



 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

Wednesday, April 17, 2019

WELL WORK PLUGGING PERMIT
 Coal Bed Methane Well Plugging

NYTIS EXPLORATION COMPANY LLC
 PO BOX 8

RAVENSWOOD, WV 26164

Re: Permit approval for HENDERSON 1BR
 47-081-01421-00-00

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: HENDERSON 1BR
 Farm Name: HENDERSON, TROY
 U.S. WELL NUMBER: 47-081-01421-00-00
 Coal Bed Methane Well Plugging
 Date Issued: 4/17/2019

F

47-081-01421P

04/19/2019

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.

1) Date March 18, 2019
2) Operator's 04/19/2019
Well No. Henderson 1-BR
3) API Well No. 47-081-01421
081 01421

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 1967 Watershed Clear Fork
District Trap Hill County Raleigh Quadrangle Arnett, WV

6) Well Operator Nytis Exploration Company 7) Designated Agent Lloyd Hall
Address P.O. Box 1589 Address 2480 Fortune Dr. Suite 300
Pineville, WV 24874 Lexington, KY 40509

8) Oil and Gas Inspector to be notified Name Gary Kennedy
Address 66 Old Church Lane
Pipestem, WV 25979
9) Plugging Contractor Name Unknown
Address _____

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

See Attached Sheet (Plugging Procedure)

THE PERMITTED CBM "PINNATE HORIZONTAL" SECTION
APPEARS TO HAVE NEVER BEEN DRILLED.
JMK

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

Work order approved by inspector Gary Kennedy Date 3/25/19

Henderson 1-BR

API# 47-81-1421
PLUGGING PROCEDURE

Current Configuration

13 3/8" @ 20', cemented to surface
9 5/8" @ 503', cemented to surface
7" @ 768', cemented to surface
2 7/8" @ 823'

PROCEDURE

1. Contact State Inspector 24 hours prior to starting work.
2. MIRU plugging rig.
3. Lay 2" line from wellhead to tank and stake down securely.
4. Blow well down. *check Rock Pressure*
5. TIHW rig tools to determine TD and fluid level.
6. Fish out sucker rods and bottom hole pump.
7. Pull 2 7/8" tubing.
8. Rig up wireline truck. TIH with CIBP and set @ 760'.
9. TIH with 2 3/8" work string to 760'.
10. Rig up Cement Company. Pump 60 sacks of Class A cement from 760' to 453'.
11. Pull tubing to 453'. Pump 15 bbls of 6% Gel from 453' to 200'.
12. Pull tubing to 200'. Pump 40 sacks of Class A cement from 200' to surface.
13. Pull 2 3/8" work string and lay down.
14. Set monument with information required by law.
15. RDMO.
16. Reclaim disturbed area.

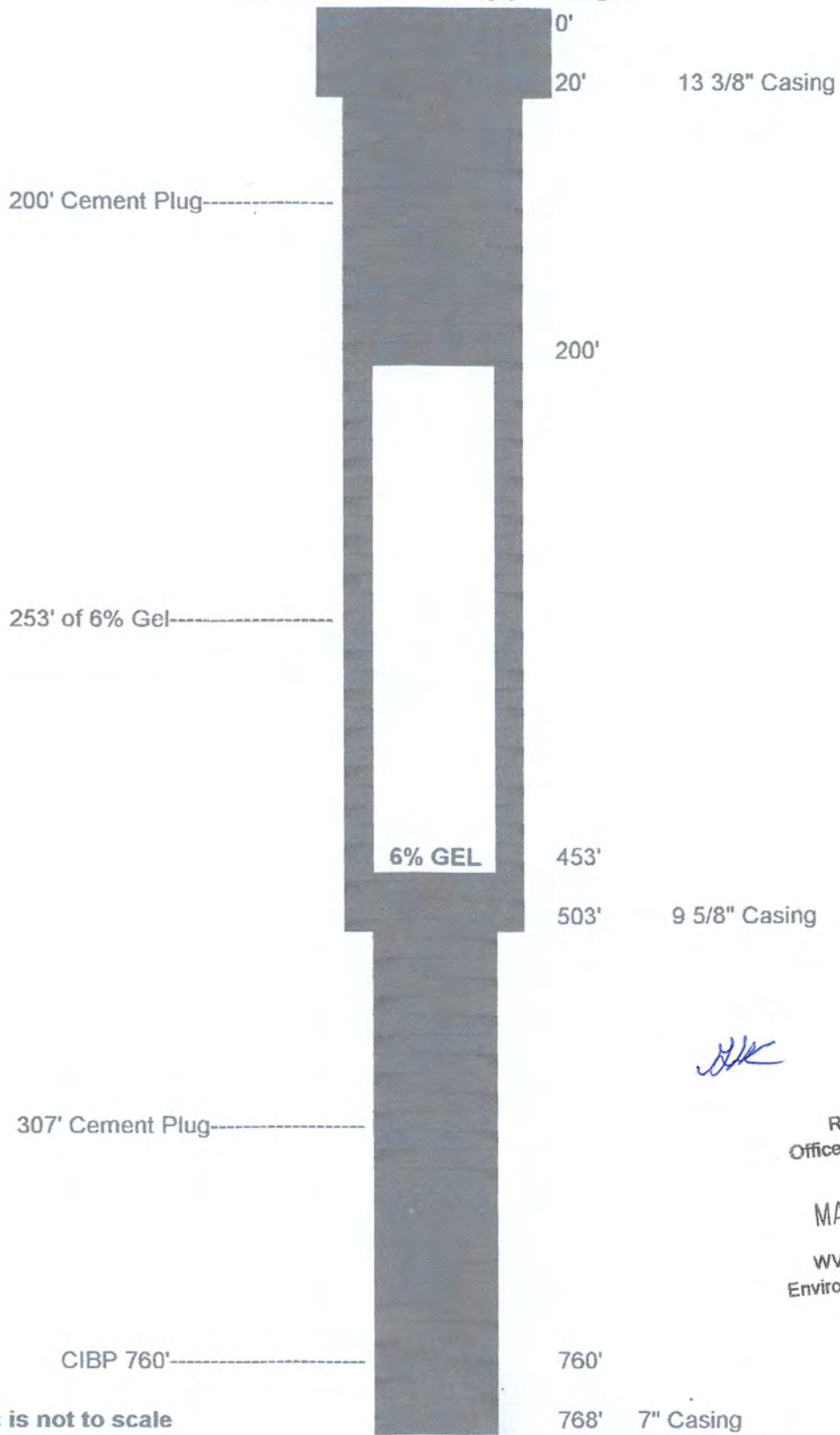


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Henderson 1-BR PROPOSED CONFIGURATION



Schematic is not to scale

HK

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State of West Virginia
Division of Environmental Production
Section of Oil and Gas
Well Operator's Report of Well Work

Farm Name TROY & NORMA HENDERSON

Operator Well No.: HENDERSON 1BR

LOCATION Elevation: 1967.43

Quadrangle: Arnett 7 1/2'

District: Trap Hill County: Raleigh
Latitude: _____ Feet South of _____ Deg. _____ Min. _____ Sec.
Longitude: _____ Feet West of _____ Deg. _____ Min. _____ Sec.

Company:

Penn Virginia Oil & Gas Corporation

	Casing and Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: 2550 East Stone Drive, Suite 110	13 3/8"	65'	65'	182.9 Cu Ft.
Kingsport, TN 37660	9 5/8"	515'	515'	295 Cu Ft.
Agent: Bryant Bowman	7"	752'	752'	236 Cu Ft.
Inspector: Terry Urban				
Date Permit issued: 12/18/2006				
Date Well Work Commenced: <u>12/18/2006</u>				
Date Well Work Completed: 01/31/2007				
Verbal Plugging:				
Date Permission granted on:				
Rotary X Cable Rig				
Total Depth (feet): 882				
Fresh Water Depth (ft): 385'				
Salt Water Depth (ft): None Reported				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft): 362; 521; 563; 787				

OPEN FLOW DATA

Producing formation Lower Beckley Pay zone depth (ft) 792
 Gas: Initial open flow 0 MCF/d Oil: Initial open flow _____ Bbl/d
 Final open flow _____ MCF/d Final open flow _____ Bbl/d
 Time of open flow between initial and final tests: _____ Hours
 Static rock pressure _____ psig (surface pressure) after _____ Hours

Second producing formation _____ Pay zone depth (ft) _____
 Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
 Final open flow _____ MCF/d Final open flow _____ Bbl/d
 Time of open flow between initial and final tests: _____ Hours
 Static rock pressure _____ psig (surface pressure) after _____ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANE, TEC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: Martha E. Hudson
By: EVELYN HUDSON
Date: 8/28/08

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AUG 29 2008
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DETAILS OF PERFORATIONS, FRACTURING, OR PHYSICAL CHANGE, ETC.

<u>FORMATIONS</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>REMARKS</u>
Sand	0000	0124	
Shale / Sandy Shale	0124	0252	
Sand	0252	0335	
Shale / Sandy Shale	0335	0362	
Coal	0362	0364	
Sand	0364	0476	Water @ 385'
Shale	0476	0508	
Sand	0508	0514	
Shale	0514	0521	
Coal	0521	0527	
Shale	0527	0563	
Coal	0563	0565	
Shale	0565	0572	
Sand	0572	0713	
Sandy Shale	0713	0719	
Sand	0719	0721	
Shale	0721	0724	
Sand	0724	0757	
Shale	0757	0783	
Sand	0783	0787	
Lower Beckley Coal	0787	0792	Target formation, produced water
Shale / Sandy Shale	0792	0834	
Fire Creek Coal	0834	0835	
Shale / Sandy Coal	0835	0872	
Sand	0872	0882	TD Vertical Well Henderson 1BR

WR-35
Rev. 8/23/13

API 47-081 - 01421 Farm name Henderson Well number 1-BR

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	17 1/2"	13 3/8"	20'	New	LS-37#		Yes-15 sks
Surface	12 1/4"	9 5/8"	503'	New	LS-26#		Yes-160 sks
Coal							
Intermediate 1	8 3/4"	7"	768'	New	LS-17#		Yes-115 sks
Intermediate 2							
Intermediate 3							
Production							
Tubing	6 1/4"	2 7/8"	823'	New	J-55-6.5#		N/C
Packer type and depth set							

Comment Details _____

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	Class A	15	15.6	1.18	1.4396	Surface	8 hrs.
Surface	Class A	160	15.6	1.18	3.1930	Surface	8 hrs.
Coal							
Intermediate 1	Class A	115	15.6	1.18	6.6520	Surface	8 hrs.
Intermediate 2							
Intermediate 3							
Production							
Tubing							

Drillers TD (ft) ^{823'} _____ Loggers TD (ft) ^{823'} _____
 Deepest formation penetrated _____ 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 RECEIVED
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Well cored Yes No Conventional Sidewall Were cuttings collected Yes No
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DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____
 Well Was Not Completed _____

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

WW-4A
Revised 6-07

1) Date: March 18, 2019
2) Operator's Well Number
Henderson 1-BR

3) API Well No.: 47 - 081 - 01421

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

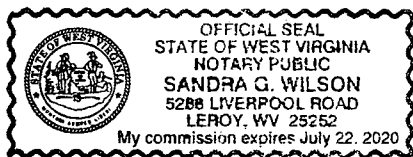
4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Troy and Norma Henderson</u>	Name <u>Rhino Eastern LLC</u>
Address <u>914 Saxon Road</u>	Address <u>P.O. Box 260</u>
<u>Glen Daniel, WV 25844</u>	<u>Bolt, WV 25817</u>
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name _____
	Address _____
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>Gary Kennedy</u>	(c) Coal Lessee with Declaration
Address <u>66 Old Church Lane</u>	Name _____
<u>Pipestem, WV 25979</u>	Address _____
Telephone <u>(304) 382 8402</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.



Well Operator	<u>Nytis Exploration Company</u>	
By:	<u>Bill Shreve</u> <i>Bill Shreve</i>	
Its:	<u>Consultant</u>	RECEIVED
Address	<u>3473 Triplett Road</u>	Office of Oil and Gas
	<u>Spencer, WV 25276</u>	
Telephone	<u>(304) 483 7251</u>	MAR 26 2019

Subscribed and sworn before me this 18th day of March, 2019
Sandra G. Wilson Notary Public
My Commission Expires 7/22/2020

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.

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

Operator Name Nytis Exploration Company OP Code _____

Watershed (HUC 10) Clear Fork Quadrangle Arnett

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 *JSK*

If so, please describe anticipated pit waste: H2O - Gel Water

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number UIC 2D0190460)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain North Hill Plant 47-019-00460)

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

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. No Drilling Proposed

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

Additives to be used in drilling medium? _____

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. No Cuttings

-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 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.

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Company Official Signature Bill Shreve

Company Official (Typed Name) Bill Shreve

Company Official Title Consultant

Subscribed and sworn before me this 18th day of March, 2019

Sandra G. Wilson Notary Public

My commission expires 7/22/2020



Proposed Revegetation Treatment: Acres Disturbed 2 Prevegetation pH 6.0
 Line 3 Tons/acre or to correct to pH 6.5
 Fertilizer type 10-20-20
 Fertilizer amount 1/3 Ton/Acre lbs/acre
 Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY 31	40	Orchard Grass	15
Alsike Clover	10	Alsike Clover	5
Annual Rye	5		
Red Top	2		

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: _____

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Title: Inspector Date: 3/25/19

Field Reviewed? (o) Yes () No

47-081-01421P

04/19/2019



WW-7
8-30-06



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

API: 47-081-01421 WELL NO.: 1-BR

FARM NAME: Henderson

RESPONSIBLE PARTY NAME: Nytis Exploration Company

COUNTY: Raleigh DISTRICT: Trap Hill

QUADRANGLE: Arnett, WV

SURFACE OWNER: Troy and Norma Henderson

ROYALTY OWNER: Troy Henderson

UTM GPS NORTHING: 37.794826, 465934.35

UTM GPS EASTING: 81.386927, 4183121.43 GPS ELEVATION: 1967

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 _____
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.

Bill Shreve
Signature

Consultant
Title

3/18/2019
Date

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