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 - 3

XTO ENERGY, INC.
810 HOUSTON STREET

FORT WORTH, TX 76102

Re: Permit approval for A-E-42
47-033-01997-00-00

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: A-E-42
Farm Name: GAWTHROP, A.
U.S. WELL NUMBER: 47-033-01997-00-00
Vertical / Plugging - 3
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.
4. This well is under a consent order and must be plugged under the terms of that agreement.

3301997P

WW-4B
Rev. 2/01

1) Date July 12, 2016
2) Operator's Well No. A-E-42
3) API Well No. 47 - 033 - 01997

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 1380' Watershed 0502000303
District Clark County Harrison Quadrangle Wolf Summit

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:

RIH with tools and check TD of well at 4645; POOH and run tubing down to 4645' and circulate 6% gel back to surface, then pump cement from 4645' up to 4300', perfs at 4630 - 4624' & 4467 - 4450' then pull tubing up to 4025' and wait for cement to set up and run small tools down tubing to tag cement at 4300', if ok then pump cement from 4025' up to 3800', perfs at 3953' - 3945', pull tubing out of well and run wireline with BCL to find top of cement and free casing, estimated at 2800', cut casing and circulate 6% gel back to surface, pull all casing out and run tubing back to cut at 2800' and pump cement up to 2650', pull tubing up to 2000' and pump cement up to 1700', pull tubing up to 1460' and pump cement up to 1280', bottom of 8 5/8 at 1396', elev. at 1372', Pull tubing up to 650' and pump cement up to 550', pull tubing up to 200' and pump cement to surface. 8 5/8 cemented to surface. Install well monument.

Cement - 4645 - 4300' = 345' in 4.5" Cement - 2000 - 1700' = 300' in 7 7/8" Cement 200 - Surface = 200' in 8 5/8"

Cement - 4025 - 3800' = 225 in 4.5" Cement - 1460 - 1280' = 180' in 8 5/8"

Cement - 2800 - 2650' = 150 in 7 7/8" Cement - 650 - 550' = 100' in 8 5/8"

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

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Work order approved by inspector [signature] Date 7/14/16

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OG-10
Rev. - 9-71

DEC 26 1979

OIL & GAS DIVISION
DEPT. OF MINES

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division

WELL RECORD 3

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

Quadrangle Wolf Summit

Permit No. 47-033-1997

Company Appalachian Energy, Inc. d/b/a LDR
Address 728 Washington Road, Pgh., PA 15228
Farm A. Gawthrop Acres 235
Location (waters) Simpson Fork
Well No. A-E-42 Elev. 1372
District Clark County Harrison
The surface of tract is owned in fee by Edna E. Gawthrop
Address Rt. 3, Box 568 Clarksburg, WV 26301
Mineral rights are owned by Same as above
____ Address ____
Drilling Commenced 5-28-79
Drilling Completed 6-04-79
Initial open flow 103 M cu. ft. --- bbls.
Final production 350 M cu. ft. per day --- bbls.
Well open 72 hrs. before test 750 RP.
Well treatment details:

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16 Cond.			
11 3/4	279	279	170 Sks.
9 5/8			
8 5/8	1396	1396	300 Sks.
7			
5 1/2			
4 1/2	3936	3939	360 Sks.
3			
2			
Liners Used			

Attach copy of cementing record.

STIMULATION RECORD:

DATE:	INTERVAL PERFORATED: FROM	TO	AMT. FLUID	AMT SAND
6-15-79	3945	- 3953	378 BBLS	42,500#
	4450	- 4667	310 BBLS	42,500#
	4624	- 4630	398 BBLS	47,500#

Coal was encountered at ____ Feet ____ Inches
Fresh water ? 1145" & 1180' Feet ____ Salt Water ____ Feet ____
Producing Sand Bradford, Riley, Benson Depth 3960, 4480, 4630

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Substructure			0	31		
Sand			31	120		
Shale			120	125		
Sand			125	165		
Shale & Sand			165	295		
Sandy Shale			295	345		
Sand			345	360		
Sandy Shale - Red Rock			360	535		
Sand			535	645		
Shale			645	670		
Sand			670	710		
Sandy Shale			710	755		
Sand			755	825		
Shale			825	845		
Sand			845	945		
Shale			945	970		
Sand			970	1045		
Sandy Shale			1045	1100		
Sand			1100	1255	Water @ 1145' & 1180'	
Sandy Shale			1255	1560		
Sand			1560	1580		
Lime & Sand			1580	1705		
Sandy Shale			1705	2025		
Sand			2025	2085		

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(over)

* Indicates Electric Log tops in the remarks section.

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Formation	Color	Hard or Soft	Top Feet 3	Bottom Feet	Oil Gas or Water	Remarks
Sandy Shale			2085	2120		
Sand			2120	2290		
Sandy Shale - Red Rock			2290	2305		
Sandy Shale			2305	4645	Gas @ 3110' & 4600'	
Sand			4645	4650		
Sandy Shale			4650	4782		
Drillers' T. D.				4782		

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Date Dec. 17 19 79

APPROVED Donald R. Laughlin Owner

By President
(Title)

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WELL NUMBER	WELL NAME	OWNER NUMBER	OWNER NAME	ROYALTY INTEREST	ADDRESS LINE1	CITY	STATE	ZIP
301680	GAWTHROP, A 01 (INA)	99985	XTO ENERGY INC	0.061316500	810 HOUSTON	FORT WORTH	TX	761020000
301680	GAWTHROP, A 01 (INA)	187341	JAMES E STOUT	0.022500000	RT 1 BOX 45	LOST CREEK	WV	263850000
301680	GAWTHROP, A 01 (INA)	306719	REMERGY LP	0.000595100	PO BOX 3788	MIDLAND	TX	797020000
301680	GAWTHROP, A 01 (INA)	801307	WILLIAM GARRETT	0.005625000	1313 MOCKINGBIRD RD	KEY LARGO	FL	330373865
301680	GAWTHROP, A 01 (INA)	801914	JOHN B. VAN VERTH	0.005625000	ROUTE #5	MERCER	PA	161370000
301680	GAWTHROP, A 01 (INA)	801915	CATHERINE M. FAIRLAMB	0.005625000	ROUTE 1 BOX 150	STONEBORO	PA	161530000
301680	GAWTHROP, A 01 (INA)	803329	GUY R. GARRETT	0.005625000	ROUTE 7 BOX 193	FAIRMONT	WV	265540000
301680	GAWTHROP, A 01 (INA)	803386	WILMA LEE KIDD	0.014375000	ROUTE #3 BOX #557-E	CLARKSBURG	WV	263010000
301680	GAWTHROP, A 01 (INA)	803577	MARY F. GARRETT	0.011250000	215 S. 6TH STREET APT. M	CLARKSBURG	WV	263010000
301680	GAWTHROP, A 01 (INA)	805617	EDITH MARIE RATLIFF, EXECUTRIX	0.028750000	ROUTE #3 BOX #568	CLARKSBURG	WV	263010000
301680	GAWTHROP, A 01 (INA)	808709	MARY REPP	0.005625000	533 VALLEY DR. APT. #2	MEDINA	OH	442560000
301680	GAWTHROP, A 01 (INA)	808727	DAISY J. CLARKE	0.014375000	4016 WINDERMERE ROAD	COLUMBUS	OH	432200000
301680	GAWTHROP, A 01 (INA)	808843	MARGARET PHILLIPS	0.005625000	266 PARKVIEW AVENUE	WADSWORTH	OH	442810000
301680	GAWTHROP, A 01 (INA)	809613	APPALACHIAN ROYALTIES, INC.	0.062500000	PO BOX 1917	CLARKSBURG	WV	263010000

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WW-4A
Revised 6-07

1) Date: 7/12/2016
2) Operator's Well Number
A-E-42

3) API Well No.: 47 - 033 - 01997

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 See attached
Address
(b) Name
Address
(c) Name
Address

5) (a) Coal Operator
Name
Address

(b) Coal Owner(s) with Declaration
Name See attached
Address
Name
Address

(c) Coal Lessee with Declaration
Name
Address

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
DIANNE RICKLES
PO Box 1008
Jane Lew, WV 26378
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

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JUL 18 2016
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Subscribed and sworn before me this 12th day of July 2016
Dianne Rickles Notary Public
My Commission Expires September 26, 2018

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.

3301997P

Surface
Marsha S. Pearson
3409 Old Davisson Run Rd
Clarksburg, WV 26301

Tobey & Autumn Knight
381 Blackhawk Way
Wallace, WV 26448

Janice Bailey & Sandra Clemente
147 Coal Spring Dr.
Clarksburg, WV 26301

Judith Jordan
91 Coal Spring Dr.
Clarksburg, WV 26301

Betty Straley & Shirley Johnson
678 Geneva Dr.
Westminster, MD 21157

Coal
Judith Jordan
91 Coal Spring Dr.
Clarksburg, WV 26301

Janice Bailey & Sandra Clemente
147 Coal Spring Dr.
Clarksburg, WV 26301

Stephen E. Kidd
1205 County Rd.
Baileyton, AL 35019

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WW-9
(5/16)

API Number 47 - 033 - 01997
Operator's Well No. A-E-42

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 Wolf Summit

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 ☑ - TS 8/25/16

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

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

Proposed Disposal Method For Treated Pit Wastes:

ANY WALL EFFLUENT MUST BE CONTAINED IN TANKS BEFORE HAULING OFF SITE. gw ny 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)

SOW 7/14/16

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

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 [signature]

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

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Form WW-9

Operator's Well No. A-E-42

Proposed Revegetation Treatment: Acres Disturbed 1.77+/- 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: Sel DWarnett

Comments:

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Title: OOG Inspector Date: 7/14/16

Field Reviewed? (_____) Yes (X) No

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WW-9- GPP
Rev. 5/16

Page _____ of _____
API Number 47 - 033 - 01997
Operator's Well No. A-E-42

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: Wolf Summit

Farm Name: GAWTHROP, A.

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 discharged.

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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WW-9- GPP
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Page _____ of _____
API Number 47 - 033 - 01997
Operator's Well No. A-E-42

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: _____

Date: 7/12/16

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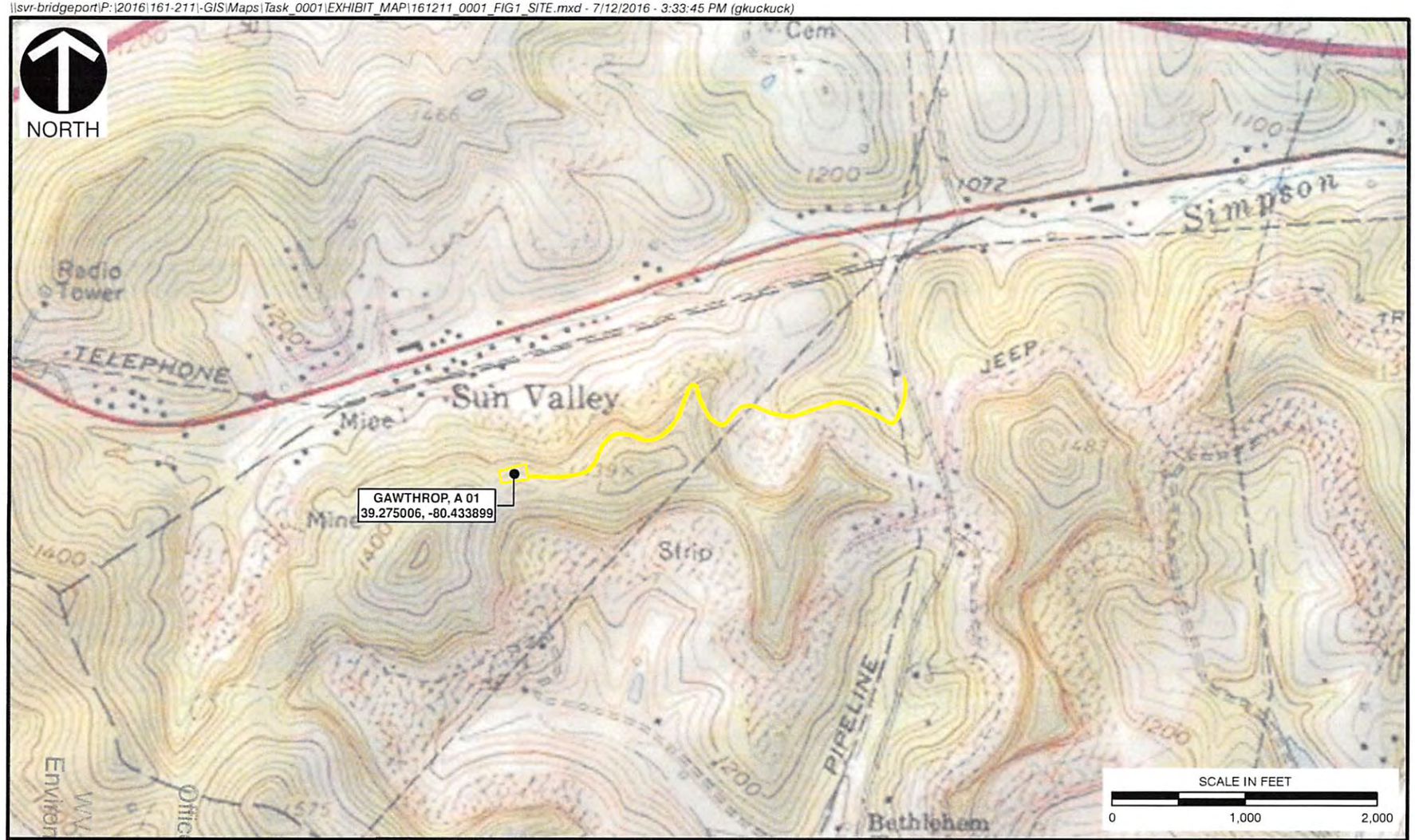
\\svr-bridgeport\P:\2016\161-211\-GIS\Maps\Task_0001\EXHIBIT_MAP\161211_0001_FIG1_SITE.mxd - 7/12/2016 - 3:33:45 PM (gkuckuck)



LEGEND

PROPOSED LOD

REFERENCE

1. USGS TOPOGRAPHIC MAP / ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS, ACCESSED 7/12/2016 WOLF SUMMIT, WEST VIRGINIA QUAD

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CEC
Civil & Environmental Consultants, Inc.
600 Marketplace Avenue, Suite 200 - Bridgeport, WV 26330-9121
Ph: 304-933-3119 · Toll: 855-488-9539 · Fax: 304-933-3327
www.cecinc.com

XTO ENERGY, INC.
GAWTHROP, A 01 WELL PLUGGING PROJECT
HARRISON COUNTY, WEST VIRGINIA

USGS SITE LOCATION MAP

DRAWN BY:	GSK	CHECKED BY:	JDK	APPROVED BY:	SAC	FIGURE NO:	1
DATE:	07/12/2016	SCALE:	1 " = 1,000 '	PROJECT NO:	161-211.0001		

33019970

3301997P

WW-7
8-30-06

West Virginia Department of Environmental Protection
Office of Oil and Gas
WELL LOCATION FORM: GPS

API: 47-033-01997 **WELL NO.:** AE-42

FARM NAME: Gawthrop, A.

RESPONSIBLE PARTY NAME: XTO Energy, Inc.

COUNTY: Harrison **DISTRICT:** Clay

QUADRANGLE: Wolf Summit

SURFACE OWNER: Sandra C. Bailey, Sandra Sue Clemente & Judith Ann Jordon

ROYALTY OWNER: See attached list

UTM GPS NORTHING: 4347448.6

UTM GPS EASTING: 548829.2 **GPS ELEVATION:** 421 meters (1381')

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.

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JUL 28 2015
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Signature	Title	Date
	Project Manager	June 30, 2015

3301997P

GAWTHROP
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.

WVDEP

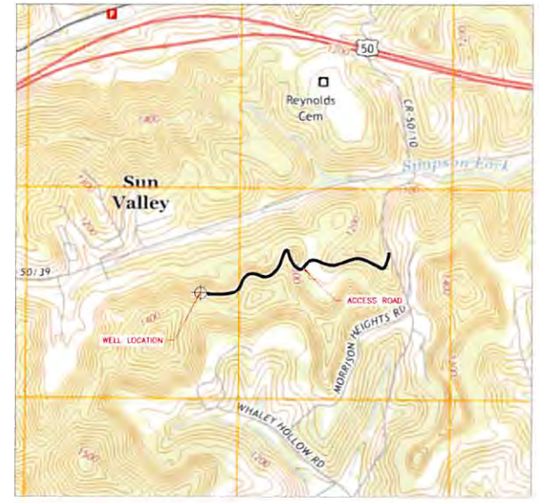
DISTRICT FOUR
PH: (304) 842-1500
CONTACT: RAY URSE - DISTRICT ENGINEER

SPILL HOTLINE

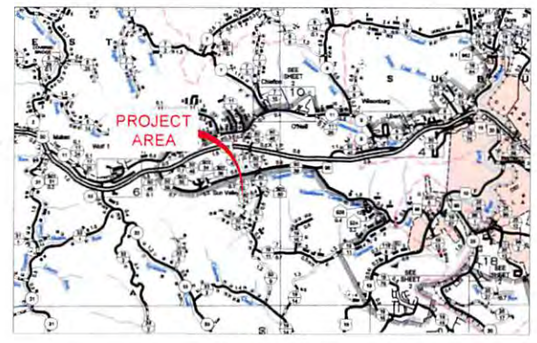
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP)
PH: (800) 642-3074

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	REYNOLDSVILLE FIRE DEPARTMENT	(304) 623-3754
POLICE DEPARTMENT		911
POISON CONTROL CENTER	WEST VIRGINIA POISON CENTER	(800) 222-1222



LOCATION MAP
WOLF SUMMIT 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 5	COVER SHEET
SHEET 2 OF 5	EROSION AND SEDIMENT CONTROL PLAN NOTES
SHEET 3 OF 5	EROSION AND SEDIMENT CONTROL PLAN
SHEET 4 OF 5	EROSION AND SEDIMENT CONTROL PLAN
SHEET 5 OF 5	EROSION AND SEDIMENT CONTROL PLAN DETAILS

PLAN REPRODUCTION WARNING

THE PLANS HAVE BEEN CREATED ON ANSI (22" X 34") SHEETS FOR REPRODUCTIONS REPRODUCE 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 BARRIER*	N/A	EA			
PERMANENT SEEDING	8,888	SY			
12" COMPOST FILTER SOCK	201	LF			
ORANGE CONSTRUCTION FENCE	1,116	LF			

* - SEE DIMENSIONS ON PLAN DRAWINGS

RECEIVED
Office of Oil and Gas
JUL 18 2016
WV Department of Environmental Protection

SDW 7/14/16

REVISION RECORD		
NO.	DATE	DESCRIPTION

CEC
Civil & Environmental Consultants, Inc.
WWW.CECINC.COM

XTO ENERGY, INC.
GAWTHROP WELL PLUGGING
CLARK DISTRICT
HARRISON COUNTY, WV

COVER SHEET

DATE	JUNE 2016	DRAWN BY: CLN
DWG. NO.	AS SHOWN	CHECKED BY: AMD
PROJECT NO.		161411
REVIEWED BY:		SAC

DRAWING NO. 1
SHEET 1 OF 5

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

33019947P

EROSION AND SEDIMENT CONTROL NARRATIVE

1. PROJECT DESCRIPTION: THE PURPOSE OF THIS PROJECT IS TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES FOR THE GAWTHROP WELL PLUG PROJECT. THE PROJECT IS LOCATED APPROXIMATELY 0.31 MILES FROM THE INTERSECTION OF COUNTY ROUTE 50/39 AND COUNTY ROUTE 50/9 IN HARRISON COUNTY, WEST VIRGINIA. THE PROPOSED PROJECT INCLUDES PLUGGING AND ABANDONMENT OF THE GAWTHROP 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 1.77 ACRES AND THE STUDY AREA FOR THE PROJECT WAS APPROXIMATELY 2.74 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. EEED 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 BMPS'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 INVOVLED 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 - 30	WELL - MOD WELL	5.0 - 7.5
CROWNVETCH/ PERENNIAL RYEGRASS	10 - 20	WELL - MOD WELL	5.0 - 7.5
BIRDSFOOT TREFOIL/ TALL FESCUE	20	WELL - POORLY	4.5 - 7.5
LADINO CLOVER/ SERICEA LESPEDEZA/ TALL FESCU	20 15 15	WELL - MOD WELL	5.0 - 7.5
TALL FESCUE/ LADINO CLOVER/ REDTOP	15 5 5	WELL - MOD WELL	5.0 - 7.5
CROWNVETCH/ TALL FESCUE/ REDTOP	15 15 5	WELL - MOD WELL	6.0
TALL FESCUE/ BIRDSFOOT TREFOIL/ REDTOP	15 15 5	WELL - MOD WELL	6.0
SERICEA LESPEDEZA/ TALL FESCUE/ REDTOP	15 15 5	WELL - MOD WELL	6.5
REDTOP/ TALL FESCUE/ CREEPING RED	30 5 50	WELL - MOD WELL	5.0
TALL FESCUE	50	*WELL - POORLY*	4.5 -
PERENNIAL RYEGRASS/ TALL FESCUE/ *LATHCO FLATPEA* *	15 15 20	WELL - POORLY	5.0
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

Office of Oil and Gas
Environmental Protection

STEVEN ALLEN CH... REGISTERED PROFESSIONAL ENGINEER 15264 STATE OF WEST VIRGINIA
6-10-16

NO	DATE	REVISIONS	BY

REVISIONS RECORD

Civil & Environmental Consultants, Inc.

XTO ENERGY, INC.
GAWTHROP WELL PLUGGING
CLARK DISTRICT
HARRISON COUNTY, WV

EROSION & SEDIMENT CONTROL PLAN NOTES

DATE	JUNE 2015	DRAWN BY TCN
DWG. NO.	AS SHOWN	CHECKED BY ASH
PROJECT NO.		2015-211
SCALE	AS SHOWN	PE

DRAWING NO 2

SHEET 2 OF 5

3301997P

NORTH

UNT-1 (PER)
EXISTING 12" STEEL CULVERT
TO BE USED (NO IMPACT)

INSTALL ORANGE CONSTRUCTION
FENCE TO PROTECT STREAM

LIMITS OF DISTURBANCE - 1.77 ACRES

EXISTING 12" STEEL CULVERT

STUDY AREA - 2.74 ACRES

EXISTING 12" STEEL CULVERT

UNT-2 (PER)
EXISTING CULVERT
TO BE USED (NO IMPACT)

INSTALL ORANGE CONSTRUCTION
FENCE TO PROTECT STREAM

EXISTING 12" STEEL CULVERT

STABILIZED CONSTRUCTION ENTRANCE
15' x 50'

CO RT 50/9 OLD JAMISON RUN RD

MATCHLINE SHEET 4

EXISTING ACCESS DRIVE SURFACE CHANGES
THROUGHOUT ROUTE TO WELL HEAD.
CONTRACTOR TO MAKE REPAIRS TO ANY
EXISTING TIMBER BRIDGE, GRAVEL DRIVE AREA,
OR ANY RUTTING AS INSTRUCTED BY THE
CONSTRUCTION SUPERVISOR.

ONCE PLUGGING OPERATIONS ARE COMPLETE
DISTURBED AREAS ARE TO BE SEEDED AND
STABILIZED.

LEGEND

- EXISTING ROAD
- EXISTING ROAD CENTERLINE
- EXISTING STREAM
- EXISTING WETLAND
- PROPOSED CONSTRUCTION ENTRANCE
- PROPOSED TIMBER MAT
- DELINEATION STUDY AREA
- LOD — PROPOSED LIMITS OF DISTURBANCE
- FS — PROPOSED 12" COMPOST FILTER SOCK
- PROPOSED ORANGE CONSTRUCTION SAFETY FENCE
- WELL HEAD

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

SCALE IN FEET
0 60 120

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

REVISION RECORD

No.	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.

XTO ENERGY, INC.
GAWTHROP WELL PLUGGING
CLARK DISTRICT
HARRISON COUNTY, WV

EROSION & SEDIMENT CONTROL PLAN

DATE	JUNE 2016
DRAWN BY	CCN
DWG SCALE	AS SHOWN
CHECKED BY	ZMH
PROJECT NO.	161-211
REVIEWED BY	SAC

DRAWING NO.
3

SHEET 3 OF 5

3301997P

NORTH

LIMITS OF DISTURBANCE - 1.77 ACRES

STUDY AREA - 2.74 ACRES

EXISTING ACCESS DRIVE SURFACE CHANGES THROUGHOUT ROUTE TO WELL HEAD. CONTRACTOR TO MAKE REPAIRS TO ANY EXISTING TIMBER BRIDGE, GRAVEL DRIVE AREA, OR ANY RUTTING AS INSTRUCTED BY THE CONSTRUCTION SUPERVISOR.

ONCE PLUGGING OPERATIONS ARE COMPLETE DISTURBED AREAS ARE TO BE SEEDED AND STABILIZED.

12" COMPOST FILTER SOCK (TYP.)

105'

100'

API: 47-033-01997
GAWTHROP, A 01
LAT: 39.275002°
LON: -80.433904°
N: 4347446.4 (UTM17)
E: 548829.4 (UTM17)
ELEV: 1375'

LEGEND

- EXISTING ROAD
- EXISTING ROAD CENTERLINE
- EXISTING STREAM
- EXISTING WETLAND
- PROPOSED CONSTRUCTION ENTRANCE
- PROPOSED TIMBER MAT
- DELINEATION STUDY AREA
- LOD — PROPOSED LIMITS OF DISTURBANCE
- FS — PROPOSED 12" COMPOST FILTER SOCK
- PROPOSED ORANGE CONSTRUCTION SAFETY FENCE
- WELL HEAD

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

SCALE IN FEET
0 60 120

STEVEN ALLEN CANTRELL
REGISTERED
15064
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER
6-16-16

RECEIVED
Office of Oil and Gas
JUL 8 2016
WV Department of Environmental Protection

REVISION RECORD

No.	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.

XTO ENERGY, INC.
GAWTHROP WELL PLUGGING
CLARK DISTRICT
HARRISON COUNTY, WV

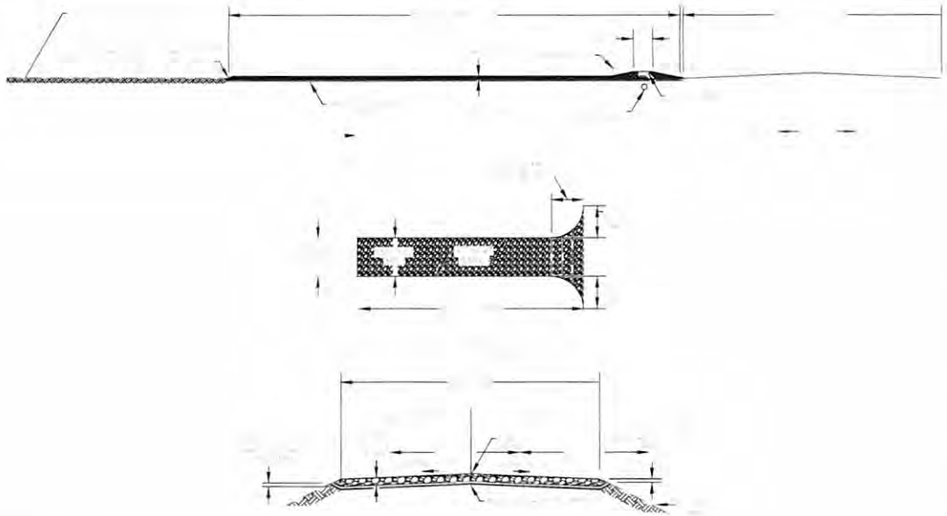
EROSION & SEDIMENT CONTROL PLAN

DATE	JUNE 2016	DESIGNED BY CTN
SCALE	AS SHOWN	DRAWN BY JMH
PROJECT NO.	201-411	CHECKED BY SAC

DRAWING NO. 4

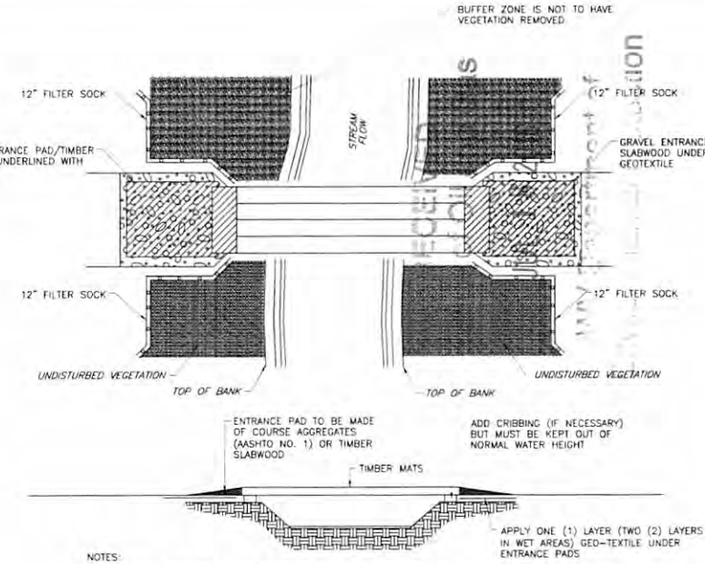
SHEET 4 OF 5

3301997P



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.

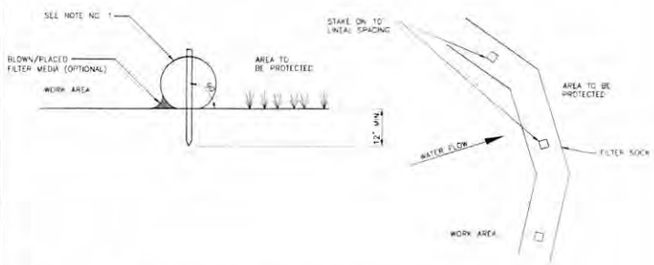
4.) EXCESS MUD IS TO BE REMOVED FROM THE ENTRANCE PADS AND MATS DURING CONSTRUCTION.

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

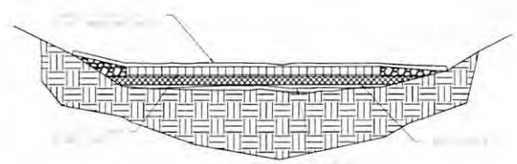
NOT TO SCALE



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 MANUFACTURERS 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

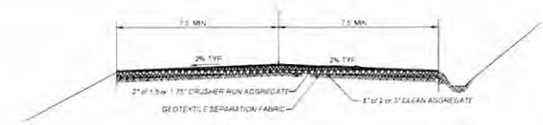
NOT TO SCALE



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 CONLEY
REGISTERED
15064
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER
6-16-16

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CEC
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CLARK DISTRICT
HARRISON COUNTY, WV

EROSION & SEDIMENT CONTROL PLAN DETAILS

DATE	12 NOV 2015	DRAWN BY: TLCS
DATE REV.	AS SHOWN	CHKD: SAC
DATE EXP.		JOB: 411
EXPIRE 28		SCALE:

DRAWING NO. 5