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

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

Friday, August 26, 2016
WELL WORK PERMIT
Vertical / Plugging - 2

XTO ENERGY, INC.
810 HOUSTON STREET

FORT WORTH, TX 76102

Re: Permit approval for 1 (KE O6)
47-033-01930-00-00

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

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

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

James A. Martin
Chief

Operator's Well Number: 1 (KE O6)
Farm Name: ROBINSON, I
U.S. WELL NUMBER: 47-033-01930-00-00
Vertical / Plugging - 2
Date Issued: 8/26/2016

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PERMIT CONDITIONS

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

CONDITIONS

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

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

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

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WW-4B
Rev. 2/01

1) Date July 12, 2016
2) Operator's
Well No. 1 (KE 06)
3) API Well No. 47- 033 - 01930

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

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

5) Location: Elevation 1045'
Watershed 0502000303
District Eagle - 4
County Harrison
Quadrangle Wallace - 655

6) Well Operator XTO Energy Inc
Address PO Box 1008
Jane Lew, WV 26378

7) Designated Agent Gary Beall
Address PO Box 1008
Jane Lew, WV 26378

8) Oil and Gas Inspector to be notified
Name Sam Ward
Address PO Box 2327
Buckhannon, WV 26201

9) Plugging Contractor
Name
Address

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

See attached

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JUL 22 2016
WV Department of
Environmental Protection

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

Work order approved by inspector [signature] Date 7/14/2016

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47-033-01930
Plugging Procedure

	RIH with 2" tubing to 4518'
	Gel - 4518 - Surface
	Cement - 4518 - 4400' = 118' x 0.0163 = 2 bbls = 12 sks
	"No Perfs"
	Gel - 4400' - 3560'
	Cement - 3560' - 3000' = 560' x 0.0163 = 9.1 bbl = 45 sks
	Perfs - 3506' - 3155' - Tag cement Plug
	Pull 2" tubing out
	RIH to CBL 4.5" casing - T.O.C. est at 2700'
	Cut 4.5" - 2700 - 6% gel to surface.
	Cement - 2700' - 2550' = 150' x 0.0602 = 9 bbl = 44 sks
	6% gel - 2550' - 2400'
	Cement - 2400' - 2200' = 200' x 0.0602 = 12 bbl = 58 sks
	Gel - 2200' - 1750'
	Cement - 1750' - 1550' = 200' x 0.0602 = 12 bbl = 58 sks
	Gel - 1550' - 1180'
Bottom of 8 5/8" at 1121'	Cement - 1180' - ~~1045'~~ 980' = ~~135'~~ 200' = ~~8.7 bbl~~ = ~~44 sks~~ *
	Gel - ~~1045' - 150'~~ 980' - 250'
	Cement - 250' - Surface = ~~150'~~ x ~~0.0637 = 9.6 bbls = 46 sks~~
	8 5/8" cemented to surface? - Install well monument
	Total Cement - 307 sks
	Bentonite - 2000#

gwm 8/25/16

SDW
7/14/16

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OG-10
Rev. - 9-71

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division

WELL RECORD 18

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OIL & GAS DIVISION
DEPT. OF MINES

Rotary X Oil ____
Cable ____ Gas X
Recycling ____ Comb. ____
Water Flood ____ Storage ____
Disposal ____ ____ (Kind)

Quadrangle Wallace

Permit No. HAR-1930

Company Doran & Associates, Inc.
Address 728 Washington Road, Pgh., PA
Farm Inez Robinson Acres 178
Location (waters) Bingamin Creek
Well No. B-1342 (K-E-6) Elev. 1041'
District Eagle County Harrison
The surface of tract is owned in fee by Inez P. Robinson
Address Mannington, WV 26582
Mineral rights are owned by Inez P. Robinson
____ Address Mannington, WV
Drilling Commenced October 23, 1978
Drilling Completed October 29, 1978
Initial open flow 119 cu. ft. -- bbls.
Final production 291 cu. ft. per day -- bbls.
Well open 72 hrs. before test 1375 RP.
Well treatment details:

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16 Cond.			
13-10"11 3/4"	43'	43'	
9 5/8			
8 5/8	1121'	1121'	200 sks.
7			
5 1/2			
4 1/2	4518'	4581'	250 sks.
3			
2			
Liners Used			

Attach copy of cementing record.

Stimulation Record:

Interval Perforated:	FROM	TO	AMT. FLUID	AMT. SAND
DATE: 11-9-78	3402	- 3506	541 BBLS.	60,000#
	3155	- 3189	504 BBLS.	51,000#

Coal was encountered at 220' & 1010' Feet ____ Inches
Fresh water 30' Feet ____ Salt Water ____ Feet ____
Producing Sand 1st Balltown - Speechley Depth 3416' - 3145'

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Fill			0	20		
Sand			20	120	Water @ 30'	
Sandy Shale			120	185		
Sand			185	220		
Coal			220	222		
Sand			222	230		
Sandy Shale			230	280		
Sand			280	295		
Sandy Shale			295	300		
Sand			300	340		
Sandy Shale & Red Rock			340	800		
Sand			800	850		
Sandy Shale			850	920		
Sand			920	1010		
Coal			1010	1014		
Sand			1014	1075		

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(over)

* Indicates Electric Log tops in the remarks section.

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Formation	Color	Hard or Soft	Top Feet 18	Bottom Feet	Oil, Gas or Water	Remarks
Sandy Shale			1075	1090		
Sand			1090	1130		
Sandy Shale			1130	1150		
Sand			1150	1225		
Sandy Shale			1225	1315		
Sand			1315	1330		
Sandy Shale			1330	1360		
Sand			1360	1385		
Red Rock			1385	1400		
Sandy Shale			1400	1465		
Little Lime			1465	1480		
Shale			1480	1525		
Big Lime			1525	1645		
Sand			1645	1690		
Sandy Shale			1690	2215		
Sand			2215	2310		
Sandy Shale			2310	2955		
Sand			2955	3040		
Sandy Shale			3040	4685	Gas @ 3850' & 4440'	
Sand			4685	4705		
Sandy Shale			4705	4816		
Drillers' T. D.				4816		
Speechley			3145	3202		
1st Balltown			3416	3540		
2nd Balltown			3630	3778		
Sheffield			4025	4070		
Bradford			4168	4284		
Riley			4555	4600		
Benson			4698	4734		
Loggers' T.D.				4824		

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Date Feb. 20 1979

APPROVED Donald R. Laughlin Owner

By Prod & Engr. - Mgr.
(Title)

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WW-4A
Revised 6-07

1) Date: 7/19/16
2) Operator's Well Number
1 (KE 06)

3) API Well No.: 47 - 033 - 01930

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

4) Surface Owner(s) to be served:
(a) Name: Kimberly Ann Stevens
Address: 37 Little Indian Run Rd.
Mannington, WV 26582
(b) Name: John Delara Jr. & Richard Granato
Address: 176 Club Sofia Rd
Uniontown, PA 15401
(c) Name
Address

5) (a) Coal Operator
Name
Address

(b) Coal Owner(s) with Declaration
Name: Consolidation Coal Company
Address: c/o Leatherwood, Inc.
CNX Center
Name: 1000 Consol Energy Drive
Address: Canonsburg, PA 15317

(c) Coal Lessee with Declaration
Name: American Mountaineer Energy, Inc. (Attn: Jason D. Witt)
Address: 46226 National Rd.
St. Clairsville, OH 43902

6) Inspector: Sam Ward
Address: PO Box 2327
Buckhannon, WV 26201
Telephone: 304-389-7583

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

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

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

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

OFFICIAL SEAL
NOTARY PUBLIC
State of West Virginia
YVONNE A. DUTCHESS
RR 3, Box 745
Lost Creek, WV 26385
My Commission Expires September 26, 2018

Well Operator: XTO Energy Inc.
By: [signature]
Its: Regulatory Compliance Technician
Address: PO Box 1008
Jane Lew, WV 26378
Telephone: 304-884-6000

Subscribed and sworn before me this 19th day of July, 2016
Yvonne A. Dutchess Notary Public
My Commission Expires September 26, 2018

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Office of Oil and Gas
JUL 22 2016
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 phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyoffier@wv.gov.

3301930P

WW-9
(5/16)

API Number 47 - 033 - 01930
Operator's Well No. 1 (KE 06)

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

Operator Name XTO Energy Inc. OP Code 494487940

Watershed (HUC 10) 0502000303 Quadrangle Wallace

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 ☑ TJS 8/25/16

If so, please describe anticipated pit waste: ~~Fluids from plugging operations.~~ NA - TJS 8/25/16

Will a synthetic liner be used in the pit? Yes ☐ No ☑ If so, what ml.? ~~Yes - 20 mil.~~ NA - TJS 8/25/16

Proposed Disposal Method For Treated Pit Wastes: ANY WELL EFFLUENT MUST BE CONTAINED IN TANKS BEFORE HAULING OFF SITE. gwm 8/25/16

- ____ Land Application (if selected provide a completed form WW-9-GPP)
- ■ Underground Injection (UIC Permit Number 4707302523, 4708505151, 4708509721)
- ____ Reuse (at API Number ____)
- ____ Off Site Disposal (Supply form WW-9 for disposal location)
- ■ Other (Explain Meadowbrook Landfill SWF#1032, RES Water Recycling -WMGR123SW005 (PA)

Will closed loop systembe used? If so, describe: NA SDW 7/14/16

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. NA - Plugging

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

Additives to be used in drilling medium? NA

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Any solid waste from plugging will be taken to landfill.

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

-Landfill or offsite name/permit number? Meadowbrook Landfill SWF#1032

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

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

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

Company Official Signature Tim Sands

Company Official (Typed Name) Tim Sands

Company Official Title Regulatory Compliance Technician

Subscribed and sworn before me this 12th day of July, 20 16

Dianne Rickles Notary Public

My commission expires September 26, 2018

OFFICIAL SEAL
NOTARY PUBLIC
State of West Virginia
DIANNE RICKLES
PO Box 1008
Jane Lew, WV 26378
My Commission Expires September 26, 2018

3301930P

Form WW-9

Operator's Well No. 1 (KE 06)

Proposed Revegetation Treatment: Acres Disturbed .40 +/- Prevegetation pH

Lime according to PH test Tons/acre or to correct to pH 7.0

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Ladino Clover	30
		Serecia Lespedeza	25
		Tall Fescue	2

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [signature]

Comments:

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Title: OOG Inspector Date: 7/14/2016

Field Reviewed? ( ) Yes (X) No

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WW-9- GPP
Rev. 5/16

Page _____ of _____
API Number 47 - 033 - 01930
Operator's Well No. 1 (KE 06)

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

Operator Name: XTO Energy Inc.

Watershed (HUC 10): 0502000303 Quad: Wallace

Farm Name: Robinson, I

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

Fluids will not be land applied.

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

NA

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

NA

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

NA

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

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Page _____ of _____
API Number 47 - 033 - 01930
Operator's Well No. 1 (KE 06)

NA

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

NA

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

NA

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

NA

Signature: [signature]

Date: 7/12/16

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ROBINSON, I 1
WELL PLUGGING PROJECT
EROSION AND SEDIMENT CONTROL PLAN
XTO ENERGY, INC.

(LOCATION OF WELL)

PROJECT OWNER/APPLICANT

XTO ENERGY, INC.
PO BOX 1008
JANE LEW, WV 26378
PH (304) 884-6036
CONTACT TIM SANDS

CIVIL ENGINEER

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
600 MARKETPLACE AVE - SUITE 200
BRIDGEPORT, WV 26330
PH (304) 933-3119
CONTACT STEVEN A. CAIN, P.E.

WVDOH

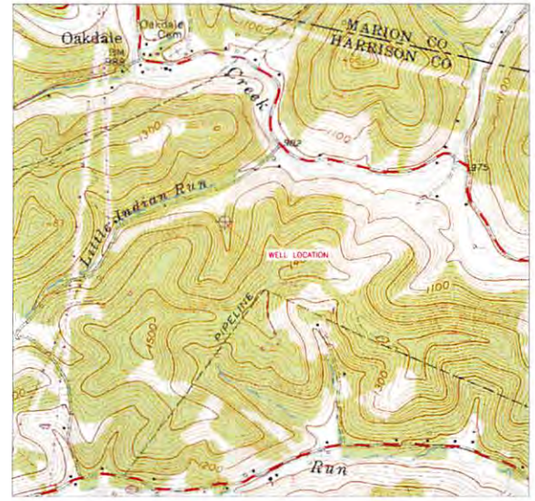
DISTRICT FOUR
PH (304) 842-7500
CONTACT RAY URSI - DISTRICT ENGINEER

SPILL HOTLINE

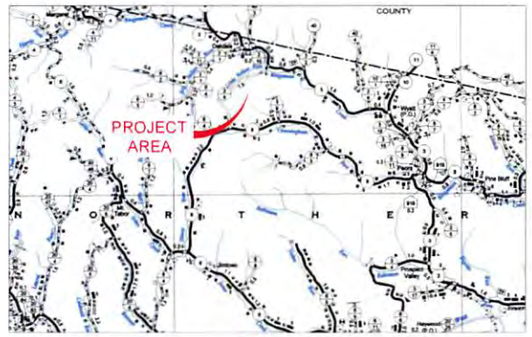
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP)
PH (800) 642-3074

NATIONAL RESPONSE CENTER
PH (800) 424-8802

LOCAL EMERGENCY SERVICES		
	NAME	TELEPHONE NO.
AMBULANCE		911
HOSPITAL EMERGENCY ROOM	UNITED HOSPITAL CENTER	(681) 342-1000
FIRE DEPARTMENT	SHINNSTON FIRE DEPARTMENT	(304) 592-0851
POLICE DEPARTMENT		911
POISON CONTROL CENTER	WEST VIRGINIA POISON CENTER	(800) 222-1222



LOCATION MAP
WALLACE USGS 7.5' QUAD
SCALE IN FEET
0 1000 2000
1 INCH = 1000 FEET
NORTH



VICINITY MAP
HARRISON COUNTY ROAD MAPS
SCALE IN FEET
0 1 MILE 2 MILE
1 INCH = 1 MILE
NORTH

SHEET INDEX	
SHEET 1 OF 4	COVER SHEET
SHEET 2 OF 4	EROSION AND SEDIMENT CONTROL PLAN NOTES
SHEET 3 OF 4	EROSION AND SEDIMENT CONTROL PLAN
SHEET 4 OF 4	EROSION AND SEDIMENT CONTROL PLAN DETAILS

PLAN REPRODUCTION WARNING

THE PLANS HAVE BEEN CREATED ON ANSI D (22" X 34") SHEETS FOR REDUCTIONS. REFER TO GRAPHIC SCALE.

THE PLANS HAVE BEEN CREATED FOR FULL COLOR PLOTTING. ANY SET OF THE PLANS THAT IS NOT PLOTTED IN FULL COLOR SHALL NOT BE CONSIDERED ADEQUATE FOR CONSTRUCTION PURPOSES.

"WARNING!!" INFORMATION MAY BE LOST IN COPYING AND/OR GRAY SCALE PLOTTING.

WEST VIRGINIA 811
CALL BEFORE YOU DIG!

ESTIMATED QUANTITIES					
	EST. QTY	UNITS	BID QTY	UNIT PRICE	TOTAL COST
STABILIZED CONSTRUCTION ENTRANCE	750	SF			
TIMBER MAT BRIDGE	1	EA			
PERMANENT SEEDING	1,945	SY			
12" COMPOST FILTER SOCK	112	LF			
ORANGE CONSTRUCTION FENCE	44	LF			

* SEE DIMENSIONS ON PLAN DRAWINGS

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5 Dec 2016
7/14/16
JUL 22 2016
WV Department of Environmental Protection

REVISION RECORD

NO.	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.

XTO ENERGY, INC.
ROBINSON, I 1 WELL PLUGGING
EAGLE DISTRICT
HARRISON COUNTY, WV

COVER SHEET

DATE	JUNE 2016	DRAWN BY	CCN
DWG SCALE	AS SHOWN	CHECKED BY	ZMD
PROJECT NO.			161-210
APPROVED BY			SAC

STEVEN ALLEN CAIN
REGISTERED
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER
6-30-16

DRAWING NO.
1
SHEET 1 OF 4

3301930P

EROSION AND SEDIMENT CONTROL NARRATIVE

1. PROJECT DESCRIPTION: THE PURPOSE OF THIS PROJECT IS TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES FOR THE ROBINSON, I 1 WELL PLUG PROJECT. THE PROJECT IS LOCATED APPROXIMATELY 340 FEET FROM THE INTERSECTION OF COUNTY ROUTE 3 AND COUNTY ROUTE 3/8 IN HARRISON COUNTY, WEST VIRGINIA. THE PROPOSED PROJECT INCLUDES PLUGGING AND ABANDONMENT OF THE ROBINSON, I 1 GAS WELL. THE WELLHEAD, CASING, AND PRODUCTION EQUIPMENT WILL BE REMOVED. ONCE CEMENT PLUGS ARE PLACED WITHIN THE BOREHOLE, THE WELL PAD AREA WILL BE RECLAIMED AND GRADED TO BE CONSISTENT WITH THE GENERAL CONTOUR OF THE IMMEDIATE SURROUNDING LAND. THE SITE WILL BE SEEDED, AS REQUIRED, WITH A MIX APPROVED BY THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION. THE PROJECT LIMITS OF DISTURBANCE IS APPROXIMATELY 0.40 ACRES AND THE STUDY AREA FOR THE PROJECT WAS APPROXIMATELY 0.49 ACRES.

2. EROSION AND SEDIMENTATION CONTROL MEASURES TO BE USED FOR THIS PROJECT ARE COMPOST FILTER SOCKS, STABILIZED CONSTRUCTION ENTRANCE, AND TIMBER MAT BRIDGES FOR STREAM AND WETLAND CROSSINGS (WHEN APPLICABLE). IF PROJECT LIMITS CHANGE FOR NEEDS OF CONSTRUCTION, AND ADDITIONAL WATERBODIES AND/OR WETLANDS ARE TO BE CROSSED OR IMPACTED, IT IS THE CONTRACTORS RESPONSIBILITY TO ACQUIRE THE NECESSARY PERMITS PRIOR TO IMPACTING THOSE FEATURES. IF OTHER ACCESSES ARE NEEDED OR BETTER ROUTES ARE DETERMINED, OBTAIN THE NECESSARY PERMITS PRIOR TO INITIATING WORK FOR THE NEW ROUTES. PROVIDE RECORD MARKUPS OF THE ON-SITE DRAWINGS TO INCLUDE THE LOCATION OF THE ACCESS ROADS AND THE CONTROL MEASURES TO BE USED. THERE SHALL BE NO BORROW AREA OUTSIDE OF THE PROPOSED CONSTRUCTION AREA.

3. CRITICAL EROSION AREAS-CONTROL MAINTENANCE: ALL 3:1 SLOPES AND STEEPER, DITCHES AND OTHER CONTROLS SHALL BE CONSIDERED CRITICAL EROSION AREAS. THESE AREAS SHALL BE MONITORED & MAINTAINED DAILY AND AFTER EACH RAIN FALL OF 0.5 INCHES OR GREATER. THE LOCAL GOVERNING AUTHORITY WILL HAVE THE AUTHORITY TO RECOMMEND THE PLACEMENT OF ADDITIONAL EROSION CONTROL MEASURES IN THESE AREAS IF IT BECOMES EVIDENT DURING CONSTRUCTION THAT THE CONTROL MEASURES IN PLACE ARE NOT FUNCTIONING SUFFICIENTLY.

4. EROSION AND SEDIMENT CONTROL MEASURES. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE CURRENT WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL. THE CONTRACTOR SHALL OBTAIN A COPY OF THIS MANUAL FROM THE WVDEP WEBSITE AND CONSTRUCT ALL DEVICES BASED ON THIS MANUAL OR A HANDBOOK THAT IS COMPARABLE OR EXCEEDS THE SPECIFICATIONS OF THE WEST VIRGINIA MANUAL. THE MINIMUM STANDARDS OF THIS MANUAL SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE. SEE PLANS FOR ALL PROPOSED EROSION AND SEDIMENT CONTROL MEASURES. IT IS THE INTENT OF THESE PLANS TO PROVIDE A MINIMUM BASIS FOR ADEQUATE EROSION AND SEDIMENT PROTECTION ASSOCIATED WITH THE WELL PLUGGING ACTIVITIES. THIS EROSION AND SEDIMENT CONTROL PLAN MAY VARY FROM STANDARD PIPELINE OR WELL PAD CONTROL MEASURES.

5. STRUCTURAL PRACTICES:
-SILT SOCK/SILT FENCE/SUPER SILT FENCE: WILL BE CONSTRUCTED AS SHOWN ON THE PLANS.

6. VEGETATIVE PRACTICE TOPSOILING: TOPSOIL WILL BE STRIPPED FROM THE SITE AND STOCKPILED IN AN AREA DETERMINED IN THE FIELD. UPON THE COMPLETION OF THE PROJECT TOPSOIL WILL BE PLACED ON ALL DISTURBED AREAS AT A MAXIMUM DEPTH OF 4 INCHES. TEMPORARY SEEDING: ALL DENUDED AREAS LEFT DORMANT FOR MORE THAN 21 DAYS SHALL BE SEEDED WITH A FAST GERMINATING SEED. THE TIME OF YEAR WILL BE THE BASIS FOR THE SEED MIXTURE. PERMANENT SEEDING: ALL SEEDED AREAS WILL BE RESEED, MULCHED AND FERTILIZED AS NEEDED TO OBTAIN AN ADEQUATE STAND OF GRASS. PERMANENT SEEDING SHALL BE PLACED WITHIN SEVEN DAYS UPON ACHIEVING FINAL GRADE. WATER, MULCH, AND RESEED AS NECESSARY TO OBTAIN AN ADEQUATE STAND OF VEGETATION, IN THE OPINION OF THE ENGINEER

7. MANAGEMENT STRATEGIES: CONSTRUCTION WILL BE SEQUENCED SO THAT OPERATIONS WILL BEGIN AND END AS SOON AS POSSIBLE. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES. AFTER ACHIEVING ADEQUATE STABILIZATION THE TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE REMOVED AND ANY AREAS DISTURBED DURING THIS PROCESS SHALL BE STABILIZED. THESE PLANS ARE TO REMAIN ON-SITE AT ALL TIMES DURING CONSTRUCTION. CLEARING AND GRUBBING ACTIVITIES SHOULD TAKE INTO CONSIDERATION MINIMIZING REMOVAL OF TREES AND DISTURBANCE AND COMPACTION OF NATIVE SOILS. ANY AREAS THAT REQUIRE PRESERVATION OF CRITICAL OR SENSITIVE AREAS AND/OR REQUIRE BUFFERS SHALL BE DELINEATED ON BOTH THE PLANS AND THE SITE.

8. CONSTRUCTION ELEMENTS:

A. OBTAIN ALL PERMITS AND APPROVALS PRIOR TO CONSTRUCTION

B. IF CONSTRUCTION LIMITS NEED TO BE EXPANDED BEYOND THE LIMITS OF DISTURBANCE AREA SHOWN ON THE PLANS, A PRE-CONSTRUCTION ENVIRONMENTAL EVALUATION WILL NEED TO BE CONDUCTED. CONTACT THE ENVIRONMENTAL BIOLOGIST TO CONDUCT A REVIEW ON THE NEW AREAS PRIOR TO CONSTRUCTION.

C. INSTALL THE STABILIZED CONSTRUCTION ENTRANCES AT THE ACCESS ROAD. STABILIZED CONSTRUCTION ENTRANCES MAY BE NEEDED AT THE ACCESS ROAD PENDING ITS USE AT THE TIME OF THIS PROJECTS CONSTRUCTION.

D. MARK ALL CLEARING LIMITS AND SENSITIVE AREAS SUCH AS STREAMS, WETLANDS, ETC.

E. INSTALL ORANGE CONSTRUCTION FENCE NEAR STREAMS, WETLANDS, AND STRUCTURES WITHIN THE LIMITS OF DISTURBANCE TO PROVIDE A PHYSICAL BARRIER TO DETER DISTURBANCE BY CONSTRUCTION ACTIVITIES.

F. ADD GRAVEL TO ACCESS ROAD AS NEEDED, BUT NO GRADING OR IMPACTS TO EXISTING DRAINAGE FEATURES ARE TO BE MODIFIED

G. ON A DAILY BASIS, CLEAN THE ROADS THOROUGHLY BY REMOVING TRACKED SEDIMENT BY SHOVELING OR SWEEPING. STREET WASHING TO A WATERCOURSE OR STORM DRAIN SYSTEM IS NOT ALLOWED.

H. INSTALL COMPOST FILTER SOCK WHERE SHOWN, PARALLEL TO THE SLOPE AND ON THE DOWN-GRADIENT SIDE OF THE LIMITS OF DISTURBANCE TO PREVENT SEDIMENTATION FROM LEAVING THE PROJECT AREA

I. CLEAR AND GRUB ALONG THE R-O-W. PRESERVE NATURAL VEGETATION AS MUCH AS POSSIBLE, WITHOUT SIGNIFICANT INTERFERENCE WITH CONSTRUCTION ACTIVITIES

J. USE TIMBER MAT BRIDGES TO CROSS WATERBODIES AND WET AREAS, AS NEEDED

K. RE-ESTABLISH THE GRADE TO THE PRE-CONSTRUCTION CONDITIONS

L. RE-STABILIZE THE DISTURBED SOILS WITHIN 7 DAYS BY PLACING TEMPORARY SEEDING IF NOT FINAL GRADED, AND PERMANENT SEEDING WITH A NURSE CROP IF FINAL GRADED

M. MULCH AND FERTILIZE AS STATED IN THIS PLAN

N. PLACE ROLLED EROSION CONTROL PRODUCTS (RECP), AND BLANKETS ON TOP OF SEEDED AREAS, ON STEEP SLOPES WHERE SEEDING MY BE DISPLACED BY RUNOFF. TYPICALLY, SLOPES GREATER THAN 3H:1V NEED TO HAVE AN EROSION CONTROL MAT OR BLANKET PLACE OVER THE SEEDED AREAS. SEED AND PLACE RECP ON THE STEEP SLOPES ADJACENT TO ANY AND ALL STREAMS IMMEDIATELY (WITHIN 7 DAYS) AFTER THE WELL PLUG IS REMOVED.

O. MAINTAIN ALL BEST MANAGEMENT PRACTICES (BMP'S) AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION

P. ALL BMP'S SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES PER 24 HOUR PERIOD. ANY REQUIRED REPAIRS SHOULD BE MADE IMMEDIATELY. THIS INCLUDES THE REMOVAL OF SEDIMENT THAT IS OVER HALF THE HEIGHT OF THE COMPOST FILTER SOCK (1 DAY PER WEEK OR AS STORM EVENTS REQUIRE)

Q. TEMPORARY BMP'S MUST BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMP'S ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL RESULTING FROM REMOVAL OF BMP'S OR VEGETATION SHALL BE PERMANENTLY STABILIZED. FINAL STABILIZATION MEANS THAT ALL SOIL-DISTURBING ACTIVITIES ARE COMPLETED, AND THAT EITHER A PERMANENT VEGETATIVE COVER OF THE TOTAL VEGETATED AREA WITH A DENSITY OF 70% OR GREATER HAS BEEN ESTABLISHED OR THAT THE SURFACE HAS BEEN STABILIZED BY HARD COVER SUCH AS PAVEMENT OR BUILDINGS (WHEN APPLICABLE).

R. NO NEW OR PERMANENT CUT OR FILL SLOPES ARE TO REMAIN ON-SITE. GRADING SHOULD BE DONE SUCH THAT POST-CONSTRUCTION CONTOURS SHOULD CLOSELY MATCH APPROXIMATE ORIGINAL CONTOURS AFTER CONSTRUCTION IS COMPLETE. ALL AREAS IN THE LOD THE WERE VEGETATED IN THE EXISTING CONDITION ARE TO BE VEGETATED AFTER CONSTRUCTION.

12. PERMANENT STABILIZATION: ALL AREAS LEFT UNCOVERED BY EITHER BUILDINGS OR PAVEMENT SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING AND WITHIN 7 DAYS. AT NO TIME SHALL LAND LAY DORMANT FOR LONGER THAN 21 DAYS. SEE SEQUENCE OF EVENTS FOR RATES.

13. MAINTENANCE AND OTHER CONSIDERATIONS AND GROUND WATER PROTECTION: ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH RAINFALL OF 0.5 INCH OR MORE. THEY WILL BE INSPECTED FOR UNDERMINING, DETERIORATION, EROSION AND EXCESS DEPOSITED MATERIAL. ALL DEFICIENCIES WILL BE CORRECTED IMMEDIATELY. EXCESS MATERIAL WILL BE SPREAD ON THE SITE IN A MANNER WHERE IT IS NOT LIKELY TO ERODE IN THE FUTURE. CLEANING PROCEDURES WILL BE COMPLETED AT REGULAR INTERVALS AND AT LEAST WHEN SEDIMENT REACHES 33% OF CAPACITY, OR AS SHOWN ON APPLICABLE DETAILS. RECORDS OF CLEANING AND CORRECTIONS WILL BE MAINTAINED BY THE CONTRACTOR. THE "GENERIC GROUNDWATER PROTECTION PLAN FOR CONSTRUCTION SITES" WILL BE USED AND AVAILABLE ON SITE AT ALL TIMES. AN AREA WILL BE PROVIDED FOR VEHICLE AND EQUIPMENT MAINTENANCE. MOBILE FUEL TRUCKS WITH APPROVED TANKS WILL BE USED ON THIS SITE. PORTABLE SANITARY FACILITIES WILL BE AVAILABLE FOR EMPLOYEES. IF CONCRETE IS USED, EXCESS CONCRETE WILL BE DISPOSED OF PROPERLY AND NOT ALLOWED TO REMAIN ON THIS SITE. MACHINERY WILL NOT BE ALLOWED IN LIVE STREAMS. FLUIDS SUCH AS DIESEL FUEL, GAS, OIL OR ANTIFREEZE WILL BE KEPT IN PROPER CONTAINERS AND ANY SPILLAGE WILL BE CLEANED AND TAKEN OFF SITE TO A PROPER FACILITY. SOLID OR HAZARDOUS WASTES WILL BE DISPOSED IN ACCORDANCE WITH APPROPRIATE STATE AND FEDERAL REGULATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE CHANGES AND NOTIFY WVDEP OF ANY CHANGES TO GPP. A FINAL INSPECTION WILL BE MADE AT THE CONCLUSION OF THE PROJECT AND ALL CORRECTIONS MADE BEFORE SIGN-OFF OF THE PROJECT SITE.

14. CRITICAL AREAS: THE AREA(S) SHOWN ALONG THE FIELD DELINEATED STREAMS, WETLANDS, AND PONDS, AS SHOWN ON THE PLANS, ARE DESIGNATED AS CRITICAL AREA(S). IF PRESENT, ALL 3:1 SLOPES AND STEEPER, DITCHES, AND OTHER CONTROLS SHALL BE CONSIDERED CRITICAL EROSION AREAS. THESE AREAS SHALL BE MONITORED AND MAINTAINED DAILY DURING CONSTRUCTION AND AFTER EACH RAINFALL OF 0.5 INCHES OR GREATER.COMPOST FILTER SOCKS ARE TO BE USED TO PROTECT THESE FIELD DELINEATED AREA(S) FROM SEDIMENT LEAVING THE SITE. ADDITIONALLY, ORANGE SAFETY FENCE IS RECOMMENDED TO BE INSTALLED ABOVE/AROUND THESE AREA(S), TO SERVE AS A PHYSICAL BARRIER, ENSURING THE AREA(S) ARE NOT DISTURBED. THE LOCAL GOVERNING AUTHORITY WILL HAVE THE AUTHORITY TO RECOMMEND THE PLACEMENTS OF ADDITIONAL EROSION CONTROL MEASURES IN THESE AREAS IF IT BECOMES EVIDENT DURING CONSTRUCTION THAT THE ONES IN PLACE ARE NOT FUNCTIONING SUFFICIENTLY.

15. MAINTENANCE PROGRAM: SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED OR SWEPT INTO ANY ROADSIDE DITCH, CULVERT OR SURFACE WATER.

GENERAL EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL ARRANGE FOR A PRE-CONSTRUCTION CONFERENCE WITH THE APPROPRIATE EROSION AND SEDIMENT CONTROL INSPECTOR 48 HOURS PRIOR TO BEGINNING WORK.
2. ALL EROSION CONTROL DEVICES AS SHOWN OR AS REQUIRED, ARE TO BE CONSTRUCTED TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL AND ARE TO BE IN PLACE PRIOR TO WORK.
3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY AND SHALL BE CHECKED AFTER EVERY RAINFALL. SEEDED AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, RE-SEEDED AND MULCHED AS NECESSARY TO MAINTAIN A DENSE STAND OF GRASS.
4. ALL DRAIN INLETS SHALL BE PROTECTED FROM SILTATION. INEFFECTIVE PROTECTION DEVICES SHALL BE IMMEDIATELY REPLACED AND THE INLET CLEANED. FLUSHING IS NOT AN ACCEPTABLE METHOD OF CLEANING.
5. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 21 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE DORMANT FOR MORE THAN SIX MONTHS.
6. DURING THE CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES.
7. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
8. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER. TRAPPED SEDIMENT AND THE DISTURBED SOIL RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
9. ALL DISTURBED AREAS NOT PAVED OR BUILT UPON SHALL BE HYDRO-SEEDED AND FERTILIZED. PERFORM PERMANENT TOP SOILING, SEEDING AND FERTILIZING AS SOON AFTER OBTAINING FINISH GRADE AS POSSIBLE. SEEDING SHALL COMPLY WITH THE FOLLOWING.

A. TOPSOIL- 4 INCH MINIMUM FOR PERMANENT TURF

B. FERTILIZER- 500 POUNDS PER ACRES OF 10-20-20 FERTILIZER OR EQUIVALENT POUNDAGE OF DIFFERENT ANALYSIS. WORK INTO SOIL PRIOR TO SEEDING.

C. LIME (PERMANENT SEEDING)- AGRICULTURAL LIME SPREAD AT RATE OF 4 TONS/ACRE. WORK INTO SOIL PRIOR TO SEEDING.

D. MULCH- WOOD FIBER OR CHOPPED STRAW AT RATE OF 2 TONS PER ACRE, HYDRO-MULCH AT RATE OF 30 BALES PER ACRE.

E. SEED- SEE DETAIL SEEDING CHARTS TO BE SEEDED BY HYDRO-SEEDER.

GENERAL RECLAMATION NOTES

1. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES INVOLVED IN THE SITE NO MORE THAN TEN DAYS AND NO LESS THAN THREE DAYS IN ADVANCE OF EXCAVATION EXCLUDING SATURDAY, SUNDAY, AND FEDERAL OR STATE HOLIDAYS. CONTACT MISS UTILITY OF WV AT 811.
2. TRAFFIC SHALL BE MAINTAINED ON ALL ADJOINING STREETS AND DRIVES AT ALL TIMES IN ACCORDANCE WITH WVDOT REQUIREMENTS
3. DISTURBED AREAS CREATED DUE TO WELL PLUG REMOVAL SHALL BE RECLAIMED, MULCHED, AND SEEDED TO REDUCE EROSION AND SEDIMENTATION
4. API IDENTIFICATION NUMBERS SHALL BE DISPLAYED AT THE WELL IN ACCORDANCE WITH STATE REQUIREMENTS
5. LANDOWNERS SHALL BE GIVEN ADEQUATE NOTICE THAT CERTAIN SPECIFIED ACTIVITIES WILL BE OCCURRING ON THEIR PROPERTY.

PERMANENT SEEDING MIXTURES SUITABLE FOR ESTABLISHMENT IN WEST VIRGINIA

SPECIES/MIXTURE	SEEDING RATE (LBS/AC)	SOIL DRAINAGE PREFERENCE	PH RANGE
CROWNVETCH/ TALL FESCUE	10 - 15 / 30	WELL - MOD WELL	5.0 - 7.5
CROWNVETCH/ PERENNIAL RYEGRASS	10 - 15 / 20	WELL - MOD WELL	5.0 - 7.5
FLATPEA OR PERENNIAL PEA/ TALL FESCUE	[illegible]	WELL MOD. WELL	[illegible]
LADINO CLOVER/ SERICEA LESPEDEZA/ TALL FESCUE	30 / 25 / 2	WELL - MOD WELL	4.5 - 7.5
TALL FESCUE/ LADINO CLOVER/ REDTOP	40 / 3 / 3	WELL - MOD WELL	5.0 - 7.5
CROWNVETCH/ TALL FESCUE/ REDTOP	10 / 20 / 3	WELL - MOD WELL	5.0 - 7.5
TALL FESCUE/ BIRDSFOOT TREFOIL/ REDTOP	40 / 10 / 3	WELL - MOD WELL	5.0 - 7.5
SERICEA LESPEDEZA/ TALL FESCUE/ REDTOP	25 / 30 / 3	WELL - MOD WELL	4.5 - 7.5
REDTOP/ TALL FESCUE/ CREEPING RED	30 / 3 / 30	WELL - MOD WELL	5.0 - 7.5
TALL FESCUE	50	WELL - POORLY	4.5 - 7.5
PERENNIAL RYEGRASS/ TALL FESCUE/ LATHCO FLATPEA*	10 / 15 / 20	WELL POORLY	[illegible]
ANNUAL RYEGRASS/ CLIMAX TIMOTHY/ BESTFOR INTERMEDIATE RYEGRASS/ POTOMAC ORCHARDGRASS/ MEDIUM RED CLOVER (COATED) **	30 / 25 / 20 / 15 / 10	WELL - MOD WELL	6.0 - 7.0

NOTE: MIXTURES LISTED IN BOLD ARE SUITABLE FOR USE IN SHADED WOODLAND SETTINGS; THOSE IN ITALICS ARE SUITABLE FOR USE IN FILTER STRIPS

NOTE: FOR UNPREPARED SEEDBEDS OR SEEDING OUTSIDE THE OPTIMUM TIMEFRAMES, ADD 50% MORE SEED TO THE SPECIFIED RATE

* LATHCO FLATPEA IS POTENTIALLY POISONOUS TO SOME LIVESTOCK ALL LEGUMES SHOULD BE PLANTED WITH PROPER INOCULANTS PRIOR TO SEEDING

** SWISHER MEADOW MIX

TEMPORARY COVER SUITABLE FOR ESTABLISHMENT IN WEST VIRGINIA

SPECIES	SEEDING RATE (LBS/AC)	OPTIMUM SEEDING DATES	DRAINAGE	PH RANGE
ANNUAL RYEGRASS	40	3/1 - 6/15 OR 8/15 - 9/15	WELL - POORLY	5.5 - 7.5
FIELD BROMEGRASS	40	3/1 - 6/15 OR 8/15 - 9/15	WELL - MOD WELL	6.0 - 7.0
SPRING OATS	96	3/1 - 6/15	WELL - POORLY	5.5 - 7.0
SUDANGRASS	40	5/15 - 8/15	WELL - POORLY	5.5 - 7.5
WINTER RYE	168	8/15 - 10/15	WELL - POORLY	5.5 - 7.5
WINTER WHEAT	180	8/15 - 11/15	WELL - MOD. WELL	5.5 - 7.0
JAPANESE MILLET	30	6/15 - 8/15	WELL	4.5 - 7.0
REDTOP	5	3/1 - 6/15	WELL	4.0 - 7.5
ANNUAL RYEGRASS	26	3/1 - 6/15	WELL - POORLY	5.5 - 7.5
SPRING OATS	64	3/1 - 6/15	WELL - POORLY	5.5 - 7.5

NOTE: THESE RATES SHOULD BE INCREASED BY 50% IF PLANTED APRIL 15 - AUGUST 1 AND OCTOBER 1 - MARCH 1

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NO.	DATE	DESCRIPTION

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EAGLE DISTRICT
HARRISON COUNTY, WV

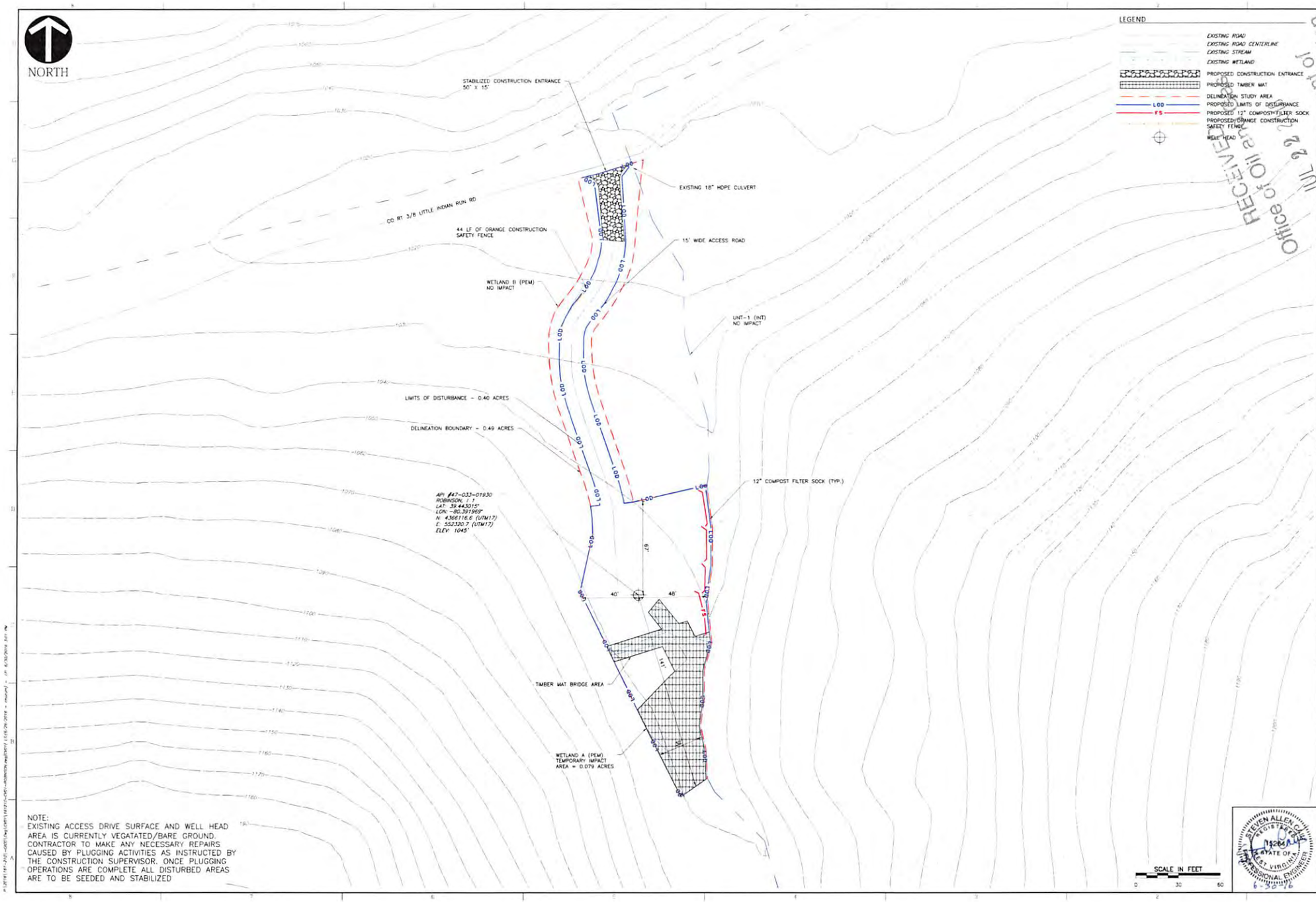
EROSION & SEDIMENT CONTROL PLAN NOTES

DATE	JUNE 2016	DRAWN BY	CCN
DWG SCALE	AS SHOWN	CHECKED BY	ZMD
PROJECT NO	161-210		
APPROVED BY	SAC		

STEVEN ALLEN [illegible] REGISTERED [illegible] STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER 6-28-16

DRAWING NO 2
SHEET 2 OF 4

3301930P



NOTE:
EXISTING ACCESS DRIVE SURFACE AND WELL HEAD AREA IS CURRENTLY VEGATATED/BARE GROUND. CONTRACTOR TO MAKE ANY NECESSARY REPAIRS CAUSED BY PLUGGING ACTIVITIES AS INSTRUCTED BY THE CONSTRUCTION SUPERVISOR. ONCE PLUGGING OPERATIONS ARE COMPLETE ALL DISTURBED AREAS ARE TO BE SEEDED AND STABILIZED

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NO.	DATE	DESCRIPTION

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EAGLE DISTRICT
HARRISON COUNTY, WV

EROSION & SEDIMENT CONTROL PLAN

DATE	JUNE 2016	DRAWN BY	CCN
DWG. SCALE	AS SHOWN	CHECKED BY	ZMD
PROJECT NO.			161-210
APPROVED BY			SAC

STEVEN ALLEN CAIN
REGISTERED
15264
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER
6-30-16

DRAWING NO.
3
SHEET 3 OF 4

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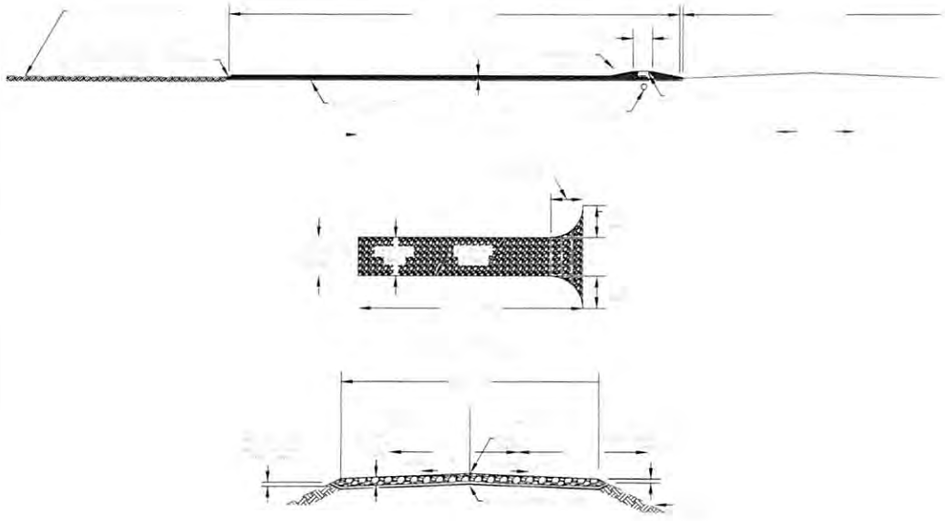
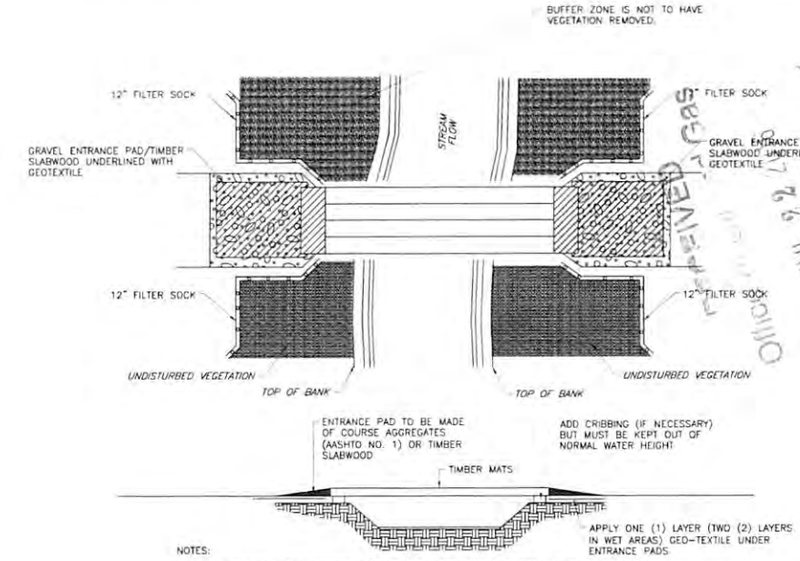


DETAIL 1
STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



NOTES:

1.) ONLY CLEARING EQUIPMENT AND EQUIPMENT NECESSARY FOR INSTALLATION OF EQUIPMENT BRIDGES MAY CROSS WATER BODIES PRIOR TO BRIDGE INSTALLATION. LIMIT THE CROSSING OF EACH WATER BODY TO ONE PER PIECE OF CLEARING EQUIPMENT.

2.) INSTALL 12" FILTER SOCK ACROSS THE DISTURBED AREA OF THE RIGHT – OF – WAY.

3.) APPLY GEO – TEXTILE UNDER ENTRANCE PADS.

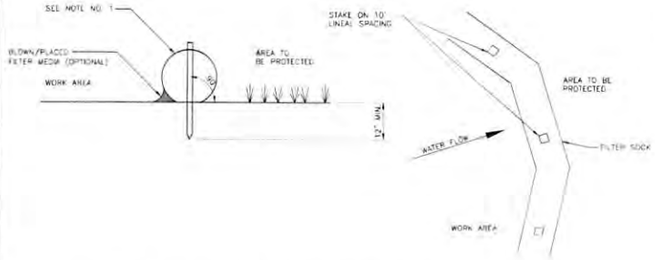
4.) EXCESS MUD IS TO BE REMOVED FROM THE ENTRANCE PADS AND MATS DURING CONSTRUCTION.

5.) SECURE GEO-TEXTILE TO UNDER SIDE OF TIMBER MATS AND WRAP/SECURE TO SIDES TO PREVENT SEDIMENT/MUD FROM MIGRATION THROUGH MATS TO PROTECTED AREA BELOW.

6.) DURING FINAL CLEAN UP WHEN MATS, CULVERT, CLEAN ROCK FILL, ETC. ARE REMOVED, INSTALL FILTER FENCE ACROSS THE ENTIRE RIGHT – OF –WAY ON BOTH SIDES OF STREAM.

DETAIL 2
TEMPORARY TIMBER MAT STREAM CROSSING DETAIL

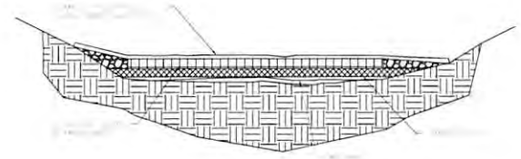
NOT TO SCALE



NOTE:
1. COMPOST FILTER SOCK TO BE FILTREXX SILTSOXX OR APPROVED EQUIVALENT
2. 12", 18", 24", and 32" COMPOST FILTER SOCK TO BE USED. SEE PLAN SHEET FOR SIZES AND LOCATIONS.
3. ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF WHEN IT REACHES ½ THE ABOVE GROUND HEIGHT OF THE COMPOST FILTER SOCK.
4. COMPOST FILTER SOCK SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED COMPOST FILTER SOCK SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
5. COMPOST FILTER SOCK SHALL BE INSTALLED ON THE CONTOUR, PERPENDICULAR TO FLOW.

DETAIL 3
COMPOST FILTER SOCK

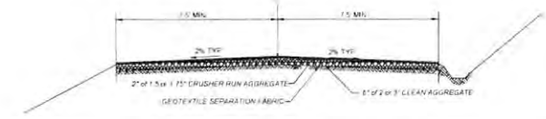
NOT TO SCALE



NOTE:
1. REMOVE DIRT FROM BRIDGE DECK AND PLACE IN SPOIL AREA.
2. BRIDGES SHOULD BE SECURELY ANCHORED AT ONLY ONE END USING STEEL CABLE OR CHAIN. ANCHORING AT ONLY ONE END WILL PREVENT CHANNEL OBSTRUCTION IN THE EVENT THAT FLOODWATERS FLOAT THE BRIDGE. ACCEPTABLE ANCHORS ARE LARGE TREES, LARGE BOULDERS, OR DRIVEN STEEL ANCHORS. ANCHORS SHALL BE SUFFICIENT TO PREVENT THE BRIDGE FROM FLOATING DOWNSTREAM AND POSSIBLY CAUSING AND OBSTRUCTION TO THE FLOW.
3. ALLOWS FOR MINIMAL WETLAND IMPACT DURING CONSTRUCTION AND QUICK RESTORATION TO PRE-CONSTRUCTION CONDITIONS.

DETAIL 4
TIMBER MAT BRIDGE FOR WETLAND CROSSING

NOT TO SCALE



DETAIL 5
TYPICAL CONSTRUCTION ACCESS ROAD REPAIR

NOT TO SCALE

NOTES: EXISTING ACCESS DRIVE IS CURRENTLY VEGETATED. THE CONTRACTOR SHALL MAKE REPAIRS TO MINOR RUTTING WITHIN THE ACCESS ROAD PER THIS DETAIL OR AS INSTRUCTED BY THE CONSTRUCTION SUPERVISOR. THE ACCESS ROAD IS TO BE STABILIZED AND MAINTAINED THROUGHOUT CONSTRUCTION AS DIRECTED BY THE CONSTRUCTION SUPERVISOR. ONCE THE WORK IS COMPLETE, ANY DISTURBED AREAS MUST BE SEEDED AND STABILIZED IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN NOTES.

STEVEN ALLEN CO... REGISTERED PROFESSIONAL ENGINEER STATE OF WEST VIRGINIA
6-30-16

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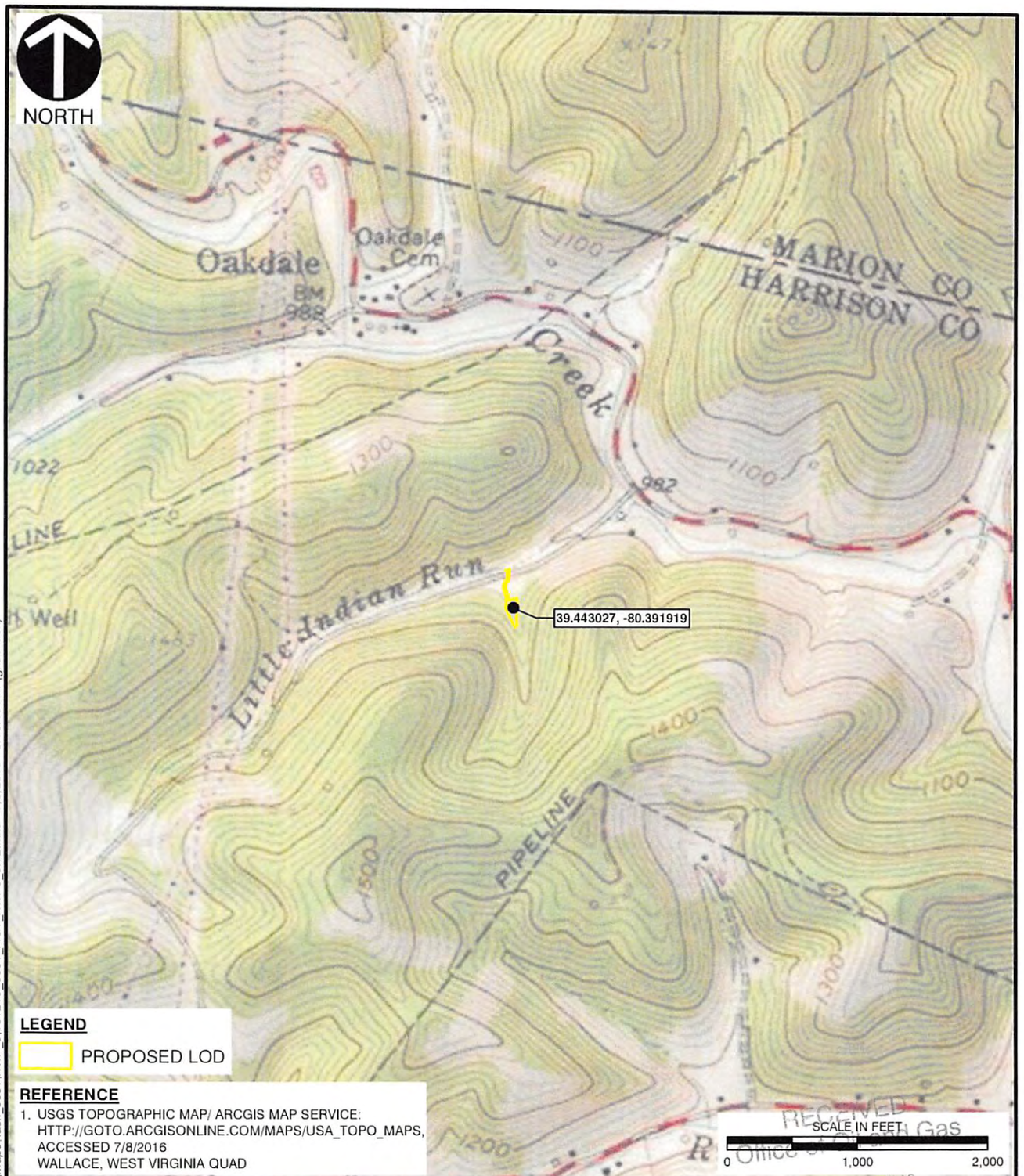

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ROBINSON I,1 WELL PLUGGING
HARRISON COUNTY, WEST VIRGINIA

USGS SITE LOCATION MAP

DRAWN BY:	GSK	CHECKED BY:	JDK	APPROVED BY:	SAC	FIGURE NO:	1
DATE:	07/08/2016	SCALE:	1 " = 1,000 '	PROJECT NO:	161-210.0001		

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WW-7
8-30-06

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Office of Oil and Gas
WELL LOCATION FORM: GPS

API: 47-033-01930 **WELL NO.:** 1 (KE O6)

FARM NAME: Robinson, I

RESPONSIBLE PARTY NAME: XTO Energy, Inc.

COUNTY: Harrison **DISTRICT:** Eagle - 04

QUADRANGLE: Wallace - 655

SURFACE OWNER: Kimberly Ann Stevens

ROYALTY OWNER: WV Wesleyan College, Richard C Brook Trust, Delbert Gail Robinson, Jim C. Hamer Company

UTM GPS NORTHING: 4366116.6

UTM GPS EASTING: 552320.7 **GPS ELEVATION:** 319 m (1045')

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

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

Survey grade GPS_____: Post Processed Differential _____

Real-Time Differential _____

Mapping Grade GPS X : Post Processed Differential X

Real-Time Differential _____

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

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

RECEIVED
Office of Oil and Gas
JUL 22 2016
WV Department of
Environmental Protection

Signature	Title	Date
	Project Manager	July 5, 2016