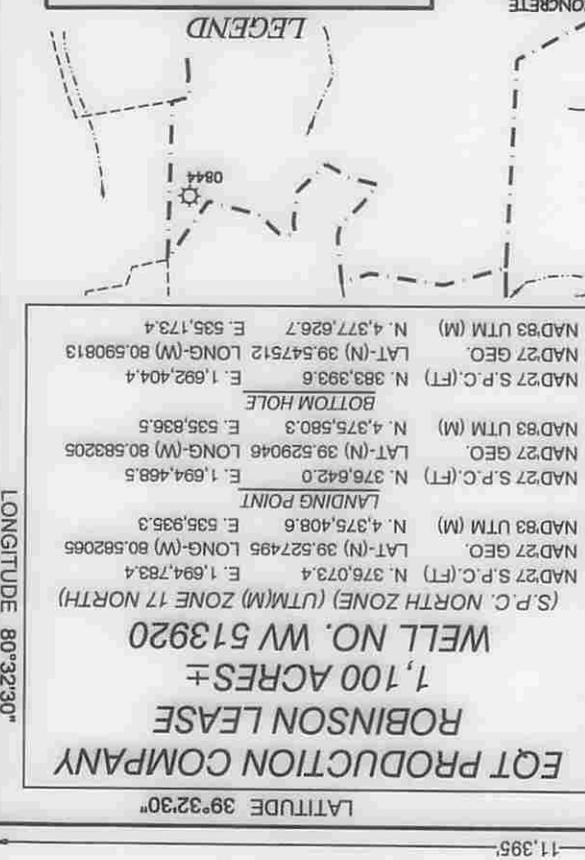
DATE APRIL 18, 2013  
 REVISED 06/07/13, 07/09/14 & 08/05/14  
 OPERATORS WELL NO. WV 513920  
 API WELL NO. 47-103-03043  
 HGA



**NOTES ON SURVEY**

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.

ROYALTY OWNERS	LEASE NO.	ACRES
MILLS WETZEL LANDS INC.	300782	1000
GLADY WILLEY ET AL	981803	175
CNX	888542	290



I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN 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.

Professional Energy Consultants  
 SURVEYORS  
 ENGINEERS  
 A DIVISION OF SMITH LAND SURVEYING, INC.  
 WWW.SLSURVEYS.COM

