



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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Monday, December 30, 2019
WELL WORK PLUGGING PERMIT
Coal Bed Methane Well Plugging

CNX GAS COMPANY LLC
1000 CONSOL ENERGY DR

CANONSBURG, PA 15370

Re: Permit approval for L-64
47-049-01397-00-00

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.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, 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: L-64
Farm Name: RABER, ARLIE
U.S. WELL NUMBER: 47-049-01397-00-00
Coal Bed Methane Well Plugging
Date Issued: 12/30/2019

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.

WW-4B
Rev. 2/01

1) Date 11/18, 2019
2) Operator's
Well No. L-84
3) API Well No. 47-049 - 01397

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 ___ / Shallowx

5) Location: Elevation 1296 Watershed Messer Run
District Mannington County Marion Quadrangle Mannington

6) Well Operator CNX Gas Company LLC 7) Designated Agent Anthony Kendziora
Address 1000 Consol Energy Dr. Address 1000 Consol Energy Dr
Canonsburg, PA 15317 Canonsburg PA 15317

8) Oil and Gas Inspector to be notified 9) Plugging Contractor
Name Sam Ward Name Coastal Drilling east LLC
Address P.O. Box 2327 Address 70 gums Springs Road
Buckhannon, WV 26201 Morgantown WV 26508

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

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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 SJD Whitt Date 12/16/2019

Well: L-64 (Raber)

API#: 47-049-01397

District: Mannington

County: Marion

Elevation: 1296' (E&S Plans)

L-64 Proposed Plugging and Abandonment Procedure

1. Run in and tag TD (~1031'-1126) with wireline or small sandline tools. Confirm TD is inside slotted casing. (Make call to CNX if tagging high to come up with game plan or once has been found)
2. Once TD has been reached in slotted casing proceed to fill slotted casing with pea gravel to (731'-826') (1 ton= ~20 Cu. Ft. fill)
3. Once pea gravel has been placed in slotted liner verify top of gravel is at or above top of slotted casing
4. Once top of pea gravel has been verified TIH with tubing and prepare to cement
5. Place 50' cement plug on top of pea gravel
6. TOOH with cement string
7. Rig up wireline and tag 50' cement plug
8. TOOH and prepare to run Bond Log on 5 ½" casing if Bond Log tool will go to bottom
9. Run Bond Log from top of cement plug to surface to verify casing is cemented to surface. If cement top if found to not be at surface notify CNX and prepare to pull uncemented casing
10. If cement on 5 ½" is at surface or once uncemented has been pulled prepare to cement well to surface
11. TIH with work string to top of cement plug and cement well to surface
12. TOOH w/ work string and top off well with cement
13. Install 6"x14' monument (10' below grade, 4' above grade). Monument must contain API#, Well Name, Company Name and Date Plugged

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Note: All cement will be Class A. All spacers will be 6% gel

SOW
12/16/2019

Raber L-64
Mannington District, Marion WV
Original Completion : 11/1985
API #47-049-01397
Elevation = 1296' (From E&S Plans)

7" Casing @ 450'
Assuming cemented to surface

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Packer

5 1/2" Casing @ (731'-826') (Due to elevation variance)
Assuming Cemented to surface

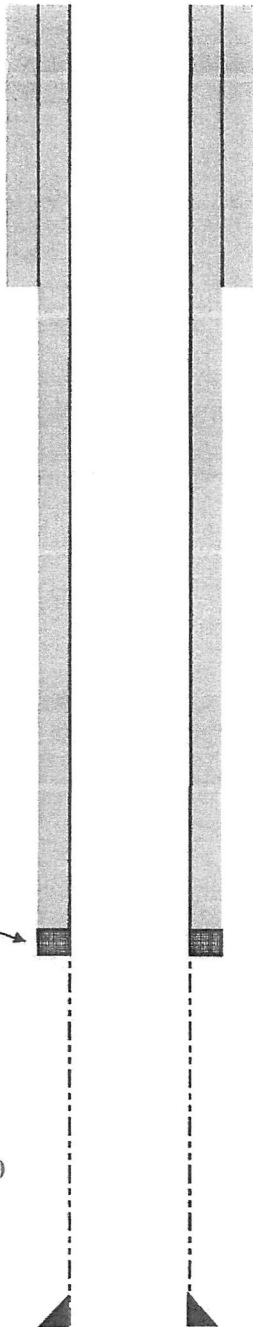
5 1/2" Slotted Liner ((731'-826')-(1031'-1126'))
Range due to elevation difference

Coal @ 1021'-1116'
(Range due to elevation difference)

6 3/4" Hole Size

TD @ (1031' to 1126")
(Due to elevation difference)

SAW
12/16/2019



State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-049-01397 County Marion District Mannington
Quad Mannington Pad Name Raber L-64 Field/Pool Name _____
Farm name Raber, Arlie Well Number L-64
Operator (as registered with the OOG) CNX Gas Company LLC
Address 1000 Consol Energy Drive City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 402458.29 Easting 1727664.24
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 1296 GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s) _____

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Date permit issued 12/3/2002 Date drilling commenced _____ Date drilling ceased _____
Date completion activities began _____ Date completion activities ceased _____
Verbal plugging (Y/N) _____ Date permission granted _____ Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft _____ Open mine(s) (Y/N) depths _____
Salt water depth(s) ft _____ Void(s) encountered (Y/N) depths _____
Coal depth(s) ft 1021-1116 Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) N

Reviewed by: _____

WR-35
Rev. 8/23/13

API 47-049 - 01397 Farm name Raber, Arlie Well number L-64

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor							
Surface		7"	450				
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6.75	5.5	1031'-1126				
Tubing							
Packer type and depth set		Formation Packer @ 731'-826'					

Comment Details Variance in depth due to variance in elevation

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor							
Surface							
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production		295				Surface	
Tubing							

Drillers TD (ft) 1031-1126 Loggers TD (ft) _____

Deepest formation penetrated Pittsburgh Coal Seam Plug back to (ft) _____

Plug back procedure _____

Kick off depth (ft) _____

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

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WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

WR-35
Rev. 8/23/13

API 47- 049 - 01397 Farm name Raber, Arlie Well number L-64

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)

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Please insert additional pages as applicable.

2.
Issued

49-01397C

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
COALBED METHANE PERMIT APPLICATION

Go B

1) Well Operator: CNX Gas Company, LLC (North) 2) Well Name St. Leo Gob Well No. L-64

3) Operator's Well Number L-64 4) Elevation 1391'

5) Well Type: (a) Oil / or Gas /
(b) If Gas: Production X / Underground Storage / CBM /
Deep / Shallow X /

6) Proposed Target Formation(s): Pittsburgh Coal Seam Mine Methane

7) Proposed Total Depth: 1,126 feet

8) Approximate Fresh Water Strata Depths: Not known

9) Approximate Salt Water Depths: Not known

10) Approximate Coal Seam Depths: Pittsburgh @ 1116'

11) Does Land Contain Coal Seams Tributary to Active Mines? Yes X / No /

12) (a) Proposed Well Work: Convert an existing ventilation borehole (Well No. L-64) to a producing CBM gob well.

(b) If Stimulation Proposed, Describe Means to be Used to Stimulate Well: N/A

13) (a) Does the proposed operation plan to convert an existing well (as defined in W. Va. Code § 22-6-1) or a vertical ventilation hole to a coalbed methane well? Yes X / No /

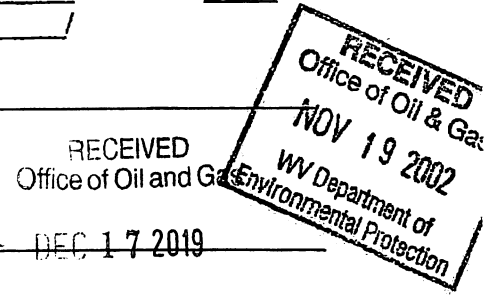
(b) If yes, please attach to this Application a list of all formations from which production is anticipated and a description of any plans to plug any portion of the well. Pittsburgh Coal Only Via Existing Casing.

14) (a) Will the proposed coalbed methane well be completed in some but not all coal seams for production (except for a gob well or vent hole proposed to be converted to a well)?
Yes / No / N/A

(b) If yes, please attach to this Application a plan and design for the well which will protect all workable coal seams which will be penetrated by the well.

15) (a) Does the proposed operation include horizontal drilling of a well commenced on the surface? Yes / No X /

(b) If yes, please attach to this Application a description of such operations, including both the vertical and horizontal alignment and extent of the well from the surface to total depth.



CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS		FOOTAGE INTERVALS			CEMENT
	Size	Grade	Weight per ft.	For Drilling	Left in Well	Fill-up (cu. ft.)
Conductor						
Fresh Water						
Coal						
Intermediate						
Production						
Tubing						
Liners						

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NOV 19 2002
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PACKERS:

*See attachment
GCS*

PLEASE SEE ATTACHED WELL REPORT *OK S.M.*
11-15-02

For Office of Oil and Gas Use Only

Fee(s) paid:
 Well Work Permit
 Reclamation Fund
 WPCP
 Plat
 WW-9
 WW-5B
 Bond _____
 Agent
 (Type)

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CONSOLIDATION COAL COMPANY
1800 WASHINGTON ROAD
PITTSBURGH PA

WELL NUMBER L-64

MINE Loveridge

DATE STARTED November 1985

DATE COMPLETED November 1985

CONTRACTOR Unknown

TOTAL DEPTH OF HOLE 1,126 (APPROX)
[In Feet]

CASING IN HOLE: [In Feet]	SLOTTED	<u>300</u>
	7-INCH	<u>450</u>
	5-INCH	<u>1,126</u>

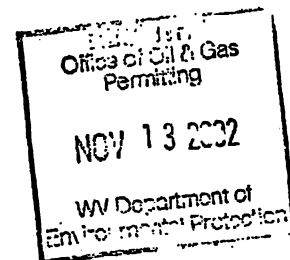
PACKER SIZE 3' 6"

CEMENT 295 [SKS]

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WV Department of
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47-049-01397P

WW-4A
Revised 6-07

1) Date: 11/18/19
2) Operator's Well Number
L-64
3) API Well No.: 47 - 049 - 01397

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

4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Brenda Joyce Raber</u>	Name <u>Consolidated Coal Company</u>
Address <u>304 Messers Run Rd</u>	Address <u>46226 National Road</u>
<u>Metz, WV 26585</u>	<u>Saint Clairsville, OH 43950</u>
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>Brenda Joyce Raber</u>
(c) Name _____	Address <u>304 Messers Run Rd</u>
Address _____	<u>Metz, WV 26585</u>
6) Inspector <u>Sam Ward</u>	Name <u>Consolidated Coal Company</u>
Address <u>P.O. Box 2327</u>	Address <u>46226 National Road</u>
<u>Buckhannon, WV 26201</u>	<u>Saint Clairsville, OH 43950</u>
Telephone <u>304-3987583</u>	(c) Coal Lessee with Declaration
	Name <u>Consolidated Coal Company</u>
	Address <u>46226 National Road</u>
	<u>Saint Clairsville, OH 4395</u>

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.

Commonwealth of Pennsylvania - Notary Seal
Rebecca Zachwieja, Notary Public
Washington County
My commission expires November 7, 2023
Commission number 1269683
Member, Pennsylvania Association of Notaries

Well Operator	<u>CNX Gas Company LLC</u>	RECEIVED
By:	<u>Raymond Hoon</u> <i>Raymond Hoon</i>	Office of Oil and Gas
Its:	<u>Senior Project Manager</u>	DEC 17 2019
Address	<u>1000 Consol Energy Dr</u>	WV Department of Environmental Protection
	<u>Canonsburg, PA 15317</u>	
Telephone	<u>724-485-4000</u>	

*Commonwealth of Pennsylvania
County of Washington.*

Subscribed and sworn before me this 12 day of December 2019
Rebecca Zachwieja Notary Public
My Commission Expires November 7, 2023

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.

47-049-013979

WW-9
(5/16)

API Number 47 - 049 - 01397
Operator's Well No. L-64

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

Operator Name CNX Gas Company, LLC OP Code 494458046

Watershed (HUC 10) Messer Run Quadrangle Mannington

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: NA

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number _____)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain Waste Management or Ryan Environmental will use Vacuum trucks and properly dispose of any fluid or waste return)

Will closed loop system be used? If so, describe: no

*SOW
12/16/2019*

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

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

Additives to be used in drilling medium? na

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

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

-Landfill or offsite name/permit number? na

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 *Raymond Hoon*

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Office of Oil and Gas

Company Official (Typed Name) Raymond Hoon

DEC 17 2019

Company Official Title Senior Project Manager

WV Department of
Environmental Protection

Commonwealth of Pennsylvania
County of Washington
Subscribed and sworn before me this 12th day of December, 2019

Rebecca Zachwieja Notary Public

My commission expires November 7, 2023

Commonwealth of Pennsylvania - Notary Seal
Rebecca Zachwieja, Notary Public
Washington County
My commission expires November 7, 2023
Commission number 1269683
Member, Pennsylvania Association of Notaries

Operator's Well No. _____

Proposed Revegetation Treatment: Acres Disturbed 4.25 acres Prevegetation pH _____

Lime 2-3 Tons/acre or to correct to pH _____

Fertilizer type 10-20-20 or equivalent

Fertilizer amount 500 lbs/acre

Mulch hay or straw 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Landino Clover	5	Landino Clover	5

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: S. D. Werneth

Comments: _____

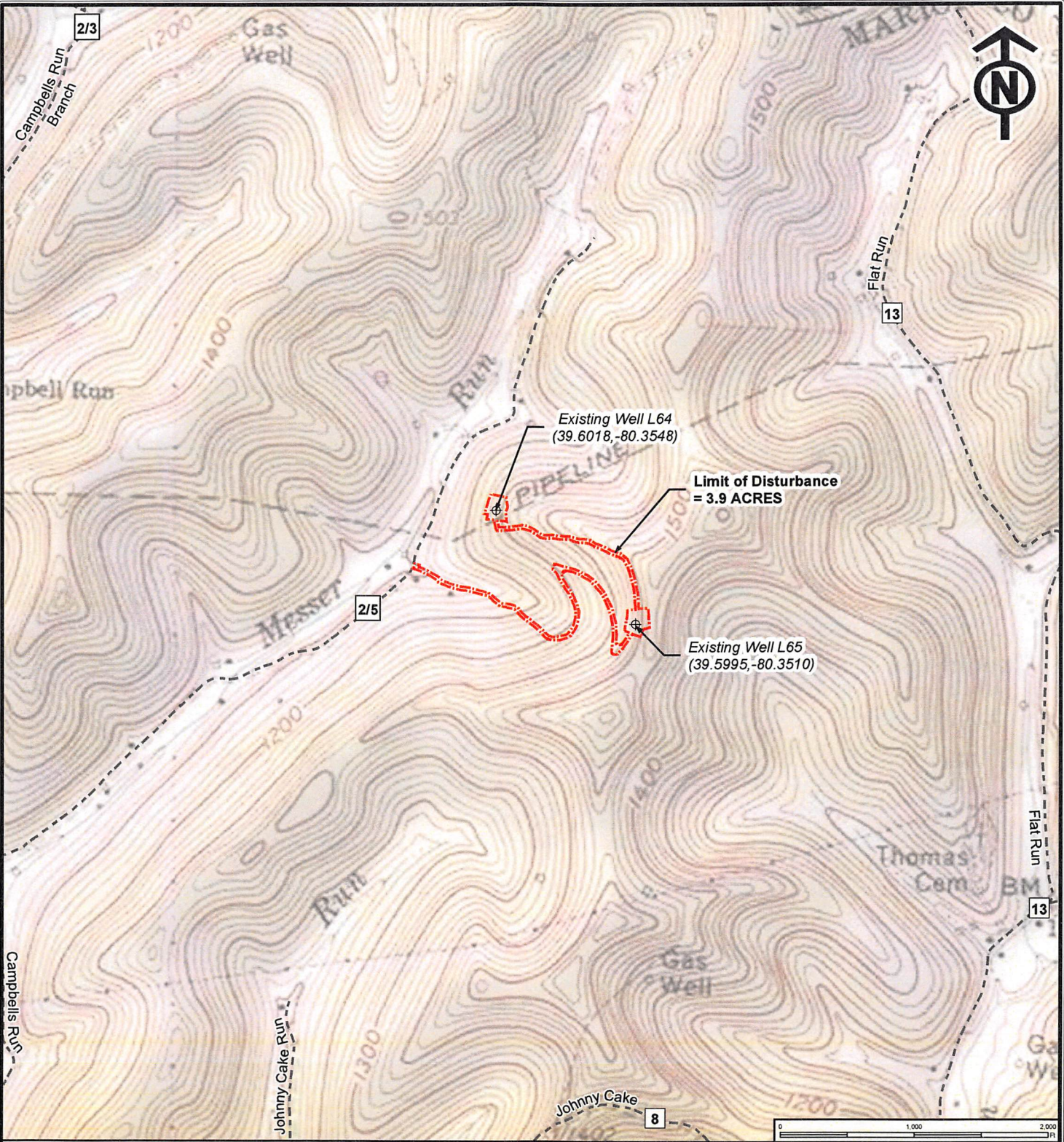
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Title: COG Inspector Date: 12/6/2019

Field Reviewed? () Yes (X) No



LEGEND

- ⊕ Existing Well
- - - - Limit of Disturbance
- - - - Roads

Prepared By:



www.keystoneconsultants.net 412-278-2100

REV	DESCRIPTION	DATE



**L64, L65 Well Plugging
Site Location Topographic Map**

Marion County, WV

DRAWING NUMBER: 001

DWN BY: GDM APR BY: RDM DATE: 10/2/2019

SCALE: 1" = 1,000 feet

SHEET: 1 OF 2

WW-7
8-30-06



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

API: 4704901397 WELL NO.: L64

FARM NAME: Raber

RESPONSIBLE PARTY NAME: CNX Gas Company

COUNTY: Marion DISTRICT: Mannington

QUADRANGLE: Mannington

SURFACE OWNER: Brenda J Raber

ROYALTY OWNER: _____

UTM GPS NORTHING: 4383762.93

UTM GPS EASTING: 555397.40 GPS ELEVATION: 394.89 m / 1295.58 ft

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 : Post Processed Differential

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.

Signature

Project Manager
Title

12-12-19
Date

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