west virginia department of environmental protection

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

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

May 17, 2016

WELL WORK PERMIT

Re-Work

This permit, API Well Number: 47-7700113, issued to COLUMBIA GAS TRANSMISSION, LLC, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

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

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

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: 7420
Farm Name: SMITH, CARL & CHUNG JA
API Well Number: 47-7700113
Permit Type: Re-Work
Date Issued: 05/17/2016

Promoting a healthy environment.

7700113W

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

2. Pursuant to 35 CSR 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.

3. Pursuant to 35 CSR 4-19.1.c, if the operator is unable to sample and analyze any water well or spring with one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.

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

5. 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.

6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours

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

8. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced, drilling ceased, completion of any other permitted well work and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

47-077-00113W
Ck# 5120057
600.00

WW - 2B
(Rev. 8/10)

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

1) Well Operator:	Columbia Gas Transmission, LLC	307032	Preston	Union	Terra Alta, WV
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Terra Alta 7420 3) Elevation: 2176.7 ft

4) Well Type: (a) Oil _____ or Gas X

(b) If Gas: Production ____ / Underground Storage X

Deep X / Shallow _____

5) Proposed Target Formation(s): Chert & Oriskany Proposed Target Depth: 4990 & 5138
6) Proposed Total Depth: 5289 (existing) Feet Formation at Proposed Total Depth: Helderberg
7) Approximate fresh water strata depths: none reported by driller in 1963
8) Approximate salt water depths: none reported by driller in 1963

9) Approximate coal seam depths: none reported by driller in 1963

10) Approximate void depths,(coal, Karst, other): none reported by driller in 1963

11) Does land contain coal seams tributary to active mine? no

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)
Perforate new interval within existing storage zone. Perform coiled tubing clean-out and acid stimulate.

13) **CASING AND TUBING PROGRAM** * existing tubulars

TYPE	SPECIFICATIONS			FOOTAGE	INTERVALS	CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor	13.375	H-40	48	34	34	26 sx
Fresh Water	9.625	H-40	32	1498	1498	485 sx
Coal						
Intermediate						
Production	7	J-55	23	4999	4999	Stage 1 - 240 cu ft
Tubing						Stage 2 - 1126 cu ft
Liners	4.5	N-80	11.6	4663 - 5289	4663 - 5289	59 cu ft

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Packers: Kind: _____
Sizes: _____
Depths Set _____

7700113W

SUPPLEMENT TO WV DEP WW-2B PERMIT APPLICATION
Terra Alta 7420 (API 077-00113)

12) Proposed Acid Treatment

- 5000 – 10,000 gals HCl acid
- 20% nitrogen assist
- 200 - 300 bbls fresh water

WR-35

12/5/96

API # 47-077-00113 W

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas

Well Operator's Report of Well Work

Farm name: Smith, Carl and Chung Ja Operator well no.: 7420

LOCATION Elevation: 2175.06' Quadrangle: Terra Alta

District: Union County: Preston
Latitude: 10063 Feet South of 39 Deg. 25 Min. 0 Sec.
Longitude: 1800 Feet West of 79 Deg. 35 Min. 0 Sec.

Company: Columbia Gas Transmission
P.O. Box 1273
Charleston, WV 25325-1273
Agent: Richard L. Coty
Inspector: Phil Tracey
Permit Issued: 7/19/95
Well Work Commenced: 8/2/96
Well Work Completed: 10/9/96
Verbal Plugging
Permission granted on: N/A
Rotary Yes Cable ____ Rig
Total Depth (ft) 5297'(DPM)
Fresh water depths (ft) See previous records

Salt water depths (ft) See previous records

Is coal being mined in the area (Y/N) ? N
Coal Depths (ft) N/A

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
13 3/8"	34'	34'	26 sxs surf.
9 5/8"	1497'	1497'	255ft3LitPoz 275 sxs
7"	5020'	5020'	600ft3LitPoz 631sxs,170 galClmt,Surf.
4 1/2"	605'	605'	Liner* 150 sxs

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Open Flow Data

Producing formation Chert Pay zone depth (ft) 5014'-5028
Gas: Initial open flow N/A MCF/d **Oil:** Initial open flow N/A Bbl/d
Final open flow N/A MCF/d Final open flow N/A Bbl/d
Time of open flow between initial and final tests N/A Hours
Static rock Pressure N/A psig (surface pressure) after N/A Hours

Second producing formation Oriskany Pay zone depth (ft) 5128'-5227
Gas: Initial open flow N/A MCF/d **Oil:** Initial open flow N/A Bbl/d
Final open flow N/A MCF/d Final open flow N/A Bbl/d
Time of open flow between initial and final tests N/A Hours
Static rock Pressure N/A psig (surface pressure) after N/A Hours

NOTE: On the back of this form put the following: 1). Details of perforated intervals, fracturing or stimulating, physical change etc. 2). The well log which is a systematic detailed geological record of all formations including coal encountered by the wellbore.

Notes: * 4 1/2" liner run from 4663'-5293'

For: Columbia Gas Transmission Corp.
By:
Date:

WR-35

12/5/96

API # 47-077-00113 W

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas

Well Operator's Report of Well Work

Halliburton rigged up to the 2 3/8" tubing and killed the well with kill wt. fluid. Pulled out of the hole and retired 5141.06' of tubing. Atlas ran a Vertilog from 4900'-surface inside the 7" casing. The casing looked good. Atlas also ran a BAL from 4950' to surface and a gauge ring and junk basket to 4950'. Atlas wireline set a retrievable bridge plug at 4912'. Removed the old wellhead. Installed and tested a new 9 5/8" slip on weld head. Pressure tested the 7" casing by pressuring up on the casing at the surface with 750 psi for 30 minutes. Did not have any leakoff. Tripped in the hole with 3 1/2" drill pipe and recovered the retrievable bridge plug. Tripped in the hole with a 6 1/8" bit and tagged fill at 5113' . Drilled up fill down to original TD at 5230'. Drilled a new hole from 5230'-5297'. Atlas logged the hole with CIBL, DLL, ZDL, and Hex-Dip. Tripped in the hole with 19 jts. (605') of 4 1/2", 11.6 #/ft, N-80 LT&C casing liner and liner hanger/packer assembly. Set the hanger @ 4668'. The top of the liner was at 4663' and the bottom of the liner was at 5293'. Started to pump the spacer for the cement job and lost circulation. It appeared as if the packer on the top of the liner hanger/packer assembly had prematurely set. Left 4 1/2" in hole and pulled out of the hole with the 3 1/2" drill pipe and liner setting tool. Could not reestablish injection through the 4 1/2" shoe (plugged). Tripped in the hole with a 3 3/4" MT bit and drilled up the float collar in 4 1/2" liner. Reestablished injection. Atlas logged the hole with a GR/Neut/CCL. Atlas perforated the proposed bottom squeeze interval from 5266'-5268' with a 3 1/8" PPG, 4 SPF, 90 deg phased and 11.5 gram charges. Atlas perforated the proposed top squeeze interval from 4999'-5001' with the same type of gun. Atlas set a 4 1/2" EZSV cement retainer at 5258'. Lost the rope socket and setting tool in the hole. Tripped in the hole with the drill pipe and confirmed that the liner hanger/packer assembly was fully set. Tripped in the hole and recovered the lost fish. Tripped in the hole with the drill pipe and cement retainer stinger. Halliburrton established circulation between the two sets of squeeze perforations and performed a suicide squeeze with 150 sxs of Standard cement with additives. Used a 6 1/8" bit to dress off the top of the liner. Used a 3 7/8" bit to clean out the 4 1/2" liner down to the EZSV at 5258'. Displaced all of the workover fluid out of the hole with treated fresh water. Atlas ran a GR/N/CCL from 5248' -surface and a SBT from 5244'-4644'. Atlas perforated the Chert from 5014'-5028' and the Oriskany from 5128'-5227'. All of the perforations were made with a 3 3/8" EHSC gun, 6 SPF, 60 deg phasing and 21 gram charges. Halliburton used 1 3/4" coiled tubing to pickle the 4 1/2" liner and hydroblast the perforations with 500 gals SWIC acid with additives. After hydroblasting, the Oriskany and Chert perforations were treated in 5' intervals with Halliburton's Selective Injection Packer and 100 gals/ft of perforations of 10% FE acid with additives. After removing the coil tubing from the 4 1/2" liner the well unloaded on its own. To clean up the well it was blown to a 500 bbl frac. tank. The well was placed back into service on 10/9/96.

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Form OG-10

File well 7420 Bud 606 WO 129-11

7700113W

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL RECORD

Quadrangle Kingwood

Permit No. Pres. 113

Oil or Gas Well Storage (KIND)

Company Atlantic Seaboard Corporation
Address Terra Alta, West Virginia
Farm Archie M. Haught Et Al Acres 74½
Location (waters) Salt Lick Creek
Well No. 7420 Elev 2162.20
District Union County Preston
The surface of tract is owned in fee by
Address
Mineral rights are owned by
Address
Drilling commenced July 3, 1963
Drilling completed July 17, 1963
Date Shot From To
With
Open Flow /10ths Water in Inch
/10ths Merc. in Inch
Volume See reverse Cu. Ft.
Rock Pressure Storage lbs. hrs.
Oil bbls., 1st 24 hrs.
WELL ACIDIZED See reverse

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16			Kind of Packer
13-3/8"48#	34'	34'	
9-5/8"32#	1497'	1497'	Size of
xxx7" 23#	5020'	5020'	
6⅝			Depth set
5 3/16			
3			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED SIZE No. Ft. Date
See reverse

COAL WAS ENCOUNTERED AT FEET INCHES
FEET INCHES FEET INCHES
FEET INCHES FEET INCHES

WELL FRACTURED

RESULT AFTER TREATMENT See reverse
ROCK PRESSURE AFTER TREATMENT Storage
Fresh Water Feet Salt Water Feet

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Siltstone & Shale			0	4519			
Tully Lime			4519	4532			
Siltstone & Shale			4532	4968			
Onondaga Lime			4968	4990			
Chert			4990	5130			
Shale			5130	5138			
Oriskany			5138 ~~5230~~				
Total Depth				5230			

(over)

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Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks

Casing & Cement:

13-3/8", 48#/ft. H-40 casing - 34' (threads on) set @34' Cemented 26 sacks regular cement - 7-3-63

9-5/8", 32#/ft. H-40 casing - 1497' (threads on) set @1498' (KB). Cemented 255 cu. ft. "Litepoz" and 255 sacks Class A cement tailed w/50 sacks regular cement, 1% "Flac" and 3% Na Cl - 7-6-63 - Dowell.

7", 23#/ft. J-55 casing - 5020' (threads on) set @4999' (KB). Two stage cemented to surface. 1st stage - 100 cu. ft. "Litepoz" and 100 sacks Class A cement tailed w/170 gallons of "Cealment" (Latex Cement). 2nd stage - 500 cu. ft. "Litepoz" and 500 sacks Class A cement tailed w/31 sacks regular and 2% Ca Cl. 7-14-63 - Dowell.

Stimulation: 5000 gal. 15% Retarded HCl Acid; 5000 gal. 15% Regular HCl Acid; 5000 gal. water overflush and 60,000 scf of N_2 7-23-63 - Dowell.

Production: During Drilling: Chert gas - 12,217 Mcf 7-16-63
Chert & Oriskany - 13,600 Mcf 7-17-63

Before Acid: No test
After Acid: 95,000 Mcf @2350 psig (Back pressure test) 7-26-63
Final Shut-in: 7-26-63

Date OCT 3 1963, 19

APPROVED ATLANTIC SEABOARD CORPORATION, Owner

By _____ Supt
(Title)

MATHEWS PRINTING AND CHARLESTON W.

7700113W

WW-2A1
(Rev. 1/11)

Operator's Well Number Terra Alta 7420

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6, Section 8(d)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

(1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;

(2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Archie M. Haught & Pauline Haught (1/2 interest)	Columbia Gas Transmission, LLC	Storage lease 1090392-000	338 / 588
Cumberland & Allegheny Gas Co (1/2 interest)	Columbia Gas Transmission, LLC	Storage lease 1090558-000	291 / 340

Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Columbia Gas Transmission, LLC
By: Its: James E. Amos - Senior Well Service Engineer

T700113W

WW-2A
(Rev. 6-14)

1). Date: 3/25/2016

2.) Operator's Well Number Terra Alta 7420

3.) API Well No.: State 47- County 077 - Permit 00113

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

4) Surface Owner(s) to be served:
(a) Name Chung JA Kim Smith Living T
Address 4505 Boxwood Rd
Bethesda, MD 20816
(b) Name
Address
(c) Name
Address

5) (a) Coal Operator
Name not operated
Address
(b) Coal Owner(s) with Declaration
Name
Address
Name
Address
(c) Coal Lessee with Declaration
Name
Address

6) Inspector Gayne Knitowski
Address PO Box 108
Gormania, WV 26720
Telephone 304-546-8171

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

___ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas

OR

X Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through ___ on the above named parties by:

___ Personal Service (Affidavit attached)
X Certified Mail (Postmarked postal receipt attached)
___ Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

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, 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 and imprisonment.

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WV Department of

Well Operator Columbia Gas Transmission, LLC
By: James E. Amos
Its: Senior Well Services Engineer
Address: 1700 MacCorkle Ave. SE
Charleston, WV 25325-1273
Telephone: 304-483-0073
Email: jamos@cpg.com

Subscribed and sworn before me this 1st day of April, 2016

Mary Marie Clendenin Notary Public

My Commission Expires 3/22/2020

NOTARY PUBLIC OFFICIAL SEAL
MARY MARIE CLENDENIN
State of West Virginia
My Comm. Expires Mar 22, 2020
Columbia Pipeline Group
48 Columbia Gas Road Sandyville, WV 25275

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 depprivacyofficer@wv.gov

7700113W

WW-9
(2/15)

API Number 47 - 077 - 00113
Operator's Well No. Terra Alta 7420

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Columbia Gas Transmission, LLC OP Code 307032

Watershed (HUC 10) Saltlick Creek Quadrangle Terra Alta, WV

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

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste: _____

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

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application
■ Underground Injection (UIC Permit Number 34-105-23619, 34-121-22459, 34-059-20965, 34-119-28776)
_____ Reuse (at API Number _____)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
■ Other (Explain Rumpke Beech Hollow Landfill, Wellston, OH

Will closed loop system be used? If so, describe: yes - steel lines to steel portable tank

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. N/A

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

Additives to be used in drilling medium? N/A

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. N/A

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

-Landfill or offsite name/permit number? _____

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 August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

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

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Company Official Signature James E Amos

Company Official (Typed Name) James E. Amos

Company Official Title Senior Well Services Engineer

Subscribed and sworn before me this 1st day of April, 2016

Mary Marie Clendenin Notary Public

My commission expires 3/22/2020

NOTARY PUBLIC OFFICIAL SEAL
MARY MARIE CLENDENIN
State of West Virginia
My Comm. Expires Mar 22, 2020
Columbia Pipeline Group
48 Columbia Gas Road Sandyville, WV 25275

T700113W

Form WW-9

Operator's Well No. Terra Alta 7420

Columbia Gas Transmission, LLC

Proposed Revegetation Treatment: Acres Disturbed 0.5 Prevegetation pH 5 - 6

Lime 2 Tons/acre or to correct to pH 6 - 7

Fertilizer type 10-10-10

Fertilizer amount 600 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Orchard Grass and/or Tall Fescue	29	(if Tall Fescue is used, plant endophyte-free certified seed)	
Birdsfoot Trefoil (Empire)	9	(legumes to be inoculated by manufacturer's recommendation)	
Annual Rye	12		

* seed rate must be doubled for broadcast seeding

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Gayne J. Knowlton

Comments: Reclaim any disturbed areas ASAP

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Environmental Protection

Title: Inspector Date: 4/11/2016

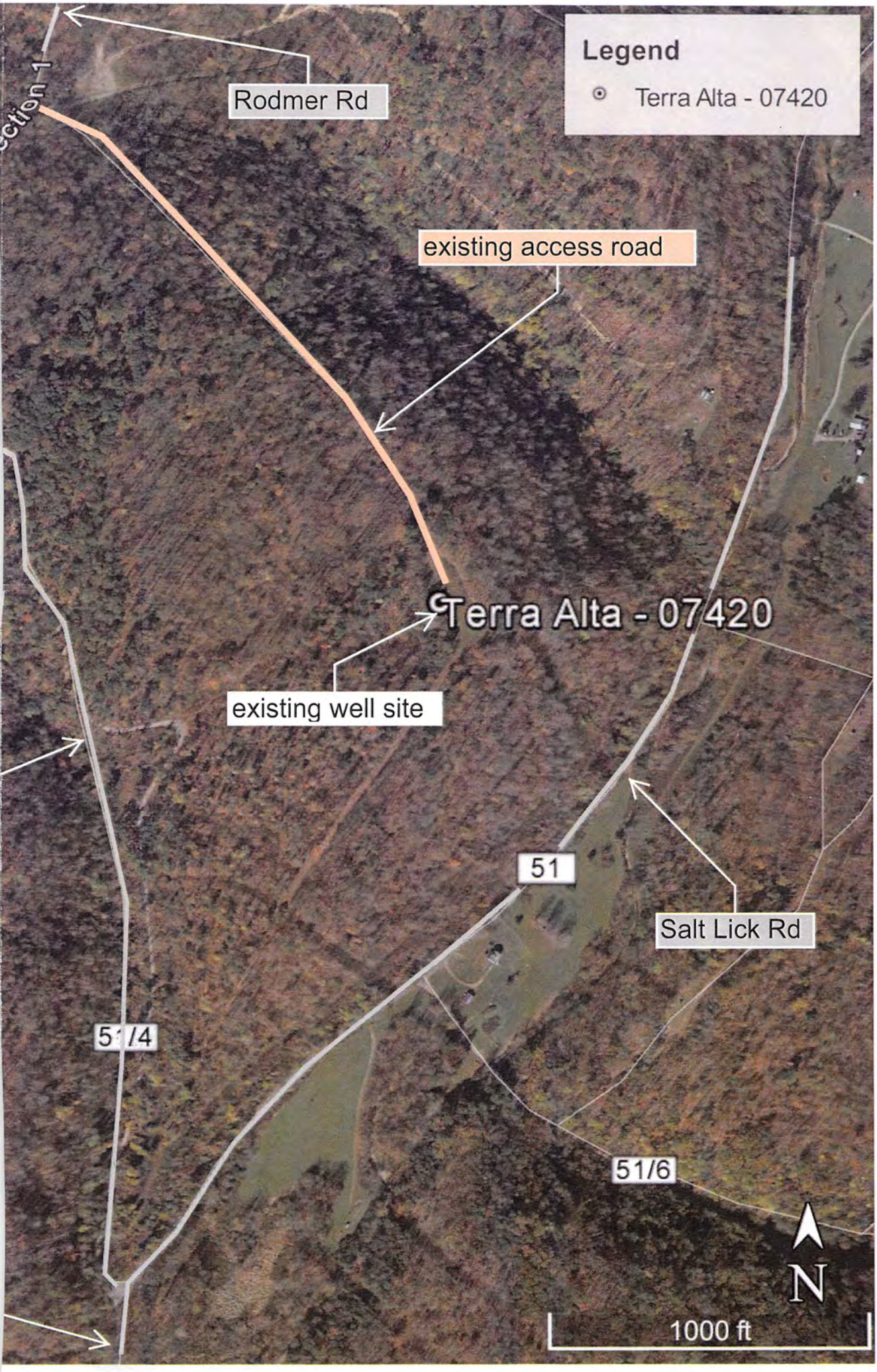
Field Reviewed? (X) Yes ( ) No

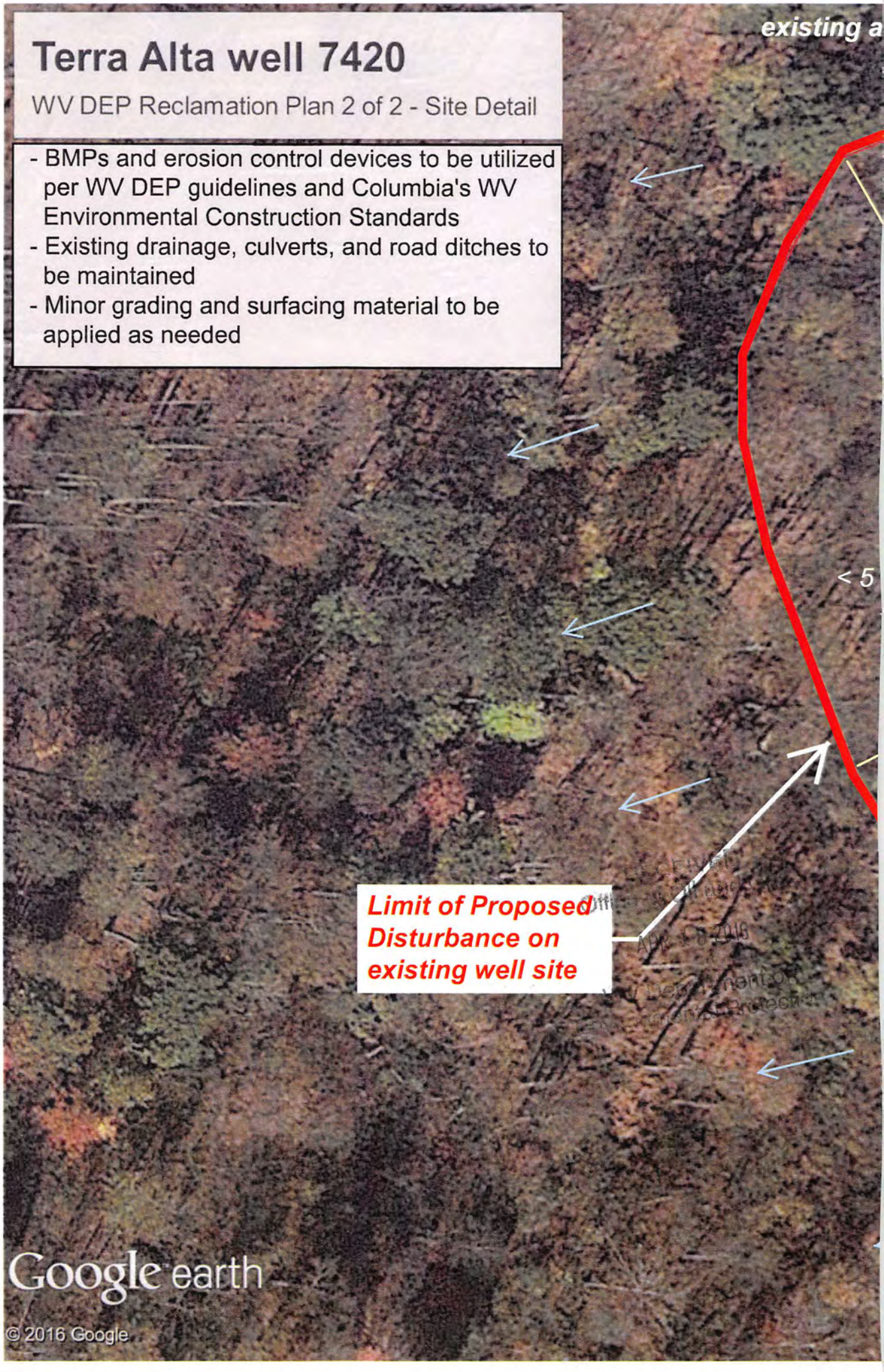
Terra Alta well 7420

WV DEP Reclamation Plan 1 of 2 - Access Road Overview

- BMPs to be utilized per WV DEP guidelines
- Existing drainage, culverts, and road ditches to be maintained
- Minor grading and road surfacing material to be applied as needed

7700113W


Legend
Terra Alta - 07420
Rodmer Rd
existing access road
Terra Alta - 07420
existing well site
51
Salt Lick Rd
51/4
51/6
N
1000 ft


Terra Alta well 7420
WV DEP Reclamation Plan 2 of 2 - Site Detail
- BMPs and erosion control devices to be utilized per WV DEP guidelines and Columbia's WV Environmental Construction Standards
- Existing drainage, culverts, and road ditches to be maintained
- Minor grading and surfacing material to be applied as needed
existing a
< 5
Limit of Proposed Disturbance on existing well site
Google earth
© 2016 Google

7700113W

ccess road
Legend
Terra Alta - 07420
< 5 degree slope
degree slope
170 ft
Terra Alta - 07420
< 5 degree slope
340 ft
N
100 ft

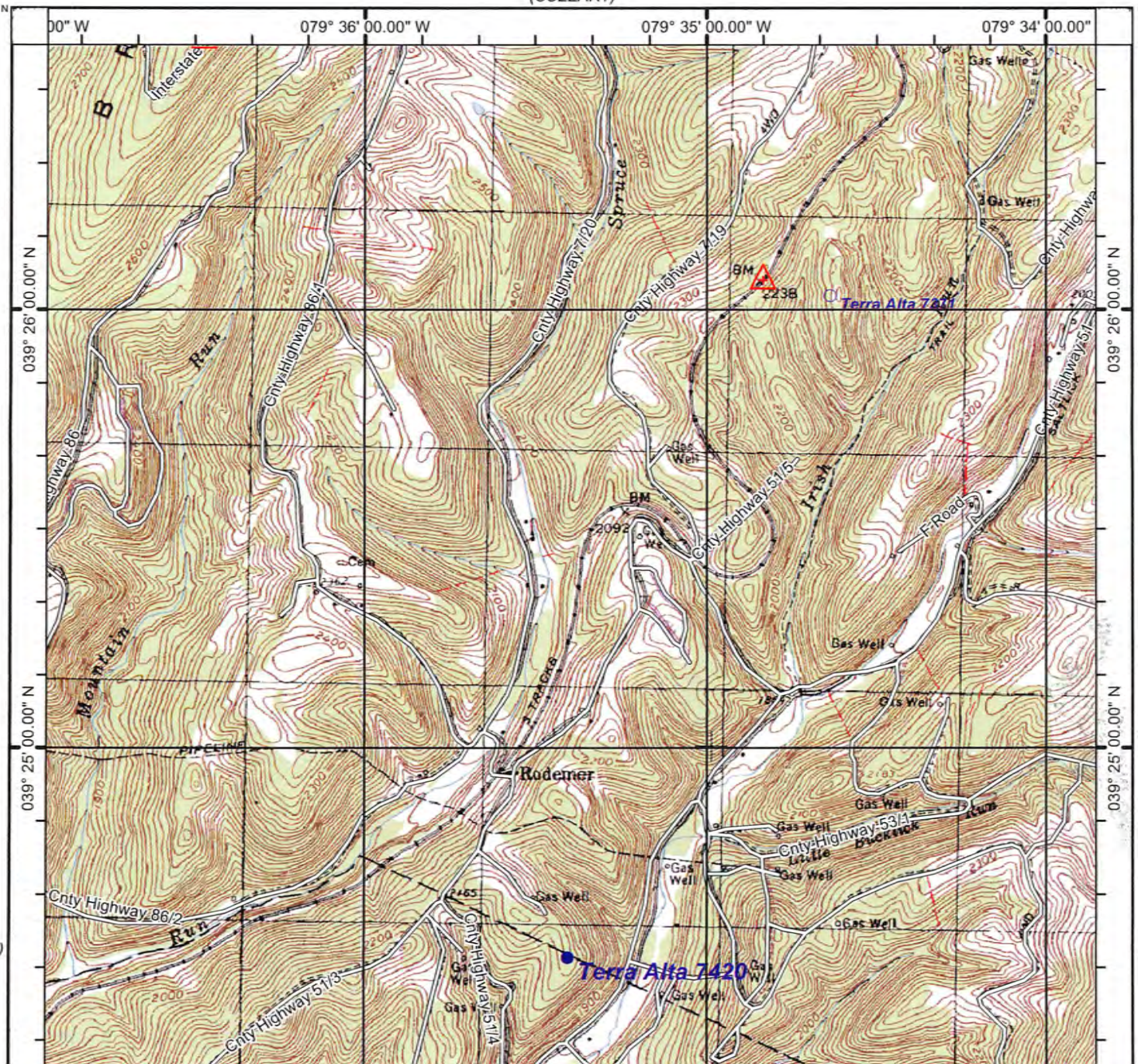
T100113W

TERRA ALTA QUADRANGLE
WEST VIRGINIA
TOPOGRAPHIC SERIES

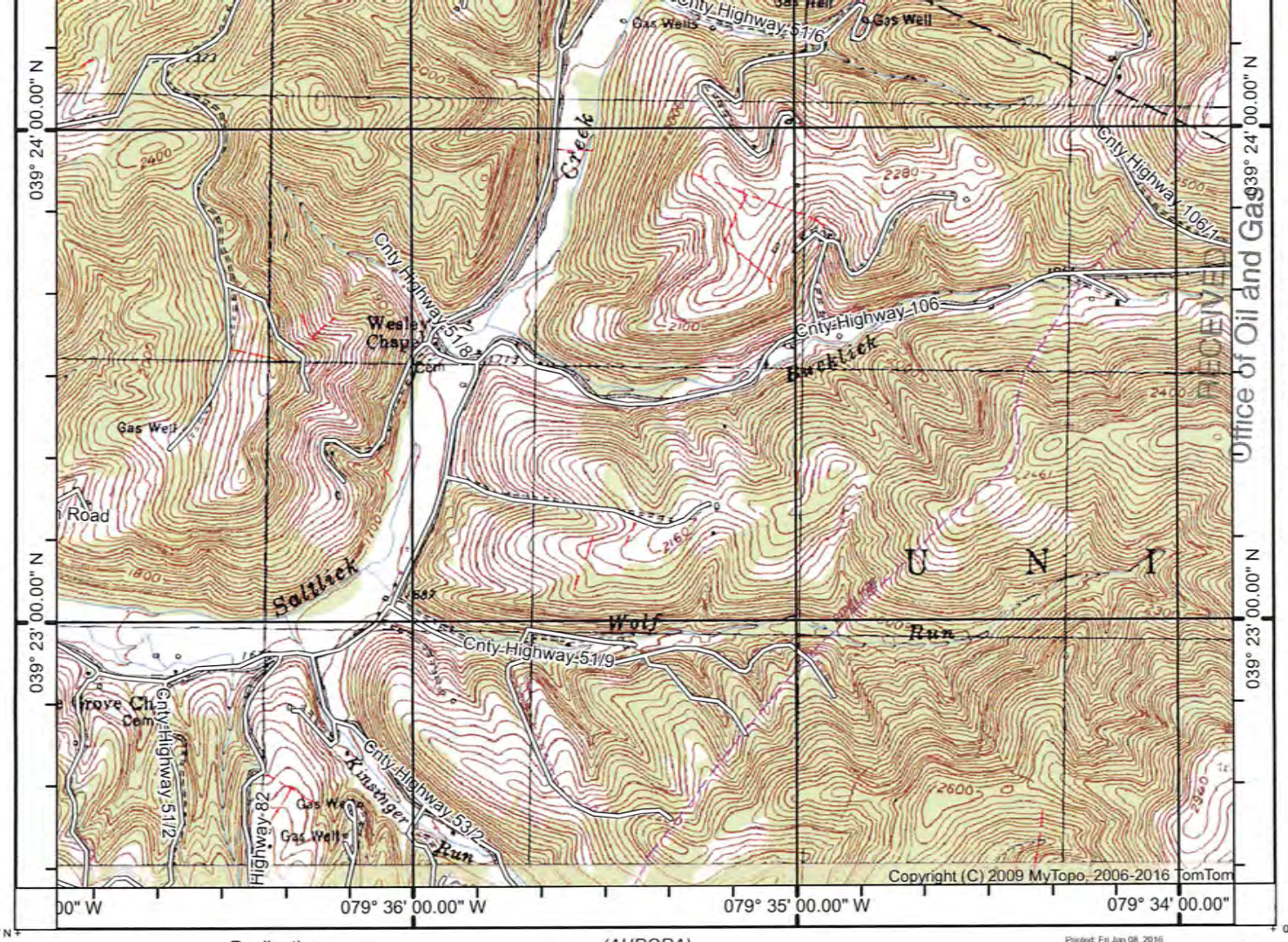
(VALLEY POINT) (SANG RUN)

(CUZZART)

079° 36' 56.28" W
039° 26' 36.49" N
079° 33' 50.91" W
039° 26' 36.49" N



(KINGWOOD) (OAKLAND)



039° 22' 27.37" N
079° 36' 56.28" W

039° 22' 27.37" N
079° 33' 50.91" W

Printed: Fri Jan 08, 2016

(AURORA)

SCALE 1:24000

(ROWLESBURG)

(TABLE ROCK)

Declination

MN GN

GN 0.89° E
MN 9.34° W

0 1
MILE

0 1000 2000
YARDS

0 1 2
KILOMETERS

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM 1929

Produced by MyTopo Terrain Navigator
Topography based on USGS 1:24,000 Maps

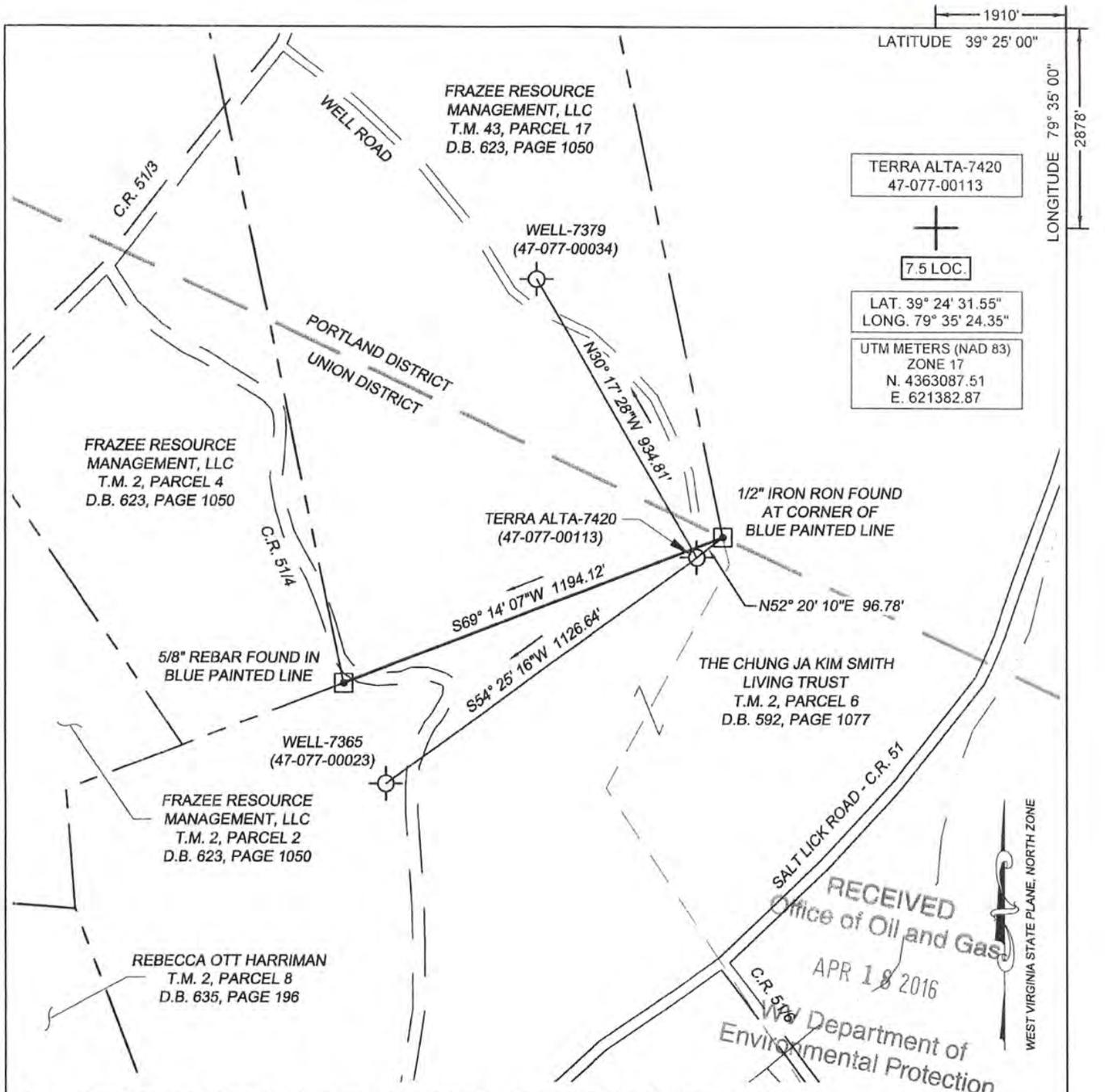
North American 1983 Datum (NAD83)
Lambert Conformal Conic Projection

To place on the predicted North American 1927 move the projection lines 11M N and 19M E

TERRA ALTA, WV
2000

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

7700113W



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

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

FILE No. 1601-2345-001-006
DWG No. TERRA ALTA-7420
SCALE 1"=400'
MINIMUM DEGREE OF ACCURACY 1:200
PROVEN SOURCE OF ELEVATION TRIMBLE R8-3 GPS UNIT

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

(SIGNED) _____
ROBERT F. THAW PS #965

PLACE SEAL HERE

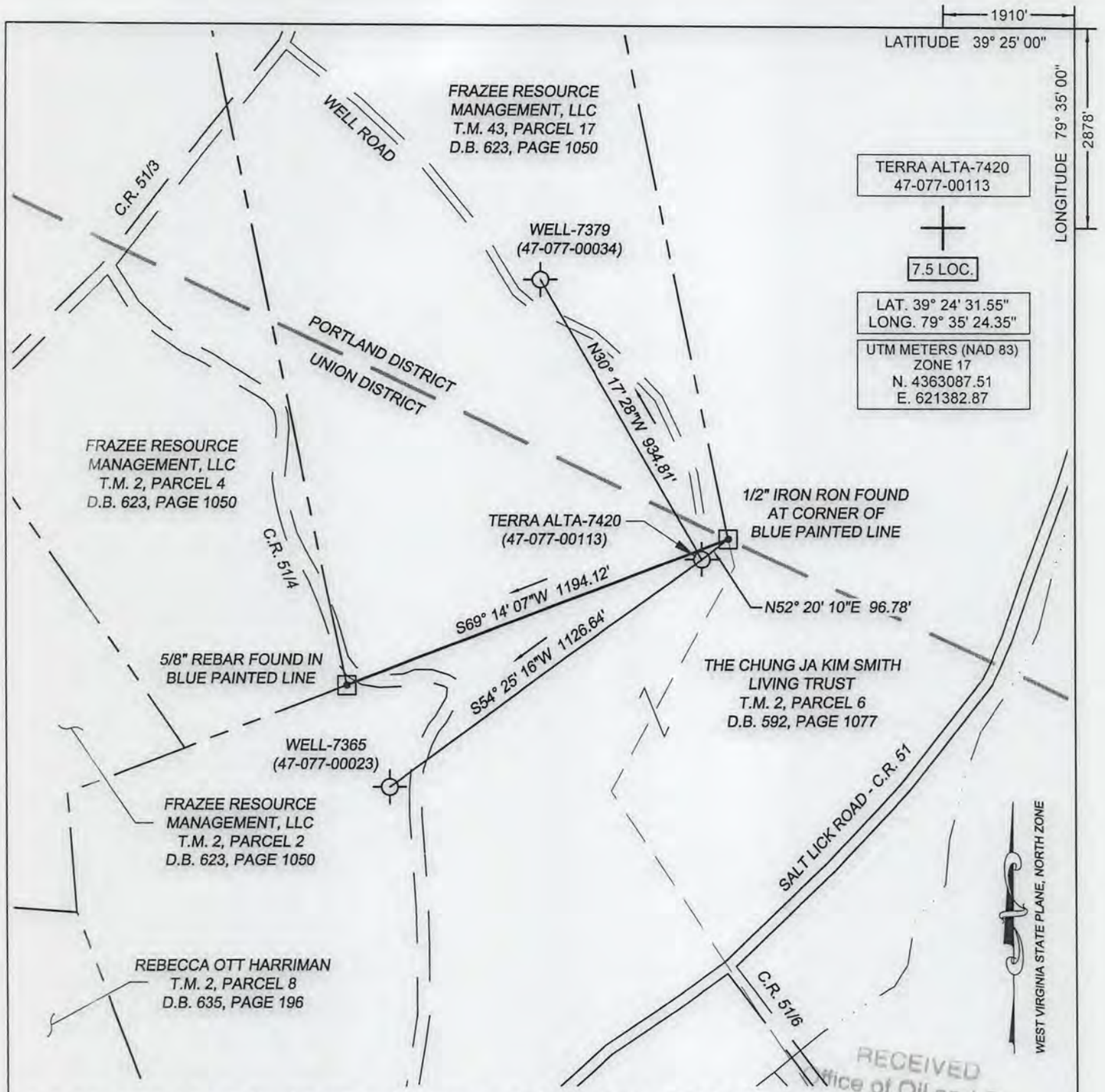
STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
NITRO, WV

DATE MARCH 14 2016
OPERATOR'S WELL No. 7420
API WELL No. 47 077 – 00113W
STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION ___ STORAGE X DEEP X SHALLOW ___
LOCATION: ELEVATION 2176.7' WATER SHED SALTLICK CREEK
DISTRICT UNION COUNTY PRESTON
QUADRANGLE TERRA ALTA, WV
SURFACE OWNER THE CHUNG JA KIM SMITH LIVING TRUST ACREAGE 74.5+/-
OIL & GAS ROYALTY OWNER ARCHIE M. HAUGHT AND PAULINE HAUGHT (1/2 INT.) LEASE AC. 37.25
OIL & GAS ROYALTY OWNER CUMBERLAND AND ALLEGHENY GAS CO. (1/2 INT.) LEASE AC. 37.25
LEASE No. 1090392-000 (1/2 INT.), 1090558-000 (1/2 INT.) LEASE AC. 74.5 TOTAL
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
TARGET FORMATION CHERT AND ORISKANY ESTIMATED DEPTH 5289
WELL OPERATOR COLUMBIA GAS TRANSMISSION, LLC DESIGNATED AGENT PAUL AMICK
ADDRESS PO BOX 1273, CHARLESTON, WV 25325-1273 ADDRESS P.O. BOX 1273, CHARLESTON W.V. 25325-1273

FORM IV-6 (8-78)

P:\2016\1601-2345-001-006-COLUMBIA-TERRA ALTA-7420\50-SURVEY\DWG\TERRA-ALTA-7420-WELL-PLAT.DWG



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

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DWG No. TERRA ALTA-7420
SCALE 1"=400'
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PROVEN SOURCE OF ELEVATION TRIMBLE R8-3 GPS UNIT

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(SIGNED) _____
ROBERT F. THAW PS #965

ROBERT F. THAW LICENSED No. 965 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

PLACE SEAL HERE

RECEIVED
Office of Oil and Gas

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
NITRO, WV

DATE MARCH 14 2016
OPERATOR'S WELL No. 7420
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