

Friends of the Hughes River
Watershed Organization
Jim Shreves, President
304-659-2466
3185 Pike Road
Ellenboro, WV 26346
friendsofthehughes@yahoo.com



Received

JUL 1 2013

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Attn: James Martin

Office of Oil and Gas
WV Dept. of Environmental Protection

Dear Mr. Martin,

This letter is in regards to an Underground Injection Control Permit (UIC). The permit has been published in the local newspaper, with 30 days comment period. Public Notice date is June 21, 2013. Publication date is June 26, 2013, for the Pennsboro News. Five days of comment period has already been lost.

A call to WV DEP requesting a copy of the original permit API#085-09669 and the new permit of API#UIC2D0859669 was made today, June 27, 2013. A resulting email required that this information would need to be obtained via the DEPFOIA. Time is of the utmost importance in this matter and the return email from the DEPFOIA noted there would be charges to obtain this information. Confirmation has been received from DEPFOIA, but no time period as to receipt of the requested information has been given.

We would also request any information on the construction of wastewater holding pits for this injection well, as well as copies of any previous inspections of the original well and pits.

Friends of the Hughes is extremely concerned about the modification of this permit, and feel any information regarding a disposal well in Ritchie County should be public knowledge and easily obtained.

It would be greatly appreciated, if an effort could be made to expedite the requested information, in order for our comment to the WV DEP Office of Oil and Gas to be made in a timely matter.

Sincerely,

Jim Shreves
Friends of the Hughes River

CC: Woody Ireland , Governor Earl Ray Tomblin, Don Jackson/file

Friends of the Hughes River is a community based volunteer organization. Our mission is to protect and enhance the environmental, recreational, and economic viability of the Hughes River Watershed, through community action, education, and cooperative efforts with residents, businesses, and governmental partners.

PLACE SEAL HERE

DESIGNATED AGENT HANST BRONDA
ADDRESS RT. 1 BOX 5
CAIRO, WV 26337

COUNTY NAME

PERMIT



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

Joe Manchin III, Governor
Randy C. Huffman, Cabinet Secretary
www.wvdep.org

November 19, 2009

FINAL INSPECTION REPORT

WELL PERMIT RELEASED

JAY-BEE OIL & GAS,

The FINAL INSPECTION REPORT for the permit, API Well Number: 47-8509669, issued to JAY-BEE OIL & GAS, and listed below has been received in this office, and reclamation requirements approved. The well designated by the permit number below has been released under reclamation and will remain under your bond.

James Martin
Chief

Operator: JAY-BEE OIL & GAS
Operator's Well No: SHANLEY 6A
Farm Name: TECH SERVICE CENTER
API Well Number: 47-8509669
Date Issued: 11/26/2007
Date Released: 11/19/2009

Promoting a healthy environment.

INSPECTORS PERMIT SUMMARY FORM

GPS YES [] NO []

DATE STARTED/LOCATION: 11-27-2007 OPERATOR: JAY-BEE OIL & GAS
DRILLING COMMENCED: 11-27-2007 FARM: TECH SERVICE CENTER
TO DATE: 11-27-07 DEPTHS: 6330 Well No: SHANLEY 6A
WATER DEPTHS: 85' COAL DEPTHS N/R

QUESTIONS FOR THIS REPORT ARE IN ACCORDANCE OF WV CODE 22-6-30 AND REGULATIONS 35CSR 4-12.1 AND 35CSR 4-16 AND THE GENERAL WATER POLLUTION CONTROL PERMIT.

POINTS ARE TO BE GIVEN UP TO MAXIMUM AS SHOWN BASED ON PERFORMANCE.

1. DID OPERATOR GIVE PROPER NOTICE TO INSPECTOR BEFORE THE FOLLOWING:
- A. CONSTRUCTION YES ☒ NO [] (2_PTS) (4_PTS) 4
- B. DRILLING YES ☒ NO [] (2_PTS)
2. WAS THE TIMBER CUT, STACKED, AND BRUSH USED FOR SEDIMENT BARRIERS BEFORE DIRT WORK STARTED? YES ☒ NO [] (2_PTS) (4_PTS) 4
3. ARE ALL LOCATION AND/OR ROAD BANKS BEING SLOPED? YES ☒ NO [] (4_PTS) (4_PTS) 4
4. CONSTRUCTIONS:
- WERE THE FOLLOWING SEDIMENT CONTROL STRUCTURES PROPERLY INSTALLED/MAINTAINED?
- A. ROAD DITCHES (1)_ (2)_ (3)_ (4)_ (PTS) B. CROSS DRAINS (1)_ (2)_ (3)_ (4)_ (PTS)
- C. CULVERTS (1)_ (2)_ (3)_ (4)_ (PTS) D. CREEK CROSSINGS (1)_ (2)_ (3)_ (PTS)
- E. DIVERSION DITCHES (1)_ (2)_ (3)_ (PTS) F. BARRIERS (1)_ (2)_ (3)_ (PTS)
- G. TEMPORARY SEEDING YES ☒ NO [] (5_PTS)

POINTS AVAILABLE FOR QUESTION 4: (28_PTS) 28

5. HAS TOP SOIL (IF ANY) BEEN STOCKED PILED? YES [] NO ☒ (2_PTS) (2_PTS) 2
6. IS THE PIT PROPERLY INSTALLED AND MAINTAINED? YES ☒ NO [] (6_PTS) (6_PTS) 6
7. RECLAMATION:
- A. ROADWAY (1)_ (2)_ (3)_ (PTS) B. LOCATION (1)_ (2)_ (3)_ (PTS)
- C. PITS (1)_ (2)_ (3)_ (PTS) D. PIPELINES (1)_ (2)_ (3)_ (PTS)
- E. TANK DIKES (1)_ (2)_ (3)_ (PTS) F. GATES & FENCES (1)_ (2)_ (3)_ (PTS)
- G. API INSTALLED YES ☒ NO [] (3_PTS)
- H. ADEQUATE SEEDING MATERIALS (1)_ (2)_ (3)_ (PTS)
- I. WAS SEED BED ADEQUATE (1)_ (2)_ (3)_ (PTS)

POINTS AVAILABLE FOR QUESTION 7: (27_PTS) 24

8. WAS RECLAMATION COMPLETED WITHIN:
- 6 MTHS OF TD 11_PTS; 4 MTHS OF TD 6_PTS; 2 MTHS OF TD 7_PTS;

POINTS AVAILABLE FOR QUESTION 8: (24_PTS) 11

TOTAL MAXIMUM POSSIBLE SCORE OF 99.

TOTAL RECLAMATION SCORE: 83

11-3-09

DATE RELEASED

David W. Cawen
INSPECTOR'S SIGNATURE

085-09669

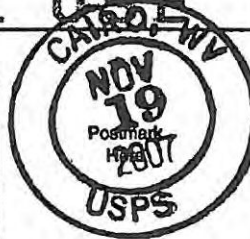
7006 2150 0002 9933 6249

U.S. Postal ServiceTM
CERTIFIED MAILTM RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

OFFICIAL USE

Postage	\$ 1.14
Certified Fee	2.65
Return Receipt Fee (Endorsement Required)	2.15
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 5.94



To: Tech Service Center
 c/o Mike Hall
 Rt 2 Box 24-A20AD
 Pennsboro, WV 26415

Instructions

Page of
2) Operator's Well Number
Mary Shanley No. 6A
3) API Well No.: 47 - 085 - 085 - 085
State County Permit

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name Jay-Bee Production Co. OP ID 24610
Watershed Hushers Run Quadrangle Ellenboro 7.5'
Elevation 1031' County Ritchie District Clay
Description of anticipated Pit Waste: Water Encountered During Drilling
Will a synthetic liner be used in the pit? (YES)

Proposed Disposal Method for Treated Pit Wastes:

- ☒ Land Application
☐ Underground Injection - UIC Permit Number
☐ Reuse (at API Number)
☐ Offsite Disposal (Supply form WW-9 disposal location)
☐ Other (Explain)

Proposed Work for Which Pit Will be Used:

- ☒ Drilling Swabbing
☐ Workover Plugging
☐ Other (Explain)

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION Permit issued on June 14, 1994, by the Office of Oil and Gas of the West Virginia Division of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any terms or conditions 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

Company Official (Typed or Printed)

Company Official Title

Subscribed and sworn before me this 19th day of November, 2007

Randy Broda

Agent/President

Office of Oil & Gas
Notary Public

My Commission Expires November 29 2006



WV Department of
Environmental Protection

WW2-A
Revised 8/02

1) Date: 8/19/07
2) Operator's Well Number
Shanley #6A

3) API Well No.: 47 - 085-00669
State County Permit

**STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT
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 Tech Service Center
Address c/o Mike Hall
Rt.2 Box 24-A20AD
(b) Name Pennsboro, W.Va. 26415
Address _____
(c) Name _____
Address _____
6) Inspector Dave Gilbert
Address _____
Telephone 304-389-3705

5) (a) Coal Operator
Name N/A
Address _____
(b) Coal Owner(s) with Declaration
Name _____
Address _____
(c) Coal Lessee with Declaration
Name N/A
Address _____

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

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

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.

Well Jay-Bee Oil & Gas Inc.
Operator _____
By: _____
Its: President
Address 1720 Rt. 22 East
Union, N.J. 07083
Telephone 908-686-1493

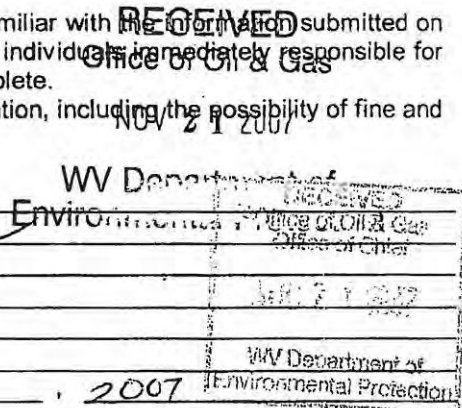
Subscribed and sworn before me this 19th day of November, 2007

Dale C. Morgan
My Commission Expires November 29, 2016

Notary Public



Official Seal
Notary Public, State of West Virginia
Dale C. Morgan
Jay-Bee Oil and Gas
Rt 1 Box 5
Cairo, WV 26037
My Commission Expires November 29, 2016



085-00669

Form WW-2A-1
(8/02)Operator's Well Number Shanley #6 R

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:

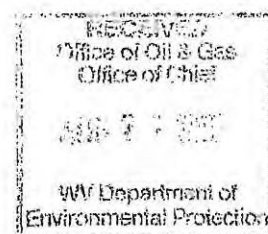
Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
Wayne Daugherty	Jay-Bee Production Company	12.5%	236/582

Well Operator: Jay-Bee Oil & Gas Inc.
By: [Signature]
Its: President

RECEIVED
Office of Oil & Gas

NOV 21 2007

WV Department of
Environmental Protection



85-09669

Form: WW - 2B

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

1) Well Jay-Bee Oil & Gas Inc. Operator 24610 085 Clay Ellenboro
Operator ID County District Quadrangle

2) Operators Well Number: Shanley #6A 3) Elevation: 1037'

4) Well Type: (a) Oil x or Gas x
 (b) If Gas: Production X / Underground Storage _____
 Deep _____ / Shallow x

5) Proposed Target Formation(s): Devonian Shale

6) Proposed Total Depth: 6300 Feet

7) Approximate fresh water strata depths: 75'

8) Approximate salt water depths: n/a

9) Approximate coal seam depths: n/a

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

11) Describe proposed well work Drill & Stimulate a new well

12) **CASING AND TUBING PROGRAM**

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor	13 3/8		<u>26.25</u>	<u>2007</u>	<u>11-26-2007</u>	
Fresh Water	9 5/8		<u>26.25</u>	130	130	CTS
Coal						
Intermediate	7		16	1235	1235	As per rules
Production	4 1/2	K-55	10.5	6300	6300	As per rules
Tubing						
Liners						

Packers: Kind
 Sizes
 Depths Set

West Virginia Department of Environmental Protection
Office of Oil and Gas

NOTICE TO SURFACE OWNERS

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing. The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore, if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

If no water well or spring is located within 1000 feet, the Chief may require the operator to sample and analyze water from a water well or spring within 2000 feet of the proposed well site.

Be advised, you have the right to sample and analyze any water supply at your own expense.

The laboratory used by the operator to analyze the samples will be approved by the Chief. The operator named below has decided to use the following laboratory to analyze the water samples:

☒ Contractor Name Sturm Enviromental
☐ Well operator's private laboratory

Well Operator Jay-Bee Oil & Gas Inc.

Address 1720 Rt,22 east
Union, N.J. 07083

Telephone 908-686-1493

FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underling which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site please indicate such.

Tech Service Center

c/o Mike Hall

Rt.2 Box 24-A20AD

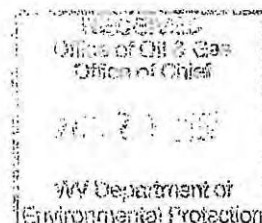
Pennsboro, W.Va. 26415

There does not appear to be any water wells within 1000'.

RECEIVED
Office of Oil & Gas

NOV 21 2007

WV Department of
Environmental Protection



WW-2A Surface Waiver

SURFACE OWNER WAIVER

County

Ritchie

Operator

Operator well number

Jay Bee
Shanley #6A**INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW2-A**

The well operator named on page WW2A is applying for a permit from the State to do oil or gas well work. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:**

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, Wv 25304
(304) 926-0450

Time Limits and methods for filing comments. The law requires these materials to be served on or before the date the operator files his Application. You have **FIFTEEN (15) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Comments must be in writing. Your comments must include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

The Chief has the power to deny or condition a well work permit based on comments on the following grounds:

- 1) The proposed well work will constitute a hazard to the safety of persons.
- 2) The soil erosion and sediment control plan is not adequate or effective;
- 3) Damage would occur to publicly owned lands or resources;
- 4) The proposed well work fails to protect fresh water sources or supplies;
- 5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation..."

If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.

List of Water Testing Laboratories. The Office maintains a list of water testing laboratories which you can hire to test your water to establish water quality prior to and after drilling. Contact the Chief to obtain a copy.

VOLUNTARY STATEMENT OF NO OBJECTION

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application for a Well Work Permit on Form WW2-A, and attachments consisting of pages 1 through ___ including a work order on Form WW2-B, a survey plat, and a soil and erosion plan, all for proposed well work on my surface land as described therein.

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

FOR EXECUTION BY A NATURAL PERSON

[Signature] Date 11-21-07
Signature

FOR EXECUTION BY A CORPORATION, ETC.

Company Name _____
By _____
Its _____ Date _____
Signature _____ Date _____



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

Joe Manchin III, Governor
Stephanie R. Timmermeyer, Cabinet Secretary
www.wvdep.org

November 26, 2007

WELL WORK PERMIT

New Well

This permit, API Well Number: 47-8509669, issued to JAY-BEE OIL & GAS, 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 of completion of drilling, 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 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.

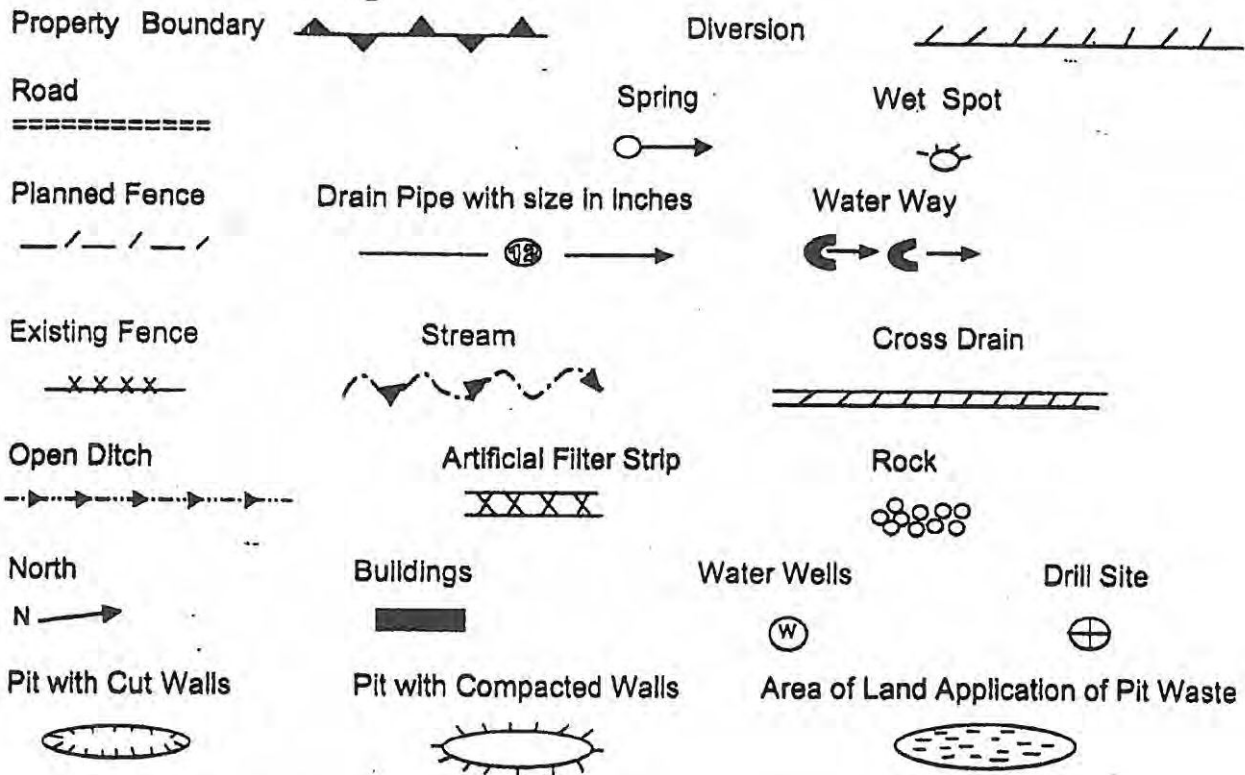
James Martin
Chief

Operator's Well No: SHANLEY 6A
Farm Name: TECH SERVICE CENTER
API Well Number: 47-8509669
Permit Type: New Well
Date Issued: 11/26/2007

Promoting a healthy environment.

085-09669

LEGEND



Proposed Revegetation Treatment: Acres Disturbed 1± Prevegetation pH 5-5

Lime 2 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20) or equivalent 500 Lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre or hydroseed

SEED MIXTURES

Area I		Area II	
Seed Type	Lbs/acre	Seed Type	Lbs/acre
67.29% Orchard Grass	9.87% Kentucky Bluegrass	Same	40
19.89% Timothy	2.95% Inert Matter	Same	40

ATTACH:

Drawing(s) of road, location, pit and proposed area for land application.
Photocopies section of involved 7.5' topographic sheet.

Plan approved by: [Signature]

Title: Revegetation Plan Date: 11-26-2007

Field Reviewed? ☒ Yes ☐ No

085-09669

Jay-Bee Production Co.

Mary Shanley Lease 80 Ac. No. 6A

Surface Owner: Tech Service Center

Note: Topsoil to be stockpiled
for use later in reclaiming
location site!

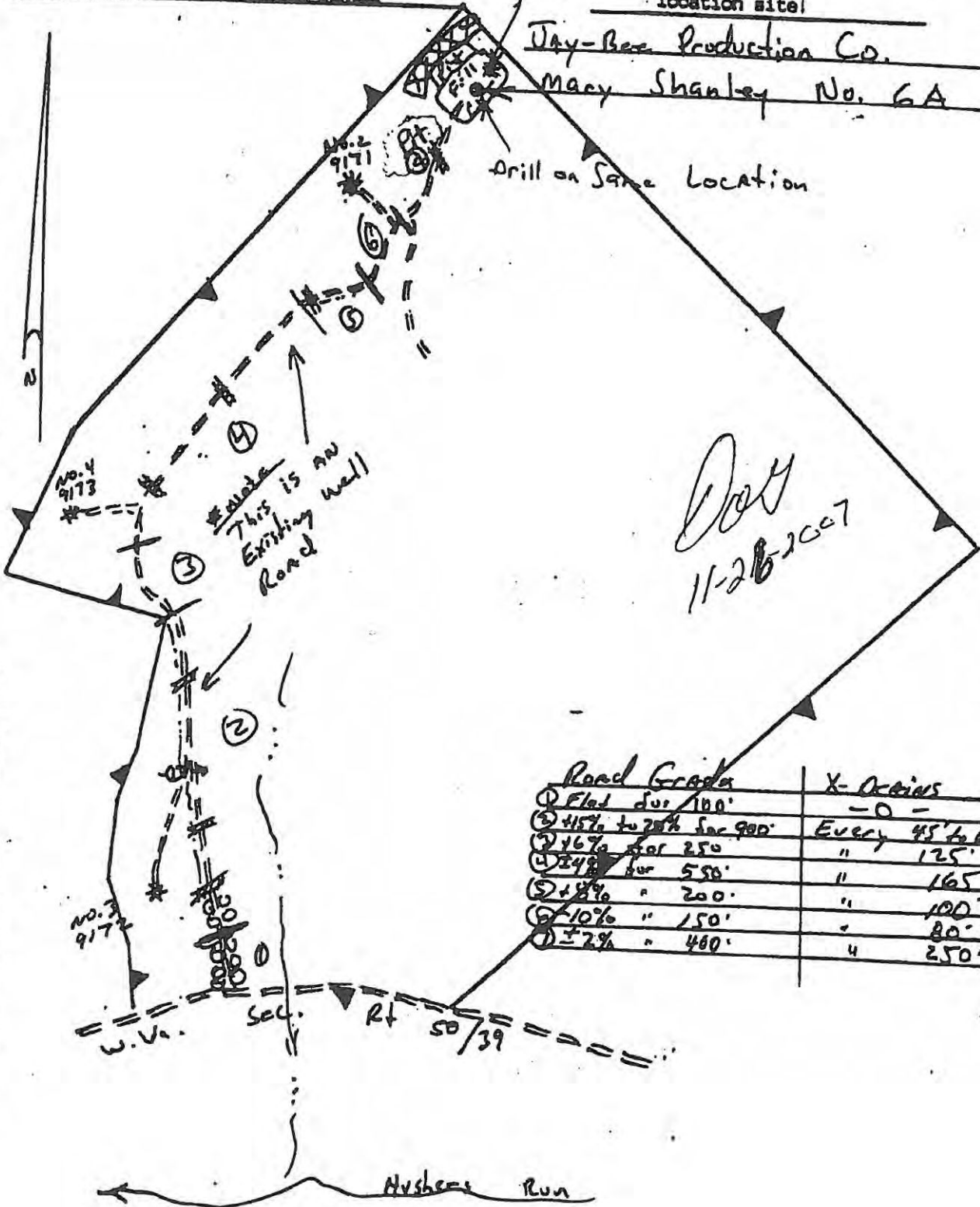
Jay-Bee Production Co.
Mary Shanley No. 6A

Shanley 6
9630

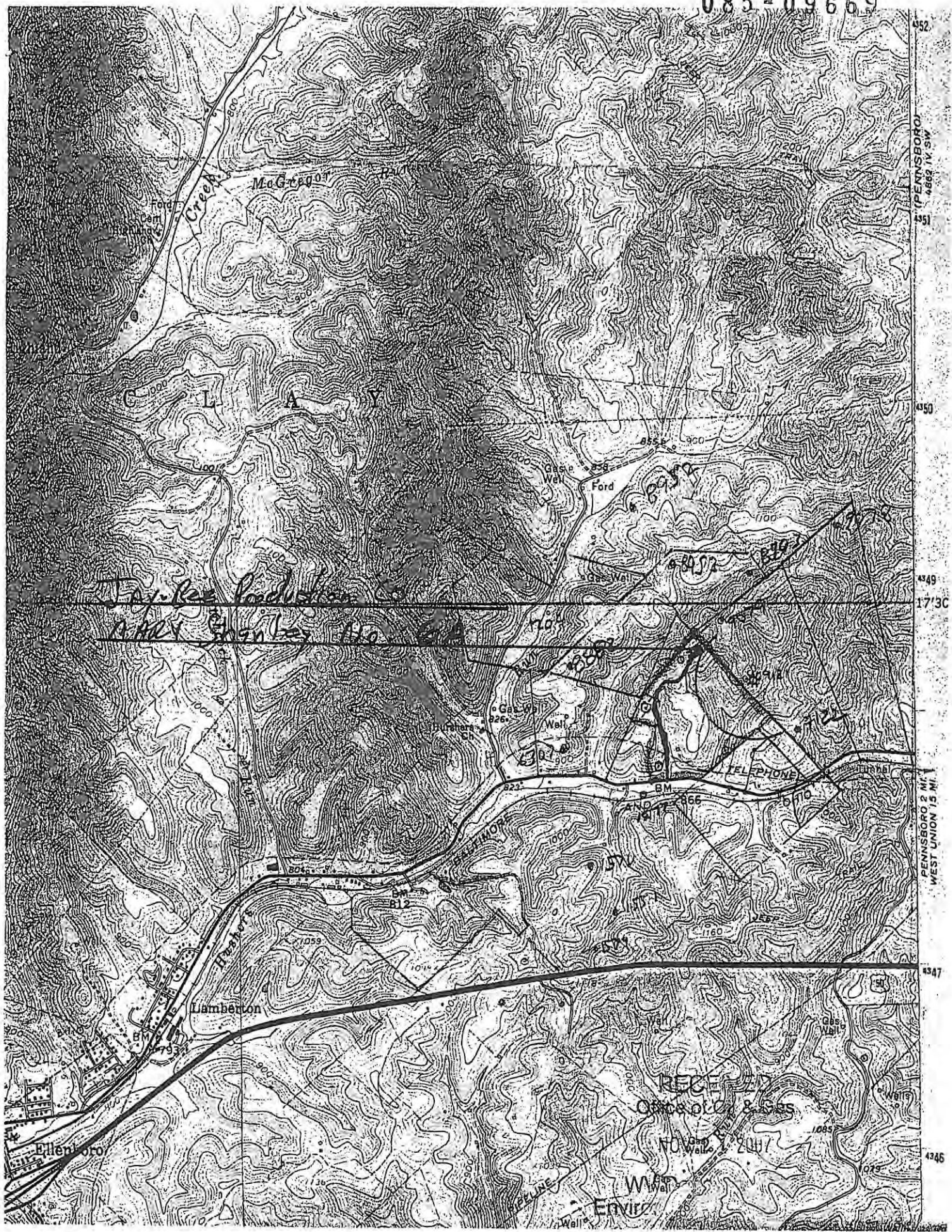
Drill on Same Location

* Temporary seeding will be put on all slopes

* Sediment control to be established on
construction phase and reclamation phase.



085 20 09669



JAY-BEE PRODUCTION CO.
A-101

RECEIVED
Office of Oil & Gas
NOV 1 2007

452
451
450
449
17'30
437
436
PENNSBORO 2 MI.
WEST UNION 15 MI.

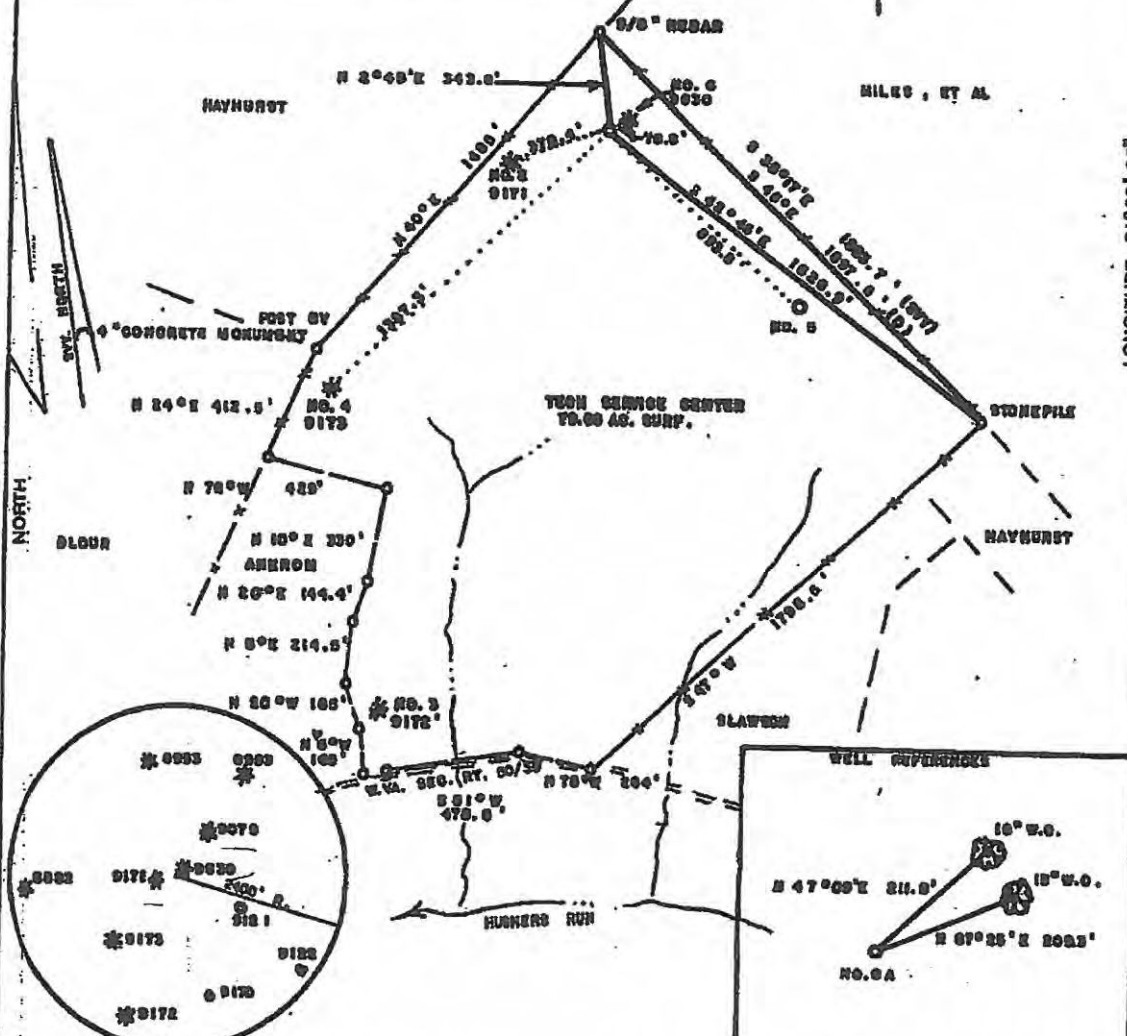
MARY SHANLEY LEASE 80 AC.

3800' W

LATITUDE 39° 17' 30"

MILES, ET AL

LONGITUDE 81° 00' 00"



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

FILE NO. _____
DRAWING NO. _____
SCALE 1" = 800'
MINIMUM DEGREE OF ACCURACY 1/200
PROVEN SOURCE OF ELEVATION 6M SOUTH OF LEASE
ELEV. = 886'

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 DEPARTMENT OF ENERGY.

(SIGNED) Mark C. Echeverre

R.P.E. _____ I.L.S. 490

PLACE SEAL HERE

STATE OF WEST VIRGINIA
Division of Environmental Protection
OFFICE OF OIL AND GAS



DATE NOVEMBER 18, 2007
OPERATOR'S WELL NO. MARY SHANLEY NO. 8A
API WELL NO. _____

WELL TYPE: OIL ☐ GAS ☒ LIQUID INJECTION ☐ WASTE DISPOSAL ☐
(IF "GAS," PRODUCTION ☒ STORAGE ☐ DEEP ☐ SHALLOW ☒
LOCATION: ELEVATION 1037' WATER SHED HUSHERS RUN
DISTRICT CLAY COUNTY MITCHELL
QUADRANGLE ELLENBORO
SURFACE OWNER TECH SERVICE CENTER ACREAGE 79.00
OIL & GAS ROYALTY OWNER J.G. DAUGHERTY HRS., ET AL LEASE ACREAGE 80 AC.
LEASE NO. _____
PROPOSED WORK: DRILL ☒ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR
STIMULATE ☒ PLUG OFF OLD FORMATION ☐ PERFORATE NEW
FORMATION ☐ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG ☐
TARGET FORMATION DEVONIAN SHALE ESTIMATED DEPTH 9300'
WELL OPERATOR JAY BEE PRODUCTION CO. DESIGNATED AGENT RANDY BRODA
ADDRESS 1730 RT. 22 EAST ADDRESS RT. 1 BOX R
UNION, NJ 07085 CAIRO, WV 26357

COUNTY NAME

PERMIT

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas

Well Operator's Report of Well Work

Farm name: Shanley Operator Well No.: 6a

LOCATION: Elevation: 1037 Quadrangle: Ellenboro

District: Clay County: Ritchie
Latitude: 870 Feet South of 39 Deg. 17 Min. 30 Sec.
Longitude 3800 Feet West of 81 Deg. 00 Min. 00 Sec.

Company: Jay-Bee Oil & Gas Inc.

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: 1720 Rt. 22 East				
Union, N.J. 07083				
Agent: Randy Broda	9 5/8	130	130	Cts
Inspector: Steve Mossor				
Date Permit Issued: 11/26/07	7	1842	1842	CTS
Date Well Work Commenced: 11/27/07				
Date Well Work Completed: 12/1/07				
Verbal Plugging:	4 1/4	6263	6263	65 SKS
Date Permission granted on:				
Rotary x Cable Rig 30				
Total Depth (feet): 6269				
Fresh Water Depth (ft.): 75'				
Salt Water Depth (ft.): n/a				
Is coal being mined in area (N/Y)? n				
Coal Depths (ft.): n/a				

OPEN FLOW DATA

Producing formation Marcellus Pay zone depth (ft) See Well Record 10 2008
Gas: Initial open flow 0 MCF/d Oil: Initial open flow 0 Bbl/d
Final open flow 20 MCF/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure N/A psig (surface pressure) after 96 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 CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: [Signature]
By: Randy Broda
Date: 3/1/08

Ellenboro 9

WELL RECORD

Shanley 6a
PERMIT # 47-085-09669
elevation 1037

DETAILS OF PERFORATED INTERVALS:

6240 6171 15000 WATER 1800 SKS

FORMATION	COLOR	HARD/SOFT	TOP	BOTTOM	OIL	GAS	WATER	DEPTH	REMARKS
MISC. RED ROCK & SHALES			0	1894				130	9 5/8
LIME			1894	1958				1842	7
INJUN			1958	2074					
SHALE			2074	2397					
BEREA			2397	2400					
SHALE			2400	2857					
GORDON			2857	2870					
SHALE			2870	3448					
WARREN			3448	3497					
SHALE			3497	3584					
LOWER WARREN			3584	3608					
SHALE			3608	3671					
BALLTOWN			3671	4069					
SHALE			4069	4521					
RILEY			4521	4554					
SHALE			4554	4718					
2nd RILEY			4718	4770					
SHALE			4770	4856					
BENSON			4856	4858					
SHALE			4858	5360					
HAMILTON			5360	5912					
SHALE			5912	6164					
MARCELLUS			6164	6250					
LIME			6250	6269 TD				4 1/2	6263

SIGNED: _____
JAY-BEE PRODUCTION CO.
BY IT'S: PRESIDENT
DATE: 3/1/2008

85 (5)
✓ 9579
✓ 9635
✓ 9629
9173
✓ 9171

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas

Well Operator's Report of Well Work

Farm name: Shanley Operator Well No.: 6a

LOCATION: Elevation: 1037 Quadrangle: Ellenboro

District: Clay County: Ritchie
Latitude: 870 Feet South of 39 Deg. 17 Min. 30 Sec.
Longitude 3800 Feet West of 81 Deg. 00 Min. 00 Sec.

Company: Jay-Bee Oil & Gas Inc.

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: 1720 Rt. 22 East				
Union, N.J. 07083				
Agent: Randy Broda	9 5/8	130	130	Cts
Inspector: Steve Mossor				
Date Permit Issued: 11/26/07	7	1842	1842	CTS
Date Well Work Commenced: 11/27/07				
Date Well Work Completed: 12/1/07				
Verbal Plugging:	4 1/2	6263	6263	65 SKS
Date Permission granted on:				
Rotary x Cable Rig 30				
Total Depth (feet): 6269				
Fresh Water Depth (ft.): 75'				
Salt Water Depth (ft.): n/a				
Is coal being mined in area (N/Y)? n				
Coal Depths (ft.): n/a				

OPEN FLOW DATA

Producing formation Marcellus Pay zone depth (ft) See Well Record
Gas: Initial open flow 0 MCF/d Oil: Initial open flow 0 Bbl/d
Final open flow 20 MCF/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests Hours
Static rock Pressure N/A psig (surface pressure) after 96 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 CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: [Signature]
By: Randy Broda
Date: 3/1/08



WELL RECORD

Shanley 6a

PERMIT # 47-085-09669

elevation

1037

DETAILS OF PERFORATED INTERVALS:

6240

6171 15000 WATER 1800 SKS

<u>FORMATION</u>	<u>COLOR</u>	<u>HARD/SOFT</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>OIL,GAS,WATER</u>	<u>DEPTH</u>	<u>REMARKS</u>
MISC. RED ROCK & SHALES			0	1894		130	9 5/8
LIME			1894	1958		1842	7
INJUN			1958	2074			
SHALE			2074	2397			
BEREA			2397	2400			
SHALE			2400	2857			
GORDON			2857	2870			
SHALE			2870	3448			
WARREN			3448	3497			
SHALE			3497	3584			
LOWER WARREN			3584	3608			
SHALE			3608	3671			
BALLTOWN			3671	4069			
SHALE			4069	4521			
RILEY			4521	4554			
SHALE			4554	4718			
2nd RILEY			4718	4770			
SHALE			4770	4856			
BENSON			4856	4858			
SHALE			4858	5360			
HAMILTON			5360	5912			
SHALE			5912	6164			
MARCELLUS			6164	6250			
LIME			6250	6269 TD		4 1/2	6263

SIGNED:

JAY-BEE PRODUCTION CO.

BY IT'S: PRESIDENT

DATE: 3/1/2008

Production Report

API	Operator	County	Well Status Well Type	Production Year	Total Gas	Total Oil
8509669	JAY-BEE OIL & GAS	Ritchie	Active Well Commercial Brine	2008	588	0
8509669	JAY-BEE OIL & GAS	Ritchie	Active Well Commercial Brine	2009	453	0

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas
Discharge Monitoring Report
Oil and Gas General Permit

Company Name: Jay-Bee Oil & Gas Inc
API: 47-085-09669 County: Ritchie
District: Clay
Farm Name: Shanley Well No: 6A
Discharge Dates/s From: (MMDDYY) TO: (MMDDYY)
Discharge Times : From TO
Disposal Option Utilized: UIC (2): Permit No.
Centralized Facility (5): Permit No.
Reuse (4): Alternate Permit Number:
Offsite Disposal(3): x Site Location: Shanley 6a 47-085-09669
Land Application(1): (Include a topographical map of the Area.)
Other method(6): (Include an explanation)
Follow Instructions below to determine your treatment category.
Optional Pretreatment test: Cl- mg/l DO Mg/l
1. Do you have permission to use expedited treatment from the Director or his representative? (Y/N) If yes who? , and place a four (4) on line 7. If not go to line 2
2. Was Frac Fluid or flowback put into the pit? (Y/N) If yes go to line 5 if not go to line 3
3. Do you have a chloride value pretreatment (see above)? (Y/N) If yes go to line 4 if not go to line 5
4. Is that chloride level less than 5000 mg/l? (Y/N) If yes then enter a one (1) on line 7
5 Do you have a pretreatment value for DO? (See above) (Y/N) If yes then go to line 6 if not enter a three (3) in line 7.
6 Is that DO greater than 2.5 mg/l? (Y/N) If yes then enter a two (2) on line 7 If not enter a three (3) on line 7.
7. to another well is the category of your pit. Use the Appropriate section.
Name of Principal Exec. Officer Randy Broda
Title of Officer President
Date Completed: 3/15/08

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the 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.
Signature of a Principal Exec. Officer or Authorized agent

Signature

RECEIVED
Office of Oil & Gas

NOV 16 2009

WV Department of
Environmental Protection



July 8, 2009

RECEIVED
Office of Oil & Gas

JUL 13 2009

WV Department of
Environmental Protection

Gene C. Smith
West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304-2345

Dear Gene,

Thank you and Jamie for taking the time to meet with Terry Wycoff and me to discuss Hall Drilling's plans for the reuse and disposal of Marcellus flowback and produced water. As a follow up to our meeting July 1, 2009, the following is a recap of our conversation.

Hall Drilling has purchased 80 acres + / - to set up a site on which we will build storage ponds to hold conditioned or cleaned Marcellus flowback and produced water to be recycled and reused in additional frac jobs. The flow back water which will be held in these ponds will be conditioned / treated to eliminate minerals, metals, bacteria and frac fluids. The water once treated will be clean enough for reuse to frac additional wells. Of note, the water after conditioning will have the same concentration of salt it had prior to it being conditioned. This will be addressed in a secondary process described below.

To accomplish the above, Hall Drilling will purchase equipment that will condition the flowback and produced water to a level satisfactory for reuse on additional frac jobs. The equipment is insensitive to the composite of the flowback and produced water coming from the formation. It will oxidize the majority of hydrocarbons, remove metals and kill bacteria producing very clean brine water that you can then mix with the appropriate amount of clean surface water and friction reducers designed to work in the Marcellus formation. As a note, since the metals have been removed and the bacteria killed, there is little need for additional frac chemicals to reduce scaling and deposits forming down hole.

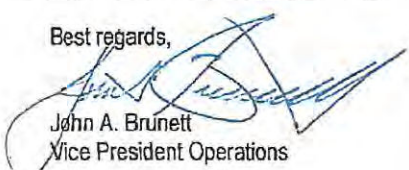
At this time, it is unknown how many times the water can be conditioned and reused. It is Hall Drilling's intent to reuse the conditioned water until such a time as the salt content requires far more lubricant and horsepower than feasible to frac with. It is at this point the water will ultimately be disposed of into an injection well on the same site.

In order to accomplish the proper segregation of water containing different levels of salt, we will have ponds with differing salt levels as well as have a pond with clean surface water. This is so we can mix the appropriate amounts of clean surface water with the water containing salt to get the desired brine level for the next frac. Once we add the appropriate amount of clean surface water, essentially cutting the salt content to the desirable ratio, appropriate amounts of friction reducer will be added prior to the frac.

As we discussed, the bottom line is that by utilizing this type of process, Hall Drilling will recycle conditioned flowback and produced water using less water yearly to frac wells. And, the disposal of this water into an injection well after its final use will be done at the conditioning / recycle site. As a result, this will reduce the number of trucks hauling water to remote disposal sites reducing the potential for accidents and virtually eliminating the potential for this water to make it into State waters as it will be injected into the appropriate and allowable formations.

Once again, thank you for meeting with us to hear our plans. We look forward to working with you and the State in helping make this a reality and a success for all concerned.

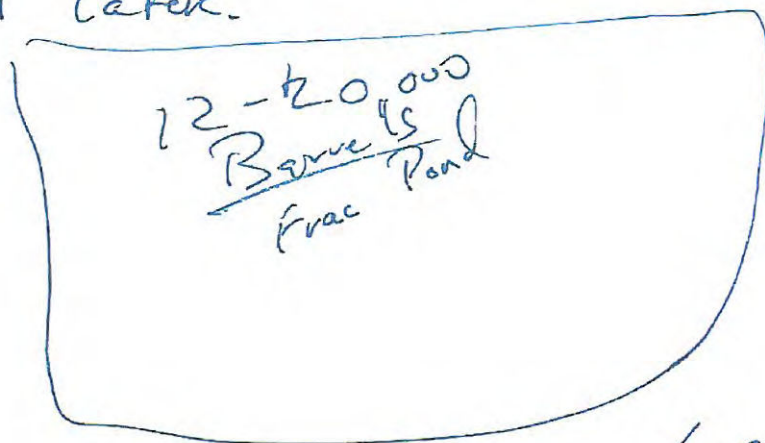
Best regards,


John A. Brunett
Vice President Operations

215 EAST WASHINGTON AVENUE • P.O. BOX 249 • ELLENBORO, WV 26346
PHONE: (304) 869-3404 • FAX: (304) 869-3408

Hall Drilling Frac water only at this time,
Commercial later.

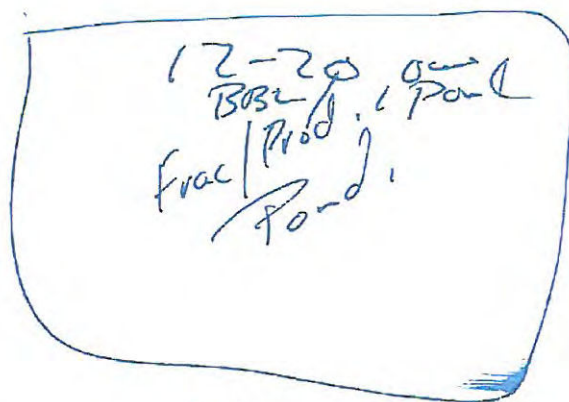
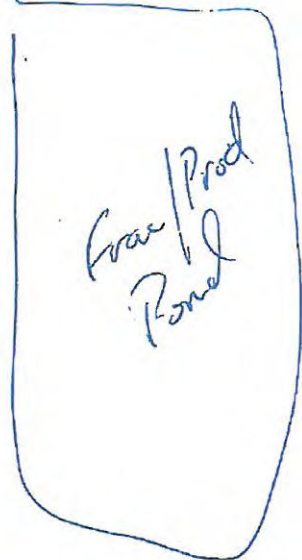
7/16/09



Hall Drilling plans
to use less water & move
sand.

[Centralized Treatment Plan]

UIC
20 well
0



Treatment can take out all heavy metals:
bacteria but cannot take out Chlorides/TDS.
Eco-Sphere treatment system. Advanced
oxidation process.

Yogesh says - Will not need EPA NPDES permit for
centralized treatment if treatment takes place on each
well location before arriving at holding ponds.

Yogesh - Als Long Hall Drilling not taking water other than
their own. They
are not "centralized"
treatment facility
40 CFR 437

OP-77 (03-01-09)
RECEIVED
Office of Oil & Gas
NOV 03 2009
WV Department of
Environmental Protection

State of West Virginia
Department of Environmental Protection
Charleston, WV 25301

Record No. 8

This is to acknowledge that the well: API no.

47-085-09669

District

Clay

Well No.

6A

Farm name

Shanley

Is hereby transferred from:

The transferor

Company: Jay-Bee Oil and Gas, Inc.

Code #

24610

Address

1720 Route 22 East, Union, NJ. 07083

To:

The transferee

Company: Hall Drilling, LLC

Code #

494480467

Address

P.O. Box 249, Ellenboro, WV 26346

Transfer approval and responsibility for any noncompliance matter not resolved in this document will be addressed in the thirty day circular that will be issued after review of your application for transfer, or as otherwise set forth by agreement with the Chief.

If this well has been out of production for the period in excess of 12 months, the transferee agrees to bring the well into compliance by producing or plugging within 120 days of approval of the application. ☒ Yes ☐ No

The transferee has registered and designated an agent on form OP-1, which is on file with the Office of Oil and Gas. The agent is:

Designated agent (name)

Michael T. Hall, President Hall Drilling, LLC

Address:

P.O. Box 249, Ellenboro, WV 26346

The transferee has bonded the said well by (check one):

Securities ☐

Cash ☒

Surety bond ☐

Letter of credit ☐

Identified by:

Amount:

\$ 50,000.00

Effective date:

9-22-06

Issuing authority:

Cornerstone Bank

Id. No:

7776-7776

Transferor: Jay-Bee Oil and Gas

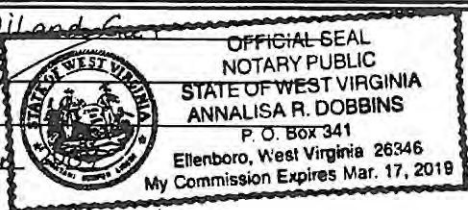
By: [Signature]

Its: [Signature]

Taken, subscribed and sworn before me this 28th day of October

Notary Public Annalisa R. Dobbins

My Commission Expires 3/17/2019



Transferee: Hall Drilling, LLC

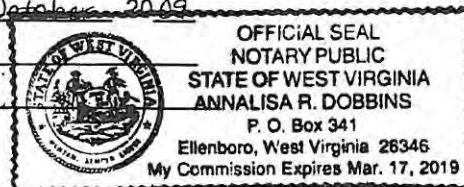
By: [Signature]

Its: President

Taken, subscribed and sworn before me this 28th day of October 2009

Notary Public Annalisa R. Dobbins

My Commission Expires 3/17/2019



WW-3A
10/07



1) Date: October 29, 2009
2) Operator's Well No. Hall Drilling, LLC #2
3) API Well No.: 47 - 085 - 09669
State County Permit
4) UIC Permit No. _____

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OF WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS,

5) Surface Owner(S) To Be Served	7) (a) Coal Operator
(a) Name <u>Tech Service Center</u>	Name <u>N/A</u>
Address <u>P.O Box 249</u>	Address _____
<u>Ellenboro, WV 26349</u>	_____
(b) Name _____	7) (b) Coal Owner(S) With Declaration Of Record
Address _____	Name <u>N/A</u>
_____	Address _____
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>David Cowan</u>	7) (c) Coal Lessee with Declaration Of Record
Address <u>Route 1 Box 202</u>	Name <u>N/A</u>
<u>Harrisville, WV 26362</u>	Address _____
Telephone <u>(304) 628-4016</u>	_____

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

- (1) The Application For A Liquid Injection or Waste Disposal Well Work Permit on Form WW-3(B), which sets out the parties involved in the drilling or other work;
- (2) The plat (surveyor's map) showing the well location on Form WW-6; and
- (3) The Construction and Reclamation Plan on Form WW-9 (unless the well work is only to plug a well), which sets out the plan for erosion and sediment control and for reclamation for the site and access road.

The date proposed for the first injection or waste disposal is December 1st 20 09.

THE REASON YOU HAVE RECEIVED THESE DOCUMENTS IS THAT YOU HAVE RIGHTS REGARDING THE APPLICATION WHICH ARE SUMMARIZED IN THE "INSTRUCTIONS" ON THE REVERSE SIDE OF THE COPY OF THE APPLICATION [(FORM WW-3(B))] DESIGNATED TO YOU. HOWEVER YOU ARE NOT REQUIRED TO TAKE 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 Well Work Permit with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to a well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, the plat, and the Construction and Reclamation Plan 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 the mailing or delivery to the Chief.

The person signing this document shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document 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.

Well Operator Hall Drilling, LLC
Address P.O Box 249
Ellenboro, WV 26346
By: Michael Hall
Its: President
Signature: [Signature]

WW-3B
10/07



1) Date: October 29, 2009
2) Operator's Well No. Hall Drilling, LLC #2
3) API Well No.: 47 085 09669
State County Permit
4) UIC Permit No. _____

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

5) WELL TYPE: Liquid Injection ☒ / Gas Injection (not storage) _____ / Waste Disposal _____ /
6) LOCATION: Elevation: 1,032 Feet Watershed: Hushers Run
District: Clay County Ritchie Quadrangle Ellenboro 7 1/2'
7) WELL OPERATOR: Hall Drilling, LLC 8) DESIGNATED AGENT Mike Hall
Address P.O Box 249 Address P.O Box 249
Ellenboro, WV 26346 Ellenboro, WV 26346
9) OIL & GAS INSPECTOR TO BE NOTIFIED 10) DRILLING CONTRACTOR
Name David Cowan Name Hall Drilling, LLC
Address Route 1 Box 202 Address P.O Box 249
Harrisville, WV 26362 Ellenboro, WV 26346
11) PROPOSED WELL WORK Drill _____ / Drill deeper _____ / Redrill _____ / Stimulate _____
Plug off old formation _____ / Perforate new formation _____ Convert ☒
Other physical change in well (specify) _____
12) GEOLOGIC TARGET FORMATION Marcellus Depth 6164' Feet (top) to 6250' Feet (bottom)
13) Estimated Depth of Completed Well, (or actual depth of existing well): 6269' Feet
14) Approximate water strata depths: Fresh 75' Feet Salt N/A Feet
15) Approximate coal seam depths: N/A
16) Is coal being mined in the area? Yes _____ No ☒
17) Virgin reservoir pressure in target formation _____ psig Source _____
18) Estimated reservoir fracture pressure _____ psig (BHFP)
19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour _____ Bottom hole pressure 4931 ps
20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES Frac and Production
Fluids, See Attached
21) FILTERS (IF ANY) Fluid Systems, Inc.
22) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL Lined 2 7/8" tubing

23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL - UP OR SACKS (CU. FT.)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For Drilling	Left In Well		
Conductor									Kinds
Fresh Water	<u>9 5/8"</u>		<u>22#</u>	<input checked="" type="checkbox"/>		<u>130'</u>	<u>130'</u>	<u>CTS</u>	
Coal									Sizes <u>4 1/2"</u> and <u>2 7/8"</u>
Intermediate	<u>7"</u>		<u>16#</u>	<input checked="" type="checkbox"/>		<u>1842'</u>	<u>1842'</u>	<u>CTS</u>	
Production	<u>4 1/2"</u>		<u>11.60#</u>	<input checked="" type="checkbox"/>		<u>6263'</u>	<u>6263'</u>	<u>65 SKS</u>	Depths set
Tubing	<u>2 7/8"</u>	<u>upset</u>	<u>6.5#</u>	<input checked="" type="checkbox"/>		<u>6164'</u>	<u>6164'</u>	<u>On Packer</u>	
Liners									Perforations
									Top Bottom
									<u>6164'</u> <u>6250'</u>

24) APPLICANT'S OPERATING RIGHTS were acquired from Dorothy M. Daugherty et al
by deed _____ / lease ☒ / other contract _____ / dated Aug. 30, 2004 of record in the
Ritchie County Clerk's office in DEED Book 236 Page(s) 633



1) Date: October 29, 2009

2) Operator's Well No. Hall Drilling, LLC #2

3) API Well No.: 47 - 085 - 09669
State County Permit

4) UIC Permit No. 2D0859669

5) Surface Owner(S) To Be Served

Address

Address

Telephone

Address

Address

Address

Address

The date proposed for the first injection or waste disposal is December 1st 2009.

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 Well Work Permit with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to a well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, the plat, and the Construction and Reclamation Plan 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 the mailing or delivery to the Chief.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document 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.

Signature: _____

President

WW-3B
10/07



1) Date: October 29, 2009
2) Operator's Well No. Hall Drilling, LLC #2
3) API Well No.: 47 085 09669
State County Permit
4) UIC Permit No. 2D0859669

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

- 5) WELL TYPE: Liquid Injection ☒ / Gas Injection (not storage) ☐ / Waste Disposal ☐ /
6) LOCATION: Elevation: 1,032 Feet Watershed: Hushers Run
District: Clay County Ritchie Quadrangle Ellenboro 7 1/2'
7) WELL OPERATOR: Hall Drilling, LLC 8) DESIGNATED AGENT Mike Hall
Address P.O Box 249 Address P.O Box 249
Ellenboro, WV 26346 Ellenboro, WV 26346
9) OIL & GAS INSPECTOR TO BE NOTIFIED 10) DRILLING CONTRACTOR
Name David Cowan Name Hall Drilling, LLC
Address Route 1 Box 202 Address P.O Box 249
Harrisville, WV 26362 Ellenboro, WV 26346
11) PROPOSED WELL WORK Drill ☐ / Drill deeper ☐ / Redrill ☐ / Stimulate ☐
Plug off old formation ☐ / Perforate new formation ☐ / Convert ☒
Other physical change in well (specify) _____
12) GEOLOGIC TARGET FORMATION Marcellus Depth 6164' Feet (top) to 6250' Feet (bottom)
13) Estimated Depth of Completed Well, (or actual depth of existing well): 6269' Feet
14) Approximate water strata depths: Fresh 75' Feet Salt N/A Feet
15) Approximate coal seam depths: N/A
16) Is coal being mined in the area? Yes ☐ No ☒
17) Virgin reservoir pressure in target formation _____ psig Source _____
18) Estimated reservoir fracture pressure _____ psig (BHFP)
19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour _____ Bottom hole pressure 4931 p
20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES Fluids, See Attached Frac and Production
21) FILTERS (IF ANY) Fluid Systems, Inc.
22) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL Lined 2 7/8" tubing

23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL - UP OR SACKS (CU. FT.)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For Drilling	Left In Well		
Conductor									Kinds
Fresh Water	<u>9 5/8"</u>		<u>22#</u>	<input checked="" type="checkbox"/>		<u>130'</u>	<u>130'</u>	<u>CTS</u>	
Coal									Sizes <u>4 1/2"</u> and <u>2 7/8"</u>
Intermediate	<u>7"</u>		<u>16#</u>	<input checked="" type="checkbox"/>		<u>1842'</u>	<u>1842'</u>	<u>CTS</u>	
Production	<u>4 1/2"</u>		<u>11.60#</u>	<input checked="" type="checkbox"/>		<u>6263'</u>	<u>6263'</u>	<u>65 SKS</u>	Depths set
Tubing	<u>2 7/8"</u>	<u>upset</u>	<u>6.5#</u>	<input checked="" type="checkbox"/>		<u>6164'</u>	<u>6164'</u>	<u>On Packer</u>	
Liners									Perforations
									Top Bottom
									<u>6164'</u> <u>6250'</u>

- 24) APPLICANT'S OPERATING RIGHTS were acquired from Dorothy M. Daugherty et al
by deed ☐ / lease ☒ / other contract ☐ / dated Aug. 30, 2004 of record in the
Ritchie County Clerk's office in DEED Book 236 Page(s) 633

INSTRUCTIONS TO APPLICANT

CONCERNING THE LINE ITEMS:

- 1) Date of Notice;
- 2) Your Well Name and Number;
- 3) To be filled out by the Office of Oil & Gas unless this well is covered by an existing permit;
- 4) To be filled out by the Office of Oil & Gas unless this well is covered by an existing permit;
- 5) Use separate sheet, if necessary;
Surface Owner(s) of record to be served with the Notice of Application. However, see also Code 22-6-9(b) if "more than three tenants in common or other co-owners of interest described in subsection (a) of this section hold interests in such lands."
- 6) Inspector;
- 7) Use separate sheet, if necessary;
 - a) "Coal Operator" means a person, firm, partnership, partnership association or corporation that proposes to or does operator a coal operator;
 - b) See Code 22-6-36;
 - c) See Code 22-6-36;

CONCERNING THE REQUIRED COPIES FOR FILING AND SERVICE:

Filing. Code 22-6-6 and Regulation 7.02 provide that the original and two copies of the Notice and Application must be filed with the Chief, accompanied by (1) a plat in the form prescribed by Regulation 11; (2) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by code 22-6-26; and (3) the "Construction and Reclamation Plan" for Form WW-9, applicable to the plan required by Code 22-1-G(d) and the reclamation required by Code 22-6-30 and Regulation 23; unless if applicable, the consent required by code 22-6-21 from the owner of any water well or dwelling within 200 feet of the proposed well.

Service. In addition, service must be made on the surface owner(s) and the person(s) with interest in the coal. See Code 22-6-9, 22-6-13 and 22-6-14.

WW-3B
(Office of Oil & Gas Use Only)
10/07

OFFICE USE ONLY

DRILLING PERMIT

Permit Number _____

Date: _____

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. Notification must be given to the District Oil & Gas Inspector, (Refer to No. 9) prior to the construction of roads, locations, pits for any permitted work. In addition, the Well Operator or his contractor shall notify the proper District Oil & Gas Inspector 24 hours before actual permitted work has commenced.

The permitted work is as described in the Notice of Application, plat and (if required) Construction and Reclamation Plan, subject to any modifications and conditions specified below.

Permit Expires _____ unless well work is commenced prior to that date and prosecuted with due diligence.

Bond	Agent	Plat	Casing	Fee
------	-------	------	--------	-----

CHIEF, OFFICE OF OIL & GAS

Note: Keep One Copy of this permit posted at the drilling location.

PERMIT MODIFICATIONS AND CONDITIONS (IF ANY) TO THE PROPOSED WELL WORK

OFFICE USE ONLY

This part of Form IV-3(b) is to record the dates of certain occurrences and any follow-up inspections.

	Date			Date
Application Received	_____	Follow-up Inspection(s)	_____	_____
Well Work Started	_____	" "	_____	_____
Total Depth Reached	_____	" "	_____	_____
Well Record Received	_____	" "	_____	_____
Reclamation Completed	_____	" "	_____	_____

OTHER INSPECTIONS

Reason: _____
Reason: _____

UNDERGROUND INJECTION CONTROL (UIC) PERMIT GUIDELINES

- 1) The term of a UIC Permit is five (5) years from its effective date. Therefore, the UIC permit must be renewed every five (5) years for injection to continue.
- 2) It is the policy of the Office of Oil & Gas that fluid shall be injected into the same formation from which it is produced or deeper.
- 3) For any well to be permitted as an injection well, the surface casing must be cemented to surface.
- 4) For any well to be permitted as a waste disposal well, a tubing and packer arrangement must be utilized as the injection string of casing. The packer shall be set immediately above the injection formation.
- 5) An Area of Review (AOR) shall be completed for each well permitted as an injection well. All wells within a $\frac{1}{4}$ mile radius or a calculated radius according to 40CFR146.6 of the proposed injection well or field shall be reviewed for construction and/or plugging adequacy to prevent the migration of injected fluids into any underground sources of drinking water.

UNDERGROUND INJECTION CONTROL (UIC) OPERATIONAL GUIDELINES

INJECTION PRESSURE

The Office of Oil and Gas presently follows a policy that limits maximum bottom-hole injection pressure (MBHIP) not to exceed 0.8 psi/ft. gradient. The MBHIP is calculated by multiplying 0.8 psi/ft. by the top injection zone perforation depth. For example, the maximum allowable bottom hole injection pressure for an injection well with the top perforation at 1000 feet would be 800 psi. The maximum wellhead injection pressure is then determined by subtracting the hydrostatic pressure from the maximum allowable bottom-hole pressure. Hydrostatic pressure equals 0.433 psi/ft. X Injection Fluid Specific Gravity X top injection zone perforation depth.

MECHANICAL INTEGRITY TESTING

All wells drilled or converted for injection must demonstrate mechanical integrity through a pressure test prior to initiating any injection operations. The mechanical integrity test (MIT) is performed to ensure there is no significant leak in the casing, tubing or packer.

The Office and/or regional oil and gas inspector shall be notified at least twenty four (24) hours prior to conducting a mechanical integrity test so that it may be witnessed.

A "Pre-Operation Certificate" (Form WR-37) must be completed with the results of each Mechanical Integrity Test (MIT) conducted and submitted to the Office for approval. The test shall be conducted and the Form submitted within thirty (30) days of the effective date of the UIC Permit.

The Office requires that a chart be used to record the results of any pressure test. This chart shall be submitted with Form WR-37.

When conducting a pressure test the tubing and production casing annulus shall be pressured up on to one and one half (1 ½) to two (2) times the maximum allowable injection pressure and shut in for twenty (20) minutes.

The Office will approve no more than a five percent (5%) bleed off on any pressure test conducted.

STEP RATE TEST

Should the 0.8 psi/ft. gradient not allow for sufficient injection pressure for injection operations, a higher pressure may be approved based upon a step-rate test. The Office would then approve up to 90% of the determined formation parting pressure or the maximum pressure reached during the step-rate test in which formation parting does not occur.

In order that step-rate test data is valid and supplies the required information needed for the Office to approve a higher injection pressure, the following procedures and equipment should be utilized for testing.

1. The test should be shut-in at least seventy-two (72) hours prior to testing to allow bottom-hole pressure to approach the formation pressure.
2. Test consists of a series of constant-rate injections which increase in a stepwise fashion. Rates should center around the proposed injection rate.
3. Injection periods should last sixty minutes for formations having a permeability of less than ten millidarcies and thirty minutes for formations having a permeability of greater than ten millidarcies.
4. Test should consist of at least six injection periods.
5. Injection rates should be controlled with a constant flow-rate regulator.
6. Flow rates should be measured with a turbine flowmeter and rate meter. A stopwatch should be used to check flow rates.
7. Calibrated pressure gages should be used for observing pressure at each rate at the surface on the flowing string and all annulus. Measurement of bottom-hole pressures is preferable but not necessary.
8. Test procedures along with injection rates and pressures are to be recorded and submitted to the Office along with a plot of the data.

Should there be a need to vary from this test procedure substantially; the Office should be contacted first for agreement of the test procedure.

Please notify the Office forty-eight (48) hours prior to testing to allow the Office the opportunity to witness the test.

ADDITIONAL ITEMS REQUIRED AS PART OF ALL CLASS II AND III UIC PERMIT APPLICATIONS

It is essential that all information requested on Forms WW-3A and WW-3B be completely and accurately addressed. Estimates and proposals must be based upon valid sources of information. In addition to WW-3A and WW-3B the following thirteen (13) items must be addressed individually through a narrative and any supporting data be referenced as an exhibit.

1. A 7.5 minute topographic map or section showing one mile around the well or facility. Within this one mile area the map must show the location of the well or facility, all known drinking wells, springs and surface water bodies.
2. Submit analyses from all water wells within a $\frac{1}{4}$ mile radius of the proposed well or facility. The parameters for analysis shall include but are not limited to: pH, TDS, Iron, Manganese, Chlorides, Sodium and Barium. Indicate on the map or section in Item No. 1 the locations and label all water wells for which an analysis was submitted. If there are no water wells within the $\frac{1}{4}$ mile radius then strategically select and sample enough water wells to accurately describe the groundwater quality in the vicinity of the proposed well or facility.
3. A detailed analysis of the fluids to be injected including specific gravity.
4. A detailed description of all additives to be injected including concentrations.
5. If available, any lithologic logs and coring program information derived from the immediate area.
6. If available, any geophysical logs derived from the immediate area. Identify the injection zone and confining zone on any logs submitted.
7. A detailed description of the proposed injection zone including thickness, permeability and porosity.
8. Describe the confining layer which would prevent the upward migration of injected fluid out of the proposed injection zone.
9. Structural contour map of the top or bottom of the proposed injection formation. Indicate the location of the proposed well or facility.
10. Isopach map of the injection formation. Indicate the location of the proposed well or facility.
11. To fulfill the requirements of an Area of Review (AOR) submit well records and/or plugging affidavits for all wells within a $\frac{1}{4}$ mile radius of the proposed well or facility. Locate and label these wells on a topo map or section (preferably with Item No. 1).

12. A list of the API well numbers for all wells to be serviced by a brine disposal well or wells enhanced for pressure maintenance or secondary recovery purposes as applicable. This list shall include the producing formation.
13. Well schematic including cement tops for each well being proposed for waste disposal. If an area UIC permit is being proposed then submit a representative schematic for each different type of well construction within the waterflood.

UIC PERMIT NO. UIC2D0859669
WELL NO. Hall Drilling, LLC #2

UNDERGROUND INJECTION CONTROL PERMIT
FOR
DEPARTMENT OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS AND DIVISION OF WATER AND WASTE MANAGEMENT
FOR
CLASS II COMMERCIAL DISPOSAL WELL

This document consists of the Underground Injection Control (UIC) Permit required by the Department of Environmental Protection, Office of Oil and Gas, and Division of Water and Waste Management. The permittee is allowed to engage in underground injection in accordance with the terms and conditions of this permit based upon an approved UIC Permit.

The Underground Injection Control Permit No. **UIC2D0859669** consists of Forms WW-3A and WW-3B and the terms and conditions below:

1. The underground injection activity authorized by this permit shall not allow the movement of fluid, as per (47CSR13-2.26), containing any contaminant into any subsurface area other than that which is specified and may not cause a violation of any primary drinking water regulation promulgated under 40 CFR Chapter 1, Part 141 or any water quality standard promulgated by the Department of Environmental Protection.
2. This permit is issued in accordance with the provisions of Article 11 and 12, Chapter 22 of the Code of West Virginia and the Legislative Rule 47CSR13.
3. All reports required by this permit shall be submitted to the Office of Oil and Gas with the exception to paragraph 4 below.
4. The following activities require the immediate cessation of facility operations and prompt notification of the Director of Water and Waste Management (47CSR13-13.6.d and 47CSR13-13.12.1.6).
 - a) Any monitoring or other information which indicates that any contaminant has caused or may cause an endangerment to an underground source of drinking water;
 - b) Any non-compliance with a permit condition or any malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water; and
 - c) Any non-compliance which may endanger health and environment.

UIC PERMIT NO. UIC2D0859669
WELL NO. Hall Drilling, LLC #2

**UNDERGROUND INJECTION CONTROL PERMIT
FOR
DEPARTMENT OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS AND DIVISION OF WATER AND WASTE MANAGEMENT
FOR
CLASS II COMMERCIAL DISPOSAL WELL**

This document consists of the Underground Injection Control (UIC) Permit required by the Department of Environmental Protection, Office of Oil and Gas, and Division of Water and Waste Management. The permittee is allowed to engage in underground injection in accordance with the terms and conditions of this permit based upon an approved UIC Permit.

The Underground Injection Control Permit No. UIC2D0859669 consists of Forms WW-3A and WW-3B and the terms and conditions below:

1. The underground injection activity authorized by this permit shall not allow the movement of fluid, as per (47CSR13-2.26), containing any contaminant into any subsurface area other than that which is specified and may not cause a violation of any primary drinking water regulation promulgated under 40 CFR Chapter 1, Part 141 or any water quality standard promulgated by the Department of Environmental Protection.
2. This permit is issued in accordance with the provisions of Article 11 and 12, Chapter 22 of the Code of West Virginia and the Legislative Rule 47CSR13.
3. All reports required by this permit shall be submitted to the Office of Oil and Gas with the exception to paragraph 4 below.
4. The following activities require the immediate cessation of facility operations and prompt notification of the Director of Water and Waste Management (47CSR13-13.6.d and 47CSR13-13.12.1.6).
 - a) Any monitoring or other information which indicates that any contaminant has caused or may cause an endangerment to an underground source of drinking water;
 - b) Any non-compliance with a permit condition or any malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water; and
 - c) Any non-compliance which may endanger health and environment.

5. This permit is for authorization of injection of only fluids as defined for Class II wells in 47CSR13-4.2. The fluids to be injected shall only be from those sources listed in the permit application. Additional sources of fluids may be approved upon written request by the permittee.
6. The permit must satisfy the requirements of the Office of Oil and Gas regarding any corrective action needed on all known wells penetrating the injection zone within the area of review.
7. Any production well within a ¼ mile radius of disposal well# 47-85-09669 which does not have cemented production casing shall be plugged immediately upon becoming inactive. Any temporarily inactive well shall be monitored at a frequency and by a method prescribed by the Office of Oil and Gas upon notice by the permittee of such activity. Any well shut-in more than one (1) week shall be considered inactive.
8. The area of review is designated as a 1 / 4 mile radius around the injection project.
9. This permit approves the Marcellus formation for injection from 6,164' to 6,250'.
10. The maximum wellhead injection pressure shall be established at 1995 PSI.
11. The permittee shall provide for security at the injection facility to guard against illegal or unauthorized dumping and injection at the injection facility.
12. The permittee shall monitor the 2 7/8" X 4 1/2" and 4 1/2" X 7" casing annuli with pressure sensitive devices or with such a method as approved or required by the Office of Oil and Gas to allow early detection on any leaks from the injection zone or casing. The results of such monitoring shall be reported on Form WR-40.
13. Authorization to inject is contingent upon submission and approval of the Office of Oil and Gas Form WR-37 for each well. Construction modifications from the proposed work plan (O&G Form WW-3) and mechanical integrity will be evaluated at this time. Operational conditions will be finalized at this time. Upon approval of Form WR-37, conditions established on this form are incorporated by reference as conditions of this permit. FORM WR-37 SHALL BE SUBMITTED WITHIN 30 DAYS OF THE EFFECTIVE DATE OF THE UIC PERMIT. A mechanical integrity test must be performed at least once every five years per 35CSR4-7.7.b.
14. If a mechanical integrity test should fail, the permittee shall cease operation/injection and shut-in the well immediately until repaired or permanently plugged and abandoned per regulation. The well must be repaired or permanently plugged within 90 days of the failure date. If repaired, the well must be re-tested making sure to submit a WR-37 Form to the Office of Oil and Gas. The Office of Oil and Gas should be notified 24 hours in advance of the re-test date to witness said test.
15. A well head pressure gauge shall be installed and maintained on the injection tubing / casing to facilitate inspection and ensure compliance of maximum injection pressures as approved on Oil and Gas Form WR-37. A daily reading of the injection pressure shall be taken and reported monthly on Form WR-40 to the Office of Oil and Gas.

5. This permit is for authorization of injection of only fluids as defined for Class II wells in 47CSR13-4.2. The fluids to be injected shall only be from those sources listed in the permit application. Additional sources of fluids may be approved upon written request by the permittee.
6. The permit must satisfy the requirements of the Office of Oil and Gas regarding any corrective action needed on all known wells penetrating the injection zone within the area of review.
7. Any production well within a ¼ mile radius of disposal well# 47-85-09669 which does not have cemented production casing shall be plugged immediately upon becoming inactive. Any temporarily inactive well shall be monitored at a frequency and by a method prescribed by the Office of Oil and Gas upon notice by the permittee of such activity. Any well shut-in more than one (1) week shall be considered inactive.
8. The area of review is designated as a 1 / 4 mile radius around the injection project.
9. This permit approves the Marcellus formation for injection from 6,164' to 6,250'.
10. The maximum wellhead injection pressure shall be established at 1995 PSI.
11. The permittee shall provide for security at the injection facility to guard against illegal or unauthorized dumping and injection at the injection facility.
12. The permittee shall monitor the 2 7/8" X 4 1/2" and 4 1/2" X 7" casing annuli with pressure sensitive devices or with such a method as approved or required by the Office of Oil and Gas to allow early detection on any leaks from the injection zone or casing. The results of such monitoring shall be reported on Form WR-40.
13. Authorization to inject is contingent upon submission and approval of the Office of Oil and Gas Form WR-37 for each well. Construction modifications from the proposed work plan (O&G Form WW-3) and mechanical integrity will be evaluated at this time. Operational conditions will be finalized at this time. Upon approval of Form WR-37, conditions established on this form are incorporated by reference as conditions of this permit. FORM WR-37 SHALL BE SUBMITTED WITHIN 30 DAYS OF THE EFFECTIVE DATE OF THE UIC PERMIT.
14. If a mechanical integrity test should fail, the permittee shall cease operation/injection and shut-in the well immediately until repaired or permanently plugged and abandoned per regulation. The well must be repaired or permanently plugged within 90 days of the failure date. If repaired, the well must be re-tested making sure to submit a WR-37 Form to the Office of Oil and Gas. The Office of Oil and Gas should be notified 24 hours in advance of the re-test date to witness said test.
15. A well head pressure gauge shall be installed and maintained on the injection tubing / casing to facilitate inspection and ensure compliance of maximum injection pressures as approved on Oil and Gas Form WR-37. A daily reading of the injection pressure shall be taken and reported monthly on Form WR-40 to the Office of Oil and Gas.

16. The permittee shall sample and analyze injection fluids upon request by the Office of Oil and Gas at a frequency not to exceed twice a year. Analyses shall cover all parameters listed on Attachment A of this permit. Results of all analyses shall be submitted to the Office of Oil and Gas. Permittee shall submit a letter of explanation for any parameter which exceeds the ranges on Attachment A.
17. All injection lines shall be inspected, maintained, operated and monitored to allow early detection of any leakage and so that the occurrence of leaks will be minimized.
18. The permittee shall fulfill the requirements of the Office of Oil and Gas regarding maintaining financial responsibility and resources to close, plug, and abandon permitted wells. An additional five-thousand dollar performance bond shall be maintained on permitted UIC well #85-09669.
19. The herein-described activity is to be extended, modified, added to, made, enlarged, acquired, constructed or installed, and operated, used and maintained strictly in accordance with the terms and conditions of this permit; with the information submitted with the Permit Application No. UIC2D0859669 with the plan of maintenance and method of operation thereof submitted with such application(s); and with any applicable rules and regulations promulgated by the Department of Environmental Protection.
20. This permit is issued in accordance with the provisions of Article 11 and 12, Chapter 22, of the Code of West Virginia and Legislative Rule 47CSR13.
21. Failure to comply with the terms and conditions of this permit, with the plans and specifications submitted with the Permit Application No. UIC2D0859669 and with the plan of maintenance and method of operation thereof submitted with such application(s) shall constitute grounds for the revocation or suspension of this permit and for the invocation of all the enforcement procedures set forth in Article 11 and 12, Chapter 22, of the Code of West Virginia and Legislative Rule 47CSR13.
22. The operation of this injection well facility in general, including maintenance of all unrelated surface equipment, shall be conducted so as to preclude any unlawful discharge of waste materials into the surface or ground waters of this State.
23. The permittee must satisfy the requirement of the Office of Oil and Gas for plugging and abandonment of permitted injection wells in such a manner as to ensure that no fluid movement occurs either from the injection zone into an underground source of drinking water or from one underground source of drinking water to another.
24. Permittee shall implement a manifesting system to record all loads hauled to the facility making sure to document the source of the waste fluid and hauler identification. The Office of Oil and Gas shall approve the instrument, prior to the transportation of any fluids.

16. The permittee shall sample and analyze injection fluids upon request by the Office of Oil and Gas at a frequency not to exceed twice a year. Analyses shall cover all parameters listed on Attachment A of this permit. Results of all analyses shall be submitted to the Office of Oil and Gas. Permittee shall submit a letter of explanation for any parameter which exceeds the ranges on Attachment A.
17. All injection lines shall be inspected, maintained, operated and monitored to allow early detection of any leakage and so that the occurrence of leaks will be minimized.
18. The permittee shall fulfill the requirements of the Office of Oil and Gas regarding maintaining financial responsibility and resources to close, plug, and abandon permitted wells. An additional five-thousand dollar performance bond shall be maintained on permitted UIC well #85-09669.
19. The herein-described activity is to be extended, modified, added to, made, enlarged, acquired, constructed or installed, and operated, used and maintained strictly in accordance with the terms and conditions of this permit; with the information submitted with the Permit Application No. **UIC2D0859669** with the plan of maintenance and method of operation thereof submitted with such application(s); and with any applicable rules and regulations promulgated by the Department of Environmental Protection.
20. This permit is issued in accordance with the provisions of Article 11 and 12, Chapter 22, of the Code of West Virginia and Legislative Rule 47CSR13.
21. Failure to comply with the terms and conditions of this permit, with the plans and specifications submitted with the Permit Application No. **UIC2D0859669** and with the plan of maintenance and method of operation thereof submitted with such application(s) shall constitute grounds for the revocation or suspension of this permit and for the invocation of all the enforcement procedures set forth in Article 11 and 12, Chapter 22, of the Code of West Virginia and Legislative Rule 47CSR13.
22. The operation of this injection well facility in general, including maintenance of all unrelated surface equipment, shall be conducted so as to preclude any unlawful discharge of waste materials into the surface or ground waters of this State.
23. The permittee must satisfy the requirement of the Office of Oil and Gas for plugging and abandonment of permitted injection wells in such a manner as to ensure that no fluid movement occurs either from the injection zone into an underground source of drinking water or from one underground source of drinking water to another.
24. Permittee shall implement a manifesting system to record all loads hauled to the facility making sure to document the source of the waste fluid and hauler identification. The Office of Oil and Gas shall approve the instrument, prior to the transportation of any fluids.

16. The permittee shall sample and analyze injection fluids upon request by the Office of Oil and Gas at a frequency not to exceed twice a year. Analyses shall cover all parameters listed on Attachment A of this permit. Results of all analyses shall be submitted to the Office of Oil and Gas. Permittee shall submit a letter of explanation for any parameter which exceeds the ranges on Attachment A.
17. All injection lines shall be inspected, maintained, operated and monitored to allow early detection of any leakage and so that the occurrence of leaks will be minimized.
18. The permittee shall fulfill the requirements of the Office of Oil and Gas regarding maintaining financial responsibility and resources to close, plug, and abandon permitted wells. An additional five-thousand dollar performance bond shall be maintained on permitted UIC well #85-09669.
19. The herein-described activity is to be extended, modified, added to, made, enlarged, acquired, constructed or installed, and operated, used and maintained strictly in accordance with the terms and conditions of this permit; with the information submitted with the Permit Application No. UIC2D0859669 with the plan of maintenance and method of operation thereof submitted with such application(s); and with any applicable rules and regulations promulgated by the Department of Environmental Protection.
20. This permit is issued in accordance with the provisions of Article 11 and 12, Chapter 22, of the Code of West Virginia and Legislative Rule 47CSR13.
21. Failure to comply with the terms and conditions of this permit, with the plans and specifications submitted with the Permit Application No. UIC2D0859669 and with the plan of maintenance and method of operation thereof submitted with such application(s) shall constitute grounds for the revocation or suspension of this permit and for the invocation of all the enforcement procedures set forth in Article 11 and 12, Chapter 22, of the Code of West Virginia and Legislative Rule 47CSR13.
22. The operation of this injection well facility in general, including maintenance of all unrelated surface equipment, shall be conducted so as to preclude any unlawful discharge of waste materials into the surface or ground waters of this State.
23. The permittee must satisfy the requirement of the Office of Oil and Gas for plugging and abandonment of permitted injection wells in such a manner as to ensure that no fluid movement occurs either from the injection zone into an underground source of drinking water or from one underground source of drinking water to another.
24. Permittee shall implement a manifesting system to record all loads hauled to the facility making sure to document the source of the waste fluid and hauler identification. The Office of Oil and Gas shall approve the instrument, prior to the transportation of any fluids.

25. Permittee shall haul all fluids from the source to the facility for disposal or designate by letters to the Office of Oil and Gas, a single hauler to transport all fluids. No third party haulers will be permitted to transport fluid to the facility.
26. Permitte shall, at a minimum, check and record the pH of every load hauled to ensure that the fluid is compatible with the "fluids" which can be injected under this permit.

25. Permittee shall haul all fluids from the source to the facility for disposal or designate by letters to the Office of Oil and Gas, a single hauler to transport all fluids. No third party haulers will be permitted to transport fluid to the facility.
26. Permitte shall, at a minimum, check and record the pH of every load hauled to ensure that the fluid is compatible with the "fluids" which can be injected under this permit.

ATTACHMENT A

Injection Fluid Analyses Parameters

<u>Parameter</u>	<u>Ranges</u>
PH	>2 – 10
TDS	0 - 265,000 mg/l
TSS	0 - 1000 mg/l
Aluminum	0 - 10 mg/l
Arsenic	0 – 10 mg
Barium	0 – 1500 mg/l
Cadmium	0 – 2 mg/l
Chromium	0 – 1 mg/l
Iron	0 – 1000 mg/l
Lead	0 – 7.5 mg/l
Magnesium	0 – 5000 mg/l
Manganese	0 – 15 mg/l
Potassium	0 – 5000 mg/l
Sodium	0 – 110,000 mg/l
Zinc	0 – 15 mg/l
Surfactants	0 – 10 mg/l
TKN	0 – 25 mg/l
Oil and Grease	0 – 100 mg/l
TOC	0 – 10,000 mg/l
COD	0 – 30,000 mg/l
Acidity	0 – 500 mg/l
Chloride	0 – 250,000 mg/l
Sulfate	0 – 500 mg/l
Cyanide	0 – 1 mg/l
Phenols	0 – 10 mg/l
Calcium	0 – 60,000 mg/l
BNA – Extractables	Trace
Purgeable Aromatics	Trace
Purgeable Halocarbons	Trace
PCBs	<MDL or 50 ppm

ATTACHMENT A

Injection Fluid Analyses Parameters

<u>Parameter</u>	<u>Ranges</u>
PH	>2 – 10
TDS	0 - 265,000 mg/l
TSS	0 - 1000 mg/l
Aluminum	0 - 10 mg/l
Arsenic	0 – 10 mg
Barium	0 – 1500 mg/l
Cadmium	0 – 2 mg/l
Chromium	0 – 1 mg/l
Iron	0 – 1000 mg/l
Lead	0 – 7.5 mg/l
Magnesium	0 – 5000 mg/l
Manganese	0 – 15 mg/l
Potassium	0 – 5000 mg/l
Sodium	0 – 110,000 mg/l
Zinc	0 – 15 mg/l
Surfactants	0 – 10 mg/l
TKN	0 – 25 mg/l
Oil and Grease	0 – 100 mg/l
TOC	0 – 10,000 mg/l
COD	0 – 30,000 mg/l
Acidity	0 – 500 mg/l
Chloride	0 – 250,000 mg/l
Sulfate	0 – 500 mg/l
Cyanide	0 – 1 mg/l
Phenols	0 – 10 mg/l
Calcium	0 – 60,000 mg/l
BNA – Extractables	Trace
Purgeable Aromatics	Trace
Purgeable Halocarbons	Trace
PCBs	<MDL or 50 ppm



JAY-BEE PRODUCTION CO.

November 17, 2009

West Virginia Oil and Gas Conservation Commission
601 57th Street
Charleston, W.V. 25304
Phone: 304-926-0499
Fax: 304-926-0452



Attn: Helen Hardman

I'm returning the OP-77(05-01) for the Shanley 6A for your review and further handling. In talking with State Inspector Dave Cowan and Kay Holtsclaw of the State, I understand the Shanley 6A has recently been released. I have attached my correspondence with the State regarding this matter.

If you would have any questions concerning the same or need additional information, as always please feel free to contact our office at 304-628-3111 my extension is #3.

Thank you for your help in this matter.

Sincerely,

Jay-Bee Production Co.

Debbie Martin
Land Administration

Attachments

Debra Martin

From: Holtsclaw, Kay K [Kay.K.Holtsclaw@ww.gov]
Sent: Thursday, November 19, 2009 10:51 AM
To: Debra Martin
Subject: RE: Shanley 6A 47-085-09669
Attachments: _AVG certification_.txt

No, you don't need to wait. It's a computer check thing and as long as it is in our system it's good to go.

Kay

From: Debra Martin [mailto:officeww@jaybeeil.com]
Sent: Thursday, November 19, 2009 10:24 AM
To: Holtsclaw, Kay K
Subject: RE: Shanley 6A 47-085-09669

Kay

Thank you for the reply, I will send the OP-77 back today to the attention of Helen Hardman will that be ok or do I need to wait for the release.
Debbie.

From: Holtsclaw, Kay K [mailto:Kay.K.Holtsclaw@ww.gov]
Sent: Thursday, November 19, 2009 10:08 AM
To: Debra Martin
Subject: RE: Shanley 6A 47-085-09669

Good morning,

I checked the file for 85-09669 and all the paperwork is in. I just got the reclamation release from Dave on 11-10. I will do a permit release today and put the release letter in the mail to you.

The OP-77 will need to be sent in again to this office and Helen can complete the transfer at that time.
If you have any questions, please let me know.

Thanks for your help!

Will Hardman





RELIANCE LABORATORIES, INC.

ENVIRONMENTAL ANALYSTS AND CONSULTANTS

BRIDGEPORT, WV

www.RelianceLabs.net

MARTINSBURG, WV

Certifications: WV Department of Health #: 00354, 00433 | WV Department of Environmental Protection #: 158, 181 | MD Department of Environment #: 336, 337
VA DGS Division of Consolidated Laboratory Services #: 00434, 00435 | US Environmental Protection Agency #: WV00042, WV00901

MOODY & SUMMERS LAND SURVEY, LLC

Friday, October 09, 2009

P.O. BOX 293

ELLENBORO

WV

26346-

Lab Number: 137667-2009-DW Sample ID: HALLS #2 SLAWSON

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	PQL	MCL
Total Aluminum	0.46	mg/l	EPA 200.7	9/30/2009 13:44	T.Hanshaw	0.04	[0.05]
✓ Total Barium	0.55	mg/l	EPA 200.7	9/30/2009 13:44	T.Hanshaw	0.05	2.0
✓ Total Iron	0.30	mg/l	EPA 200.7	9/30/2009 13:44	T.Hanshaw	0.01	[0.3]
Total Alkalinity	120	mg/l	SM2320B	9/30/2009 14:06	M.Coffman	2.81	
Turbidity	2.1	N.T.U.	EPA 180.1	9/28/2009 14:00	L. Lanham	0.22	
E. coli (Chromogenic)	Absent		SM9223B	9/28/2009 14:42	C. Parker		
Total Coliform (Chromogenic)	Present		SM9223B	9/28/2009 14:42	C. Parker		
✓ Total Chloride	1.87	mg/l	EPA 300.0	10/7/2009 13:59	M.Coffman	0.15	[250]
✓ Total Manganese	0.10	mg/l	EPA 200.7	9/30/2009 13:44	T.Hanshaw	0.01	[0.05]
Total Organic Carbon	0.39	mg/l	SM5310C	10/2/2009 9:30	A.Seitz	0.1	
✓ pH	8.04	S.U.	SM4500H+B	9/30/2009 14:06	M.Coffman		
✓ Total Dissolved Solids	160	mg/l	SM 2540C	9/30/2009 9:40	T. Miller	10	[500]
Total Surfactant	ND	mg/l	SM5540C	9/28/2009 14:10	L. Lanham	0.2	[0.5]

Remarks:

Date Sample Collected 9/28/2009 10:30

Sample Submitted By T SUMMERS

Date Sample Received: 9/28/2009 13:21

MDL - Minimum Detectable Limit

PQL - Practical Quantifiable Limit

MCL - Maximum Contaminant Level, USEPA Regulated [MCL] = Maximum Contaminant Level, Non-Regulated

Drinking Water Reports are maintained by the Laboratory for a period of five years from the date of analysis.

* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: This sample does not meet standards set for Total Coliform and E Coli by the State of West Virginia, 64-3-10, Code of State Regulations, adopted July 1, 2002 by the Bureau For Public Health. Sample Analyzed by Certified Laboratory #00354CM and #00443

NOTE: ND or Not Detected indicates that the analytical value obtained is below the practical quantifiable limit (PQL) which is equivalent to the lowest standard utilized in preparation of the method calibration curve

REPORT REVIEWED BY: 

RJ.1.012



RELIANCE LABORATORIES, INC.

ENVIRONMENTAL ANALYSTS AND CONSULTANTS

BRIDGEPORT, WV

www.RellianceLabs.net

MARTINSBURG, WV

Certifications: WV Department of Health #: 00354, 00433 | WV Department of Environmental Protection #: 158, 181 | MD Department of Environment #: 336, 337
VA DGS Division of Consolidated Laboratory Services #: 00434, 00435 | US Environmental Protection Agency #: WV00042, WV00901

MOODY & SUMMERS LAND SURVEY, LLC

Friday, October 09, 2009

P.O. BOX 293

ELLENBORO

WV

26346-

Lab Number: 137668-2009-DW Sample ID: HALLS #2 BLOVIR

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	PQL	MCL
Total Aluminum	0.07	mg/l	EPA 200.7	9/30/2009 13:46	T.Hanshaw	0.04	[0.05]
Total Barium	0.10	mg/l	EPA 200.7	9/30/2009 13:46	T.Hanshaw	0.05	2.0
Total Iron	0.04	mg/l	EPA 200.7	9/30/2009 13:46	T.Hanshaw	0.01	[0.3]
Total Alkalinity	289	mg/l	SM2320B	9/30/2009 14:06	M.Coffman	2.81	
Turbidity	0.5	N.T.U.	EPA 180.1	9/28/2009 14:00	L. Lanham	0.22	
E. coli (Chromogenic)	Absent		SM9223B	9/28/2009 14:42	C. Parker		
Total Coliform (Chromogenic)	Absent		SM9223B	9/28/2009 14:42	C. Parker		
Total Chloride	53.6	mg/l	EPA 300.0	10/7/2009 14:31	M.Coffman	0.15	[250]
Total Manganese	0.01	mg/l	EPA 200.7	9/30/2009 13:46	T.Hanshaw	0.01	[0.05]
Total Organic Carbon	1.25	mg/l	SM5310C	10/2/2009 9:30	A.Seitz	0.1	
pH	8.81	S.U.	SM4500H+B	9/30/2009 14:06	M.Coffman		
Total Dissolved Solids	420	mg/l	SM 2540C	9/30/2009 9:40	T. Miller	10	[500]
Total Surfactant	ND	mg/l	SM5540C	9/28/2009 14:10	L. Lanham	0.2	[0.5]

Remarks:

Date Sample Collected 9/28/2009 10:50

Sample Submitted By T SUMMERS

Date Sample Received: 9/28/2009 13:22

MDL - Minimum Detectable Limit PQL - Practical Quantifiable Limit

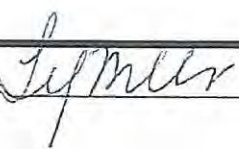
MCL - Maximum Contaminant Level, USEPA Regulated [MCL] = Maximum Contaminant Level, Non-Regulated

Drinking Water Reports are maintained by the Laboratory for a period of five years from the date of analysis.

* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: This sample meets standards set for Total Coliform and E. Coli by the State of West Virginia, 64-3-10, Code of State Regulations, adopted July 1, 2002 by the Bureau For Public Health. Sample analyzed by Certified Laboratory #00354CM and #00443M.

NOTE: ND or Not Detected indicates that the analytical value obtained is below the practical quantifiable limit (PQL) which is equivalent to the lowest standard utilized in preparation of the method calibration curve.

REPORT REVIEWED BY: 

RL1012



RELIANCE LABORATORIES, INC.

ENVIRONMENTAL ANALYSTS AND CONSULTANTS

BRIDGEPORT, WV

www.RelianceLabs.net

MARTINSBURG, WV

Certifications: WV Department of Health #: 00354, 00433 | WV Department of Environmental Protection #: 158, 181 | MD Department of Environment #: 336, 337
VA DGS Division of Consolidated Laboratory Services #: 00434, 00435 | US Environmental Protection Agency #: WV00042, WV00901

MOODY & SUMMERS LAND SURVEY, LLC

Friday, October 09, 2009

P.O. BOX 293

ELLENBORO

WV 26346-

Lab Number: 137669-2009-DW Sample ID: HALLS #2 REED

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	PQL	MCL
Total Aluminum	0.09	mg/l	EPA 200.7	9/30/2009 13:48	T.Hanshaw	0.04	[0.05]
Total Barium	1.55	mg/l	EPA 200.7	9/30/2009 13:48	T.Hanshaw	0.05	2.0
Total Iron	0.16	mg/l	EPA 200.7	9/30/2009 13:48	T.Hanshaw	0.01	[0.3]
Total Alkalinity	193	mg/l	SM2320B	9/30/2009 14:06	M.Coffman	2.81	
Turbidity	0.7	N.T.U.	EPA 180.1	9/28/2009 14:00	L. Lanham	0.22	
E. coli (Chromogenic)	Absent		SM9223B	9/28/2009 14:42	C. Parker		
Total Coliform (Chromogenic)	Absent		SM9223B	9/28/2009 14:42	C. Parker		
Total Chloride	11.3	mg/l	EPA 300.0	10/7/2009 15:02	M.Coffman	0.15	[250]
Total Manganese	0.05	mg/l	EPA 200.7	9/30/2009 13:48	T.Hanshaw	0.01	[0.05]
Total Organic Carbon	1.14	mg/l	SM5310C	10/2/2009 9:30	A.Seitz	0.1	
pH	8.18	S.U.	SM4500H-B	9/30/2009 14:06	M.Coffman		
Total Dissolved Solids	290	mg/l	SM 2540C	9/30/2009 9:40	T. Miller	10	[500]
Total Surfactant	ND	mg/l	SM5540C	9/28/2009 14:10	L. Lanham	0.2	[0.5]

Remarks:

Date Sample Collected 9/28/2009 11:10

Sample Submitted By T SUMMERS

Date Sample Received: 9/28/2009 13:23

MDL - Minimum Detectable Limit PQL - Practical Quantifiable Limit

MCL - Maximum Contaminant Level, USEPA Regulated [MCL] = Maximum Contaminant Level, Non-Regulated

Drinking Water Reports are maintained by the Laboratory for a period of five years from the date of analysis.

* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: This sample meets standards set for Total Coliform and E. Coli by the State of West Virginia, 64-3-10, Code of State Regulations, adopted July 1, 2002 by the Bureau For Public Health. Sample analyzed by Certified Laboratory #00354CM and #00443M

NOTE: ND or Not Detected indicates that the analytical value obtained is below the practical quantifiable limit (PQL) which is equivalent to the lowest standard utilized in preparation of the method calibration curve

REPORT REVIEWED BY: 

RL1.012



RELIANCE LABORATORIES, INC.

ENVIRONMENTAL ANALYSTS AND CONSULTANTS

BRIDGEPORT, WV

www.RelianceLabs.net

MARTINSBURG, WV

Certifications: WV Department of Health #: 00354, 00433 | WV Department of Environmental Protection #: 158, 181 | MD Department of Environment #: 336, 337
VA DGS Division of Consolidated Laboratory Services #: 00434, 00435 | US Environmental Protection Agency #: WV00042, WV00901

MOODY & SUMMERS LAND SURVEY, LLC

Friday, October 09, 2009

P.O. BOX 293

ELLENBORO

WV

26346-

Lab Number: 137670-2009-DW **Sample ID:** HALLS #2 HAYHURST

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	PQL	MCL
Total Aluminum	0.09	mg/l	EPA 200.7	9/30/2009 13:51	T.Hanshaw	0.04	[0.05]
Total Barium	0.86	mg/l	EPA 200.7	9/30/2009 13:51	T.Hanshaw	0.05	2.0
Total Iron	0.29	mg/l	EPA 200.7	9/30/2009 13:51	T.Hanshaw	0.01	[0.3]
Total Alkalinity	212	mg/l	SM2320B	9/30/2009 14:06	M.Coffman	2.81	
Turbidity	3.7	N.T.U.	EPA 180.1	9/28/2009 14:00	L. Lanham	0.22	
E. coli (Chromogenic)	Present		SM9223B	9/28/2009 14:42	C. Parker		
Total Coliform (Chromogenic)	Present		SM9223B	9/28/2009 14:42	C. Parker		
Total Chloride	5.46	mg/l	EPA 300.0	10/7/2009 15:33	M.Coffman	0.15	[250]
Total Manganese	0.03	mg/l	EPA 200.7	9/30/2009 13:51	T.Hanshaw	0.01	[0.05]
Total Organic Carbon	1.116	mg/l	SM5310C	10/2/2009 9:30	A.Seitz	0.1	
pH	8.11	S.U.	SM4500H+B	9/30/2009 14:06	M.Coffman		
Total Dissolved Solids	268	mg/l	SM 2540C	9/30/2009 9:40	T. Miller	10	[500]
Total Surfactant	ND	mg/l	SM5540C	9/28/2009 14:10	L. Lanham	0.2	[0.5]

Remarks:

Date Sample Collected 9/28/2009 9:40

Sample Submitted By T SUMMERS

Date Sample Received: 9/28/2009 13:23

MDL - Minimum Detectable Limit PQL - Practical Quantifiable Limit

MCL - Maximum Contaminant Level, USEPA Regulated [MCL] = Maximum Contaminant Level, Non-Regulated

Drinking Water Reports are maintained by the Laboratory for a period of five years from the date of analysis.

* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: This sample does not meet standards set for Total Coliform and E. Coli by the State of West Virginia, 64-3-10, Code of State Regulations, adopted July 1, 2002 by the Bureau For Public Health. Sample Analyzed by Certified Laboratory #00354CM and #00443

NOTE: ND or Not Detected indicates that the analytical value obtained is below the practical quantifiable limit (PQL) which is equivalent to the lowest standard utilized in preparation of the method calibration curve

REPORT REVIEWED BY: 

RL1012



RELiance LABORATORIES, INC.

BENEDUM INDUSTRIAL PARK
ROAD POST OFFICE BOX 4657
BRIDGEPORT, WV 26330-4657

VOICE: 304-842-5285 FAX: 304-842-5351
E-MAIL <reliancelabs@wvdsi.net>

ENVIRONMENTAL ANALYSTS AND CONSULTANTS

RIDGEFIELD BUSINESS CENTER
25 CRIMSON CIRCLE
MARTINSBURG, WV 25403

VOICE: 304-596-2084
FAX: 304-596-2086

BLUESTONE ENERGY

215 E. WASHINGTON AVE
ELLENBORO

WV 26346

Monday, February 02, 2009

Lab Number 126829-2009-W Sample ID BOOKER #4

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
Ammonia Nitrogen	75.0	mg/l	SM4500NH3C	1/26/2009 9:30	L.Lanham	0.17	
Total Nitrate as N	ND	mg/l	EPA 300.0	1/22/2009 19:05	M.Coffman	0.028	
Total Nitrite as N	ND	mg/l	EPA 300.0	1/22/2009 19:05	M.Coffman	0.017	
pH	6.42	S.U.	SM4500H+B	1/22/2009 15:11	M.Coffman		
Total Phosphorus	0.10	mg/l	SM4500P-E	1/27/2009 8:30	M.Coffman	0.05	
Chemical Oxygen Demand	4863	mg/l	EPA 410.4	1/23/2009 14:00	A.Seitz	2.94	
Total Alkalinity	34.8	mg/l	SM2320B	1/22/2009 15:11	M.Coffman	2.81	
Total Chloride	26992	mg/l	EPA 300.0	1/27/2009 15:30	M.Coffman	0.15	
Total Hardness	11800	mg/l	SM 2340C	1/26/2009 14:30	T. Miller	0.31	
Total Aluminum	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.009	
Total Barium	36.3	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.003	
Total Cadmium	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.002	
Total Calcium	3320	mg/l	EPA 200.7	1/28/2009 16:37	T.Hanshaw	0.078	
Total Chromium	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.006	
Total Copper	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.005	
Total Iron	26.5	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.004	
Total Lead	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.005	
Total Magnesium	344	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.03	
Total Manganese	5.80	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.007	

Remarks:

Date Sample Collected 1/21/2009 13:00
Sample Submitted By T. Wyckoff
Date Sample Received: 1/21/2009 16:49

EMAIL COPY

ND = Not Detected

MDL - Minimum Detectable Limit

PQL - Practical Quantifiable Limit

MCL - Maximum Contaminant Level, USEPA Regulated

[MCL] = Maximum Contaminant Level, Non-Regulated

* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition



RELIANCE LABORATORIES, INC.

BENEDUM INDUSTRIAL PARK
ROAD POST OFFICE BOX 4657
BRIDGEPORT, WV 26330-4657

VOICE: 304-842-5285 FAX: 304-842-5351

E-MAIL: <reliance@wvdsi.net>

ENVIRONMENTAL ANALYSTS AND CONSULTANTS

RIDGEFIELD BUSINESS CENTER
25 CRIMSON CIRCLE
MARTINSBURG, WV 25403

VOICE: 304-596-2084

FAX: 304-596-2086

BLUESTONE ENERGY

215 E. WASHINGTON AVE
ELLENBORO

WV 26346

Monday, February 02, 2009

Lab Number 126829-2009-W Sample ID BOOKER #4

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
Total Molybdenum	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.01	
Total Nickel	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.006	
Total Potassium	521	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.06	
Total Sodium	534	mg/l	EPA 200.7	1/28/2009 16:37	T.Hanshaw	0.11	
Total Zinc	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.002	
Specific Conductivity	67932	umhos	EPA 120.1	1/22/2009 15:11	M.Coffman	0.14	
Total Boron	10.6	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.024	
Total Organic Carbon	0.73	mg/l	SM5310C	1/26/2009 8:50	A.Seitz	0.1	
Total Sulfate	ND	mg/l	EPA 300.0	1/26/2009 14:00	T. Miller	0.05	
Dissolved Aluminum	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.009	
Dissolved Barium	33.0	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.003	
Dissolved Boron	10.6	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.024	
Dissolved Cadmium	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.002	
Dissolved Calcium	2900	mg/l	EPA 200.7	1/28/2009 16:40	T.Hanshaw	0.078	
Dissolved Chromium	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.006	
Dissolved Copper	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.005	
Dissolved Iron	14.0	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.004	
Dissolved Lead	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.005	
Dissolved Magnesium	328	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.03	

Remarks:

Date Sample Collected 1/21/2009 13:00
Sample Submitted By T. Wyckoff
Date Sample Received: 1/21/2009 16:49

EMAIL COPY

MDL - Minimum Detectable Limit

PQL - Practical Quantifiable Limit

MCL - Maximum Contaminant Level, USEPA Regulated

[MCL] = Maximum Contaminant Level, Non-Regulated

* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition



RELIANCE LABORATORIES, INC.

BENEDUM INDUSTRIAL PARK
ROAD POST OFFICE BOX 4657
BRIDGEPORT, WV 26330-4657

VOICE: 304-842-5285 FAX: 304-842-5351

E-MAIL: <reliance@wvdsi.net>

**ENVIRONMENTAL
ANALYSTS AND
CONSULTANTS**

RIDGEFIELD BUSINESS CENTER
25 CRIMSON CIRCLE
MARTINSBURG, WV 25403

VOICE: 304-596-2084

FAX: 304-596-2086

BLUESTONE ENERGY

215 E. WASHINGTON AVE
ELLENBORO

WV 26346

Monday, February 02, 2009

Lab Number 126829-2009-W **Sample ID** BOOKER #4

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
Dissolved Manganese	5.50	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.007	
Dissolved Molybdenum	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.01	
Dissolved Nickel	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.006	
Dissolved Silicon	0.030	mg/l	EPA 200.7	1/28/2009 15:10	T.Hanshaw		
Dissolved Zinc	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.002	
Total Vanadium	ND	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.008	
Bicarbonate Alkalinity	ND	mg/l	SM2320B	1/22/2009 15:11	M.Coffman	2.81	
Total Bromide	ND	mg/l	EPA 300.0	1/22/2009 19:05	M.Coffman	0.05	
Total Strontium	855	mg/l	EPA 200.7	1/28/2009 11:07	T.Hanshaw		
Dissolved Sodium	486	mg/l	EPA 200.7	1/28/2009 16:40	T.Hanshaw	0.11	
Total Silica (SiO ₂)	7.49	mg/l	EPA 200.7	1/30/2009 9:55	T.Hanshaw	0.01	
Dissolved Potassium	481	mg/l	EPA 200.7	1/26/2009 12:09	T.Hanshaw	0.06	

Remarks:

Date Sample Collected 1/21/2009 13:00

Sample Submitted By T.Wyekoff

Date Sample Received: 1/21/2009 16:49

ND = Not Detected

MDL - Minimum Detectable Limit

MCL - Maximum Contaminant Level, USEPA Regulated

PQL - Practical Quantifiable Limit

[MCL] = Maximum Contaminant Level, Non-Regulated

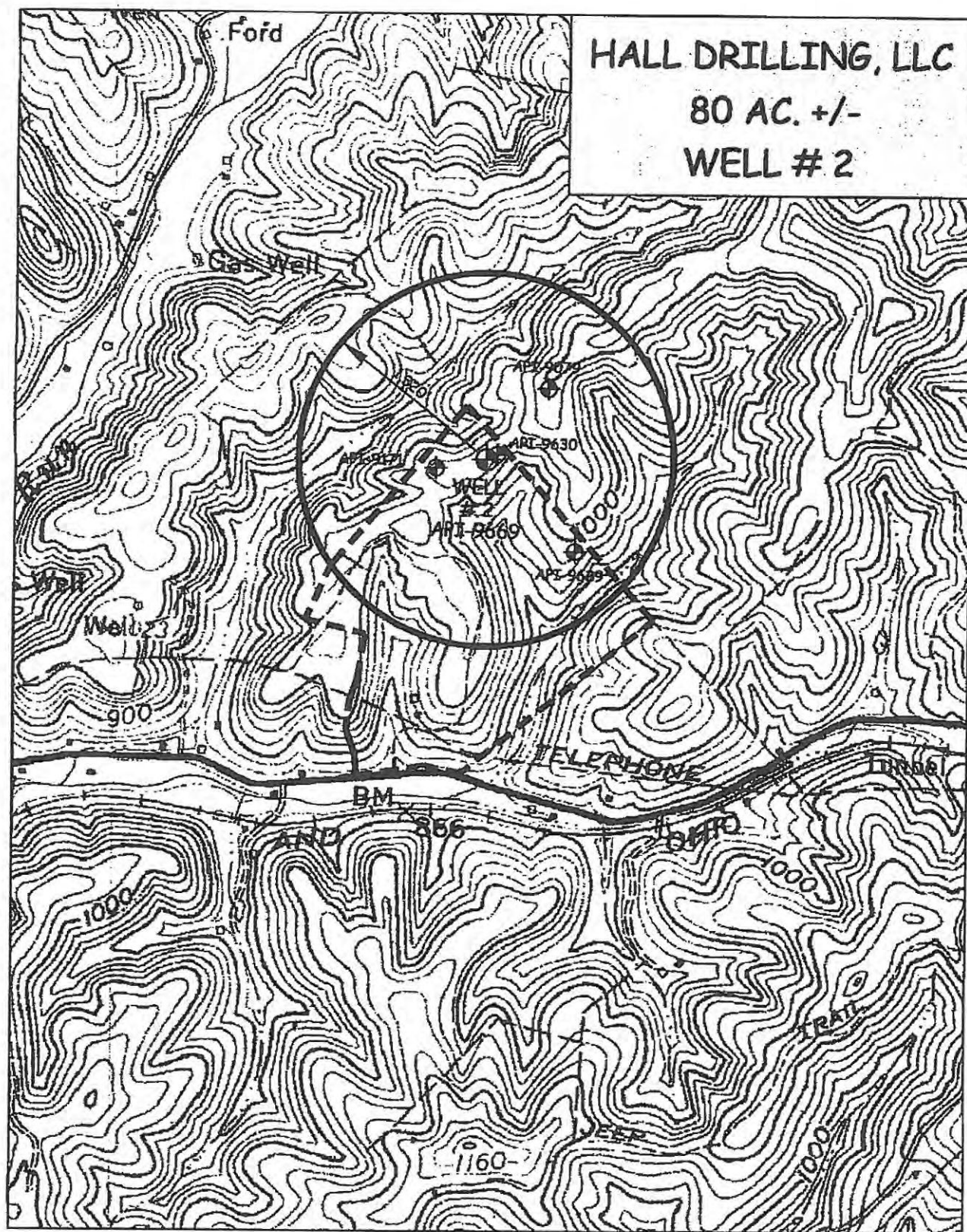
* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

EMAIL COPY

RL1001

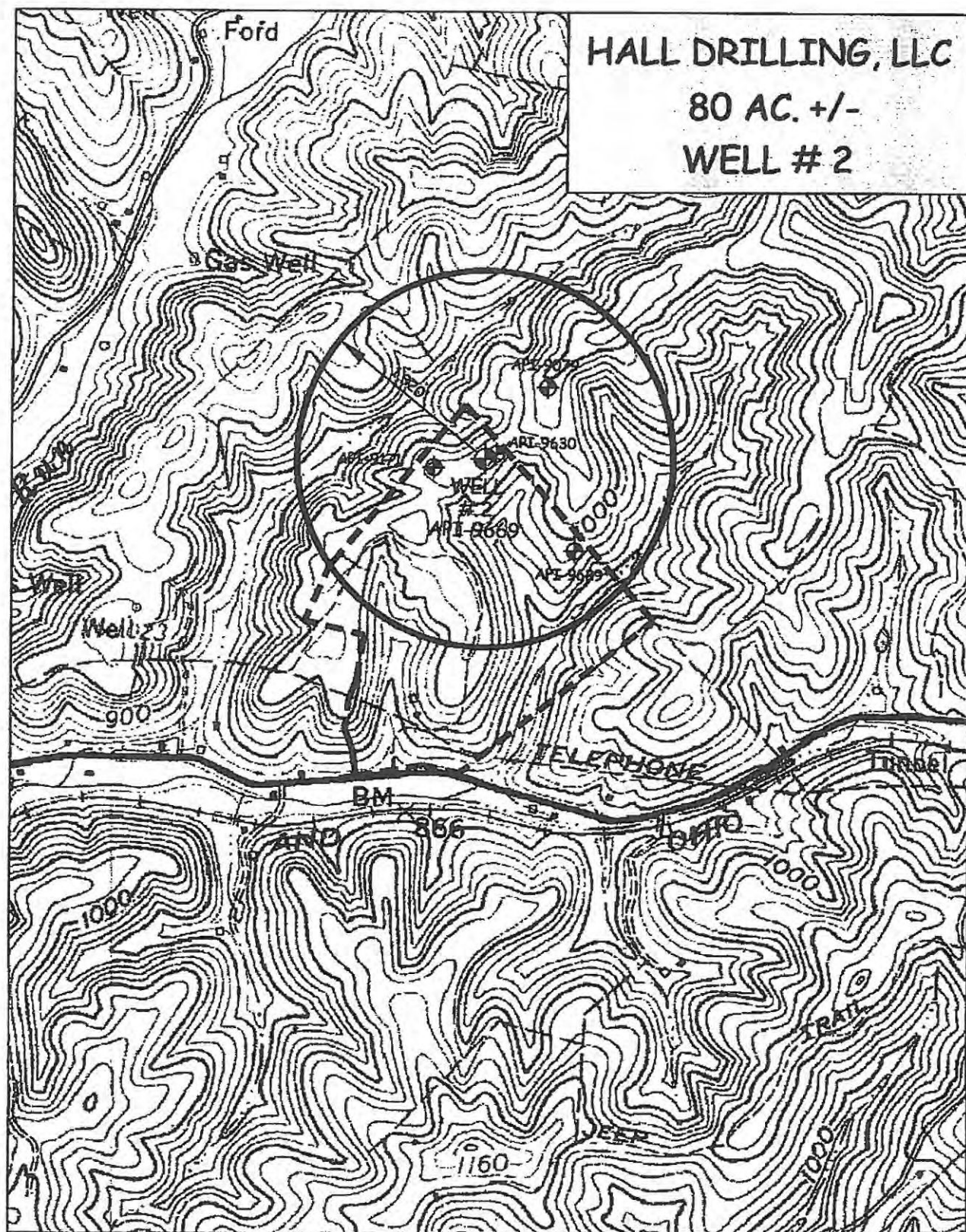
Hall Drilling API Numbers for disposal well injection

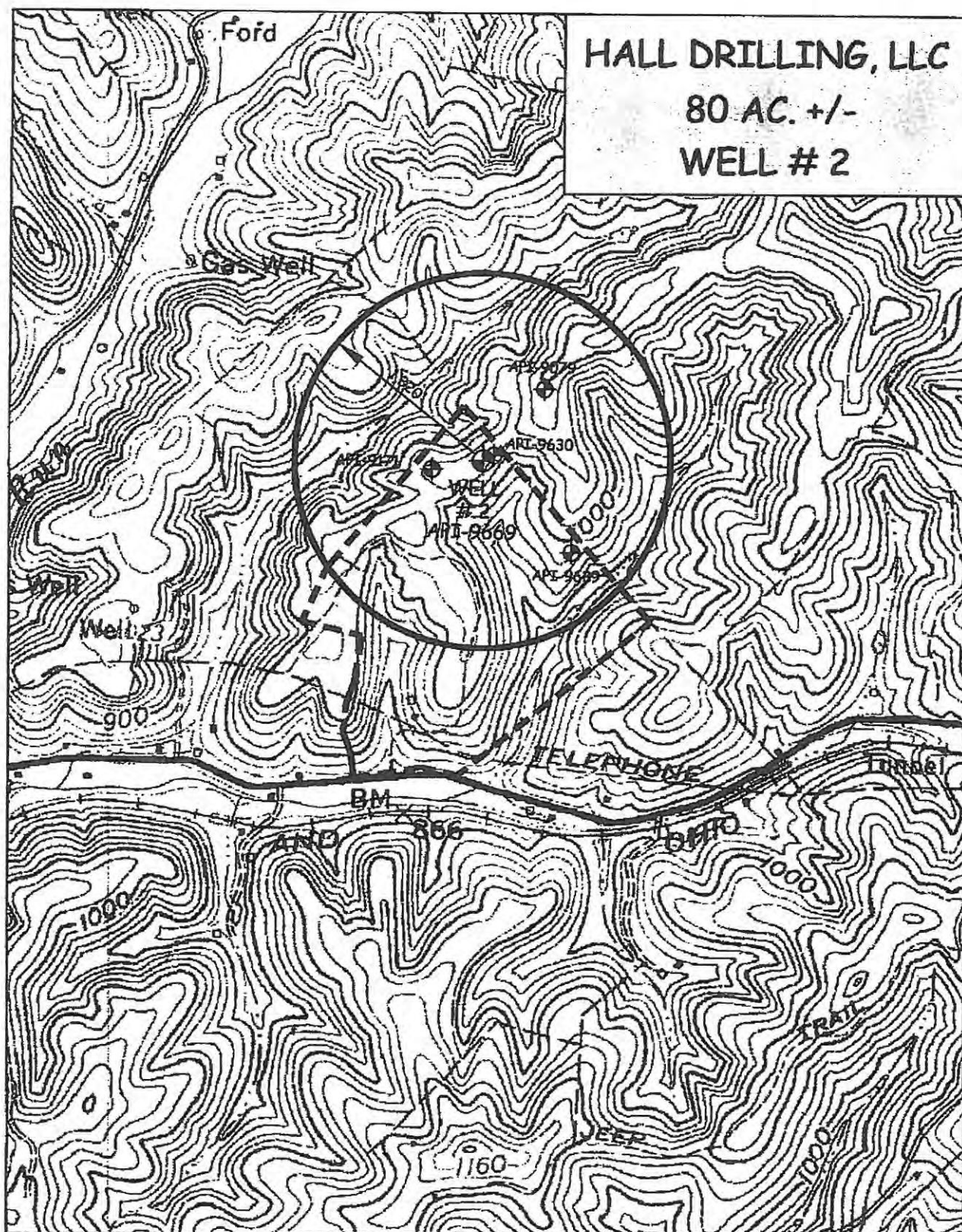
- 1. Tate #1 47-017-05646 Marcellus**
- 2. Mutschelknaus #6 47-017-05672 Marcellus**
- 3. Davis #1 47-033-05013 Marcellus**
- 4. Nicholson #3 47-017-05701 Marcellus**
- 5. Rominger #1 47-017-05657 Marcellus**
- 6. Ritter #1 47-033-05016 Marcellus**
- 7. Booher #4 47-017-05693 Marcellus**
- 8. Newlon #2 47-017-05586 Marcellus**
- 9. Cowgill #1 47-033-05079 Marcellus**
- 10. Harbert #1 47-033-05135 Marcellus**
- 11. Underwood #1 47-017-04585 Marcellus**
- 12. Van Scoy #1 47-017-05604 Marcellus**
- 13. Morrow #1 47-033-05142 Marcellus**
- 14. Cottrill #1 47-017-05680 Marcellus**
- 15. Sara Hurst #1 47-017-05638 Marcellus**
- 16. Chess #1 47-017-05647 Marcellus**
- 17. Chess #2 47-017-05645 Marcellus**
- 18. Mutschelknaus #2 47-033-05010 Marcellus**
- 19. Mutschelknaus #3 47-033-05011 Marcellus**
- 20. Newlon #1 47-017-05585 Marcellus**
- 21. Van Scoy #2 47-017-05777 Marcellus**
- 22. Bunnell #3 47-017-05402 Marcellus**
- 23. Powell #7 47-017-05814 Marcellus**

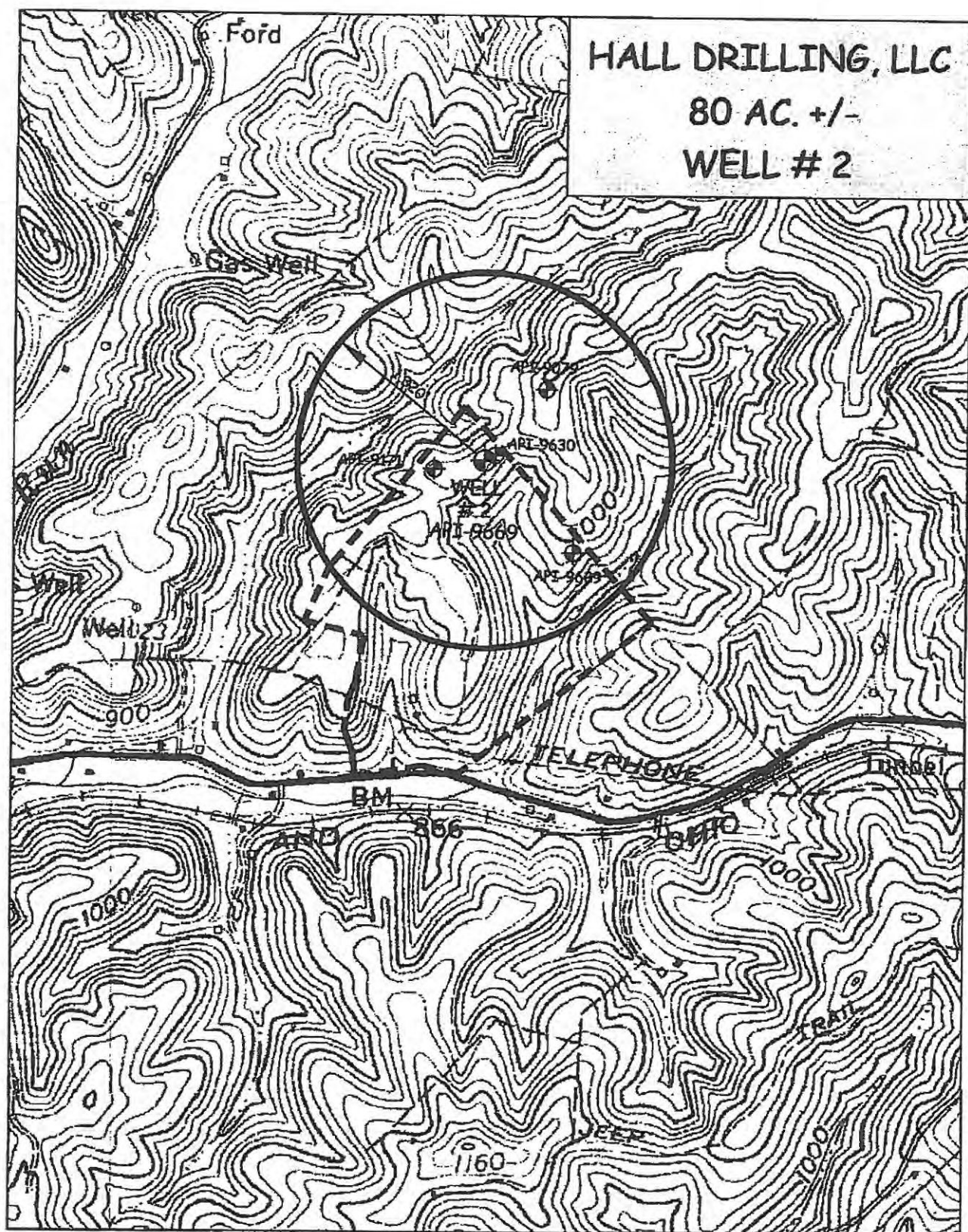


MOODY & SUMMERS LAND SURVEYING, LLC
P.O. BOX 293 ELLENBORO, WV 26346
(304) 869-4042

TOPO SECTION OF ELLENBORO 7.5'
JOB # 09-093 09/24/09 1" = 1000'







*TAPO Energy
Jerry Poling
P.O. Box 235
West Union, WV 26456
304-873-1839
fossilxp@aol.com*

December 1, 2009

Hall Drilling
215 Washington Ave.
P.O. Box 249
Ellenboro WV 26346

Re: Cased Hole log #09669

Mike,

This letter is written in response to your inquiry as to the CBL log of Ritchie county permit #09669. I do not have a copy of the actual CBL log for this well in question, rather a faxed copy of the original log. However this copy is in enough detail and quality that a solid determination of the quality of cement bond can be made.

This cased hole log was ran on 12/10/2007 by Key Energy Services, This log presentation is of a Gamma Ray, Cement Bond, Collar locator and the perfs are outlined as to depths they were shot.

Total depth of the casing in this well was found to be at 6,250'

The apparent top of cement is at 5,318'. The cement quality (bond) in this well is very good. General observation is that the bond curve rides on the 90% line from TD until 5,318 feet where the cement top is found and from that depth upwards the curve shows an 18% bond in free pipe.

This is due to the tool not being properly set up in the free pipe area, this curve should be reading at the 0% bond line. Instead it shows almost a 20% bond in free pipe.. This curve should have been adjusted to the 0% bond line which shows the pipe to be 100% free of cement above 5,318'.

Furthermore the bond in the cemented area shows a bond of 90%. This is also due to the tool not being properly set up.

Sometimes it is difficult to get the tools to ride the 100% bond line as it is just the nature of the tool itself and may take more than one repeat pass to obtain the proper curve. Often is the case where the operator is under a time restraint to get to the perforating portion of the cased hole log started and has the log ran as is. In this well there is a very good cement top and the bond itself was at 90% so it would have been a waste of time to run several passes just to get a curve the operator would desired.

It is of my opinion that the cement bond in this well is an excellent quality, has a well defined cement top and should be of no concern as to any microannulus failure or fluid leakage thru cement. This well was also hydrofracked without any cement failure in 2007.

If you have any question please call me at 304-991-3233

Respectfully,

Jerry Poling

*TAPO Energy
Jerry Poling
P.O. Box 235
West Union, WV 26456
304-873-1839
fossilxp@aol.com*

December 1, 2009

Hall Drilling
215 Washington Ave.
P.O. Box 249
Ellenboro WV 26346

Re: Cased Hole log #09669

Mike,

This letter is written in response to your inquiry as to the CBL log of Ritchie county permit #09669. I do not have a copy of the actual CBL log for this well in question, rather a faxed copy of the original log. However this copy is in enough detail and quality that a solid determination of the quality of cement bond can be made.

This cased hole log was ran on 12/10/2007 by Key Energy Services, This log presentation is of a Gamma Ray, Cement Bond, Collar locator and the perms are outlined as to depths they were shot.

Total depth of the casing in this well was found to be at 6,250'

The apparent top of cement is at 5,318'. The cement quality (bond) in this well is very good. General observation is that the bond curve rides on the 90% line from TD until 5,318 feet where the cement top is found and from that depth upwards the curve shows an 18% bond in free pipe.

This is due to the tool not being properly set up in the free pipe area, this curve should be reading at the 0% bond line. Instead it shows almost a 20% bond in free pipe.. This curve should have been adjusted to the 0% bond line which shows the pipe to be 100% free of cement above 5,318'.

Furthermore the bond in the cemented area shows a bond of 90%. This is also due to the tool not being properly set up.

Sometimes it is difficult to get the tools to ride the 100% bond line as it is just the nature of the tool itself and may take more than one repeat pass to obtain the proper curve. Often is the case where the operator is under a time restraint to get to the perforating portion of the cased hole log started and has the log ran as is. In this well there is a very good cement top and the bond itself was at 90% so it would have been a waste of time to run several passes just to get a curve the operator would desired.

It is of my opinion that the cement bond in this well is an excellent quality, has a well defined cement top and should be of no concern as to any microannulus failure or fluid leakage thru cement. This well was also hydrofracked without any cement failure in 2007.

If you have any question please call me at 304-991-3233

Respectfully,

Jerry Poling

*TAPO Energy
Jerry Poling
P.O. Box 235
West Union, WV 26456
304-873-1839
fossilxp@aol.com*

December 1, 2009

Hall Drilling
215 Washington Ave.
P.O. Box 249
Ellenboro WV 26346

Re: Cased Hole log #09669

Mike,

This letter is written in response to your inquiry as to the CBL log of Ritchie county permit #09669. I do not have a copy of the actual CBL log for this well in question, rather a faxed copy of the original log. However this copy is in enough detail and quality that a solid determination of the quality of cement bond can be made.

This cased hole log was ran on 12/10/2007 by Key Energy Services, This log presentation is of a Gamma Ray, Cement Bond, Collar locator and the perfs are outlined as to depths they were shot.

Total depth of the casing in this well was found to be at 6,250'

The apparent top of cement is at 5,318'. The cement quality (bond) in this well is very good. General observation is that the bond curve rides on the 90% line from TD until 5,318 feet where the cement top is found and from that depth upwards the curve shows an 18% bond in free pipe.

This is due to the tool not being properly set up in the free pipe area, this curve should be reading at the 0% bond line. Instead it shows almost a 20% bond in free pipe.. This curve should have been adjusted to the 0% bond line which shows the pipe to be 100% free of cement above 5,318'.

Furthermore the bond in the cemented area shows a bond of 90%. This is also due to the tool not being properly set up.

Sometimes it is difficult to get the tools to ride the 100% bond line as it is just the nature of the tool itself and may take more than one repeat pass to obtain the proper curve. Often is the case where the operator is under a time restraint to get to the perforating portion of the cased hole log started and has the log ran as is. In this well there is a very good cement top and the bond itself was at 90% so it would have been a waste of time to run several passes just to get a curve the operator would desired.

It is of my opinion that the cement bond in this well is an excellent quality, has a well defined cement top and should be of no concern as to any microannulus failure or fluid leakage thru cement. This well was also hydrofracked without any cement failure in 2007.

If you have any question please call me at 304-991-3233

Respectfully,

Jerry Poling

✓ 9079

91172 - Jay-Bee

✓ 91 9171 Jay-Bee

9629 - Never Drilled

9121 - Never Drilled

9430✓ - Jay-Bee

December 2, 2009

Jamie Peterson
Gene Smith
WVDEP, Office of Oil and Gas
601 57th Street
Charleston, WV 25304

Re: Cased Hole Log, Shanley Well
Ritchie County, West Virginia

Dear Sirs,

Please find attached a letter from Geologist, Jerry Poling pertaining to the cement bond log for the Shanley 6A Well (API# 47-085-09669) located in Ritchie County, West Virginia. It is Jerry's belief according to the reading of the log that the integrity of the cement bond is of excellent quality in this well.

Thank you for your time and attention to this matter. Please feel free to contact me at (304) 869-3404 if you should have any questions or need any additional information in order for Hall Drilling to have this well approved as quickly as possible.

Sincerely,



Michael T. Hall
President

MTH:ad

December 2, 2009

Jamie Peterson
Gene Smith
WVDEP, Office of Oil and Gas
601 57th Street
Charleston, WV 25304

Re: Cased Hole Log, Shanley Well
Ritchie County, West Virginia

Dear Sirs,

Please find attached a letter from Geologist, Jerry Poling pertaining to the cement bond log for the Shanley 6A Well (API# 47-085-09669) located in Ritchie County, West Virginia. It is Jerry's belief according to the reading of the log that the integrity of the cement bond is of excellent quality in this well.

Thank you for your time and attention to this matter. Please feel free to contact me at (304) 869-3404 if you should have any questions or need any additional information in order for Hall Drilling to have this well approved as quickly as possible.

Sincerely,



Michael T. Hall
President

MTH:ad

December 2, 2009

Jamie Peterson
Gene Smith
WVDEP, Office of Oil and Gas
601 57th Street
Charleston, WV 25304

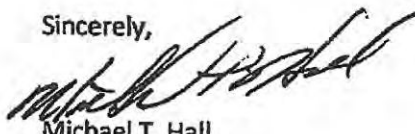
Re: Cased Hole Log, Shanley Well
Ritchie County, West Virginia

Dear Sirs,

Please find attached a letter from Geologist, Jerry Poling pertaining to the cement bond log for the Shaley 6A well (API# 47-085-09669) located in Ritchie County, West Virginia. It is Jerry's belief according to the reading of the log that the integrity of the cement bond is of excellent quality in this well. We feel that the porosity of this well is 15% at the injection formation.

Thank you for your time and attention to this matter. Please feel free to contact me at (304) 869-3404 if you should have any questions or need any additional information in order for Hall Drilling to have this well approved as quickly as possible.

Sincerely,



Michael T. Hall
President

MTH:ad



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

Joe Manchin III, Governor
Randy C. Huffman, Cabinet Secretary
www.wvdep.org

December 03, 2009

HALL DRILLING, LLC
P O BOX 249
ELLENBORO, WV 26346-

Re: Underground Injection Control (UIC)
Permit #UIC2D0859669

Dear Applicant:

Your application for the referenced Underground Injection Control (UIC) Permit has been reviewed and found to be complete. Please find enclosed a **draft UIC permit and a public notice** which are prescribed by Title 47, Series 13, Section 13.24 issued pursuant to WV Code Chapter 22, Article 11 and 12. You are required to have this notice published in its entirety, as a Class I legal advertisement in the **THE PENNSBORO NEWS** on 12/14/2009.

Upon publication, you are required to send a copy of the certificate of publication to:

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Attn: James Peterson, Regulatory/Compliance Manager

The cost of publication is also your responsibility.

If no comments are filed during the thirty (30) day commenting period for the public notice, a permit may be issued. If you have any questions, feel free to call me at (304) 926-0499 ext. 1653.

Sincerely,

James Peterson
Regulatory/Compliance Manager

Enclosures as stated

Promoting a healthy environment.

Technical Review

- Need Cement log? - OK 12/3/09
 - ↓ Top map needed
 - ✓ AOR - well # 85-9173⁷ inf. needed
 - ✓ Inj. Fluid Analysis - E-mailed Tom/Terry Booker #24
12/3/09
 - ✓ Terry W. & IF to bring in confining layer
description - porosity 12/3/09
-

M+P =

$$\begin{aligned} & .875 \times 6164 - 6164 \times .433 \times 1.1 \\ & = 4931.2 - 2936 \\ & = \underline{1995 \text{ psi}} \end{aligned}$$



west virginia department of environmental protection

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

Joe Manchin III, Governor
Randy C. Huffman, Cabinet Secretary
www.wvdep.org

November 12, 2009

West Virginia Geological & Economic Survey
Attn: Katharine Lee Avery
1 Mont Chateau Road
Morgantown, WV 26508

Dear Mrs. Avery;

Enclosed is an underground injection control (UIC) permit application for a disposal well for your review. Please review the permit application and submit any comments/concerns to this agency. Any information you can provide me regarding things to address before approving such a permit would be helpful.

I appreciate the service and knowledge you and your agency provides.

If you have any questions regarding this matter feel free to contact me at 304-926-0499, ext. 1653.

Sincerely,

James Peterson
Environmental Resources Specialist / Permitting

- 12/10/09 - Talked to Terry/Tam
to investigate

WEST VIRGINIA
GEOLOGICAL AND ECONOMIC SURVEY

1 Mont Chateau Road
Morgantown, WV 26508-8079

Joe Manchin, III, Governor
Kelley Goes, Secretary, Department of Commerce
Michael Ed. Hohn, Director and State Geologist



Phone: (304) 594-2331
Fax: (304) 594-2575
E-mail: info@geosrv.wvnet.edu
Web Site: <http://www.wvgs.wvnet.edu>

Mr. James Peterson
Office of Oil and Gas
WV Department of Environmental Protection
601 57th Street
Charleston, WV 25304

December 4, 2009

Re: Hall Drilling, LLC. API Number 085-09669

Dear Jamie:

I have reviewed the above referenced UIC permit. I certainly prefer to see fluids injected into the same or a deeper zone. The list of wells to be serviced by this well shows that they produce from the Marcellus, so the produced fluids should be compatible with those in the proposed disposal well..

No units are given for the proposed volume of fluid per hour. I am not sure where the water wells which were sampled for analysis are located. They may be shown on the page that I don't think reproduced well as a black and white copy.

My main concern with this well is the old well which I believe is located with 0.25 miles of the proposed injection well. It is shown on the attached map as 91172 and was one we found a location for during the course of our abandoned wells project. I don't have any other information about it, but it is probably worthwhile to have it looked into by someone prior to the permit being issued or injection commencing in this well.

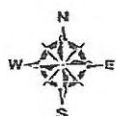
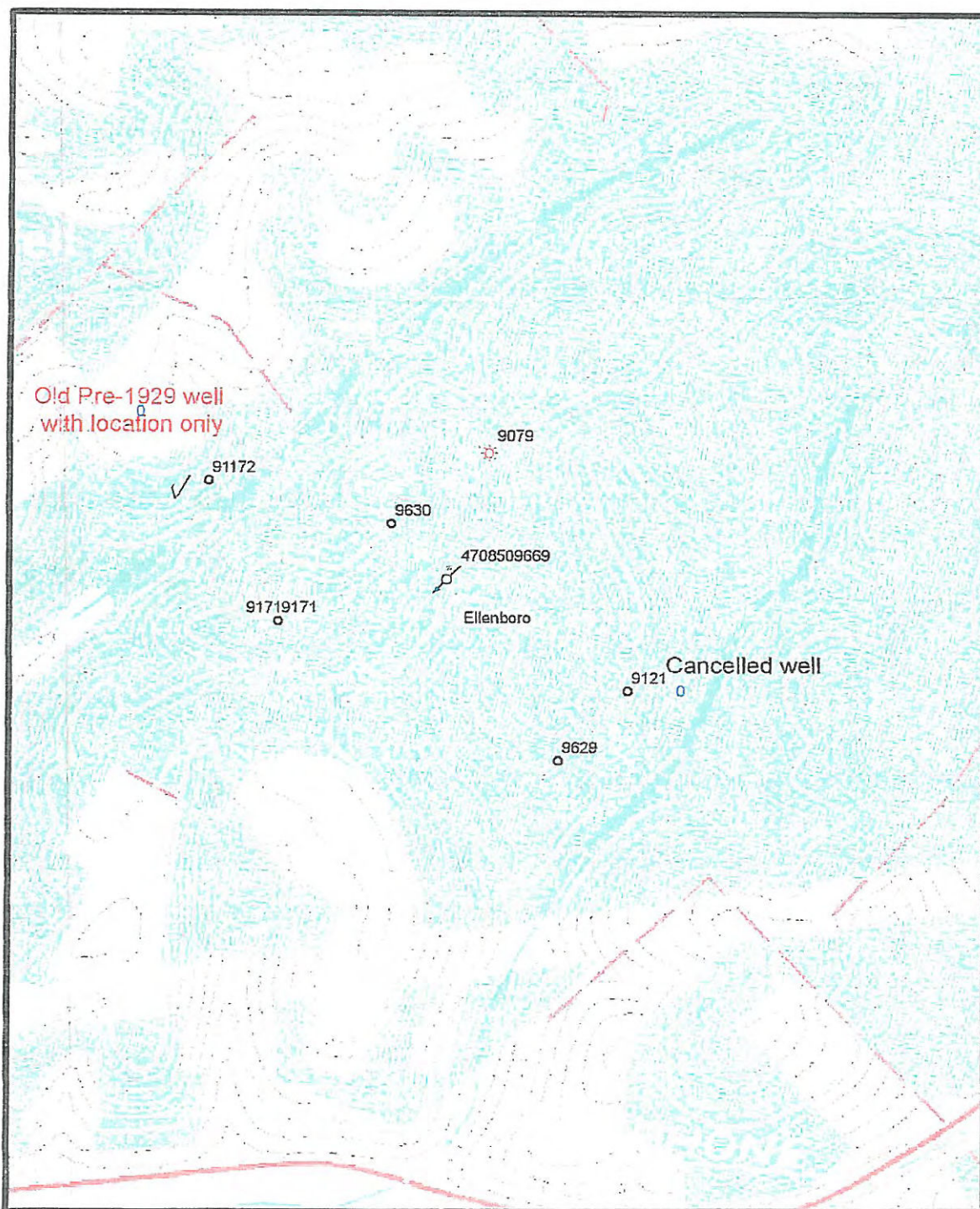
I assume that the Mechanical Integrity Testing has been done to your satisfaction although no data on it are included here.

If you have any questions about anything I have mentioned above, please contact me. I apologize for taking so long to get this letter written.

Sincerely,

Katharine Lee Avery,
Petroleum Geologist and Manager,
Oil and Gas Program

Wells within 0.25 miles of 4708509669



Legend

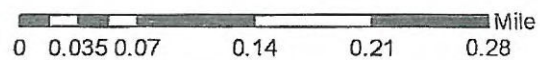
wells within 0.25 mi of 08 9669



○ unknown

⊛ Gas

○ not available







UIC Impoundment and Groundwater Monitoring Plan
Hall Drilling Underground Injection Center, Ellenboro, West Virginia

Purpose

Monitoring and periodic routine investigative procedures will be performed on the impoundment area of the Hall Drilling Underground Injection Center by visual observations and by monitoring wells located down gradient from the impoundment site to ensure prompt notification of the migration of disposal fluids temporarily retained in the pond. The monitor wells will be designed to meet specifications as required by applicable laws, permits and regulations, and the Region 3 United States Environmental Protection Agency guidelines. Pertinent data will be reviewed regularly by qualified operators and forwarded to the agencies as required. Monitoring and testing will be designed to provide data regarding impoundment integrity and safe operation.

Design of the Monitoring Network

Monitoring Sites

Two to three monitoring well locations will be identified along the eastern slope of the impoundment area based upon the practicalities of installation and monitoring as well as the ability to detect contaminate releases in time to remediate before the substance enters groundwater wells in the area. The monitoring wells will be within the leased area of the Tech Service Center and will not require additional security measures to be installed. Data will be collected from sources such as drilling information, core samples, hydrological tests and/or geophysical logs to assist in determining the location distance from the impoundment and the sampling formation thickness, pressure, lithology and hydrologic properties. The zone for sampling will be selected for adequate transmissivity and formation pressure.

Well Installation

As the monitoring field is in the design phase, specific details regarding the construction, specific materials, drilling methods and well development are not available at this time. Construction of the monitoring field will begin after proper approval by the appropriate agencies. The monitoring wells will be constructed and developed based on the West Virginia Rules 47CST59 and Title 47 Series 60. The vertical depths and types of wells will be determined by the first permanent aquifer zone and the potential contaminants properties. Mechanical integrity of the wells will be maintained at all times to ensure proper sampling. Copies of all work reports and logs will be collected and the information dispersed to the DEP upon completion.

Design of Sampling and Analysis Plan

Control strategies will be developed based upon the properties of disposal fluid. A potential contaminant list will be based upon an analysis of a sample of disposal fluid and testing designed to detect these elements and compounds. The disposal fluid analysis includes tests for pH, chloride levels, sodium, TDS, TSS, arsenic, aluminum, barium, cadmium, chromium, iron, lead, manganese, MBAS, sulfate, BTEX, TPHs and

NORM. A sample of in-situ groundwater will also be analyzed to determine pre-existing levels of these chemicals. A baseline of sampling constituents is being created and the MCL will be determined in accordance to current EPA standards. A Quality Assurance Project Plan (QAPP) will be designed to ensure proper testing procedures are followed in accordance to EPA approved analytical methods.

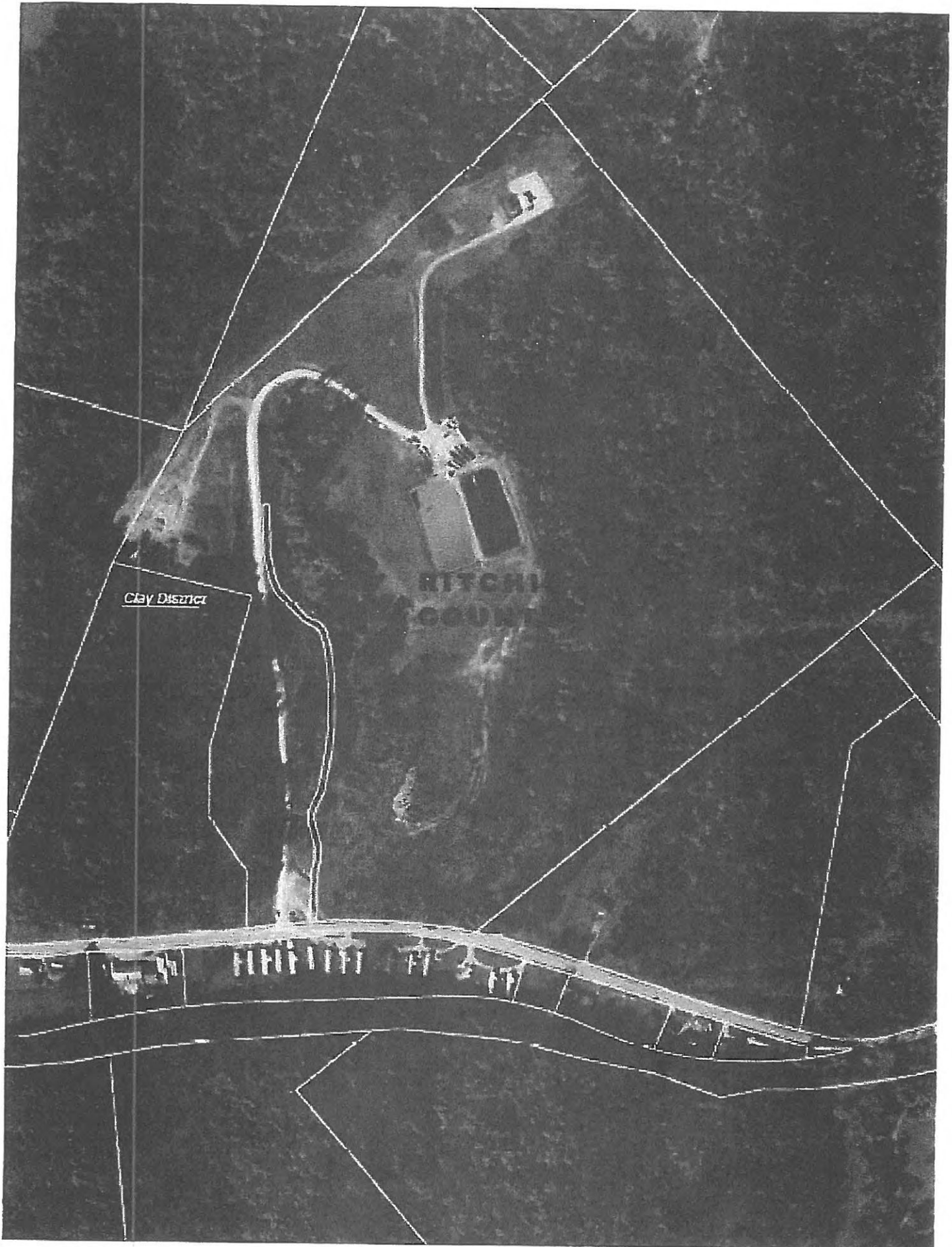
Monitoring Plan

A baseline for groundwater quality will be established in the first year. A schedule for sampling the monitor wells will be created after an analysis of the groundwater formation to ensure the prompt detection of disposal fluid migration. Anticipated sampling schedule for the monitoring wells will be quarterly pursuant to USEPA regulations at 146.13(d)(2) unless analysis of data contraindicates. The schedule of sampling will be determined and submitted to the DEP when completed.

If a monitor well fails required continuous monitoring or periodic testing standards, the well will be retested. After investigation into the cause for the failure, action may consist of notifying appropriate authorities, and taking remedial action for repairing the problem.

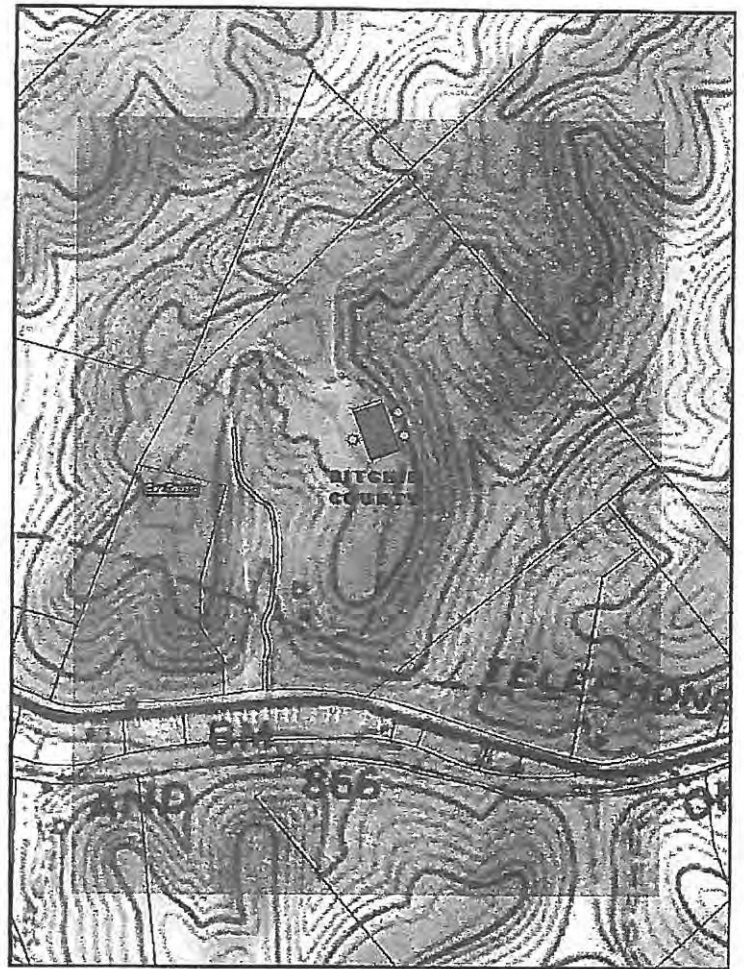
Plugging and Abandonment Plan

A component in the design of the monitoring field plan will be the plugging and abandonment of the monitor wells. The operator of the Tech Service Center will maintain financial responsibility and resources necessary to close, plug and abandon the monitoring wells consistent with 40 CFR 146.10.



Clay District

RITCHIE
COUNTY



PUBLIC NOTICE

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0450
Fax: (304) 926-0452

Re: UIC Permit Application
UIC2D0859669

APPLICATION FOR STATE UNDERGROUND INJECTION CONTROL PERMIT

Public Notice Number: UIC-2009-015

Public Notice Date: December 14, 2009.

Paper:
THE PENNSBORO NEWS
POST OFFICE BOX 368
PENNSBORO, WV 26415-0368

The following applicant has applied for a State Underground Injection Control (UIC) Permit for this facility or activity:

Applicant:
HALL DRILLING, LLC
P O BOX 249
ELLENBORO, WV 26346

Application Number: UIC2D0859669
Business Conducted: Oil and/or natural gas production.

Location: On the waters of Hushers Run in Clay District of Ritchie County. Approximate location : Utm North 4348670.1922 and Utm East 498841.76

Activity: Issuance of an underground injection control (UIC) permit for the subsurface disposal of produced fluids.

The state of West Virginia will act on the above application in accordance with the West Virginia Legislative Rules, Title 47, Series 13, Section 13.24 issued pursuant to Chapter 22, Article 11&12.

Any interested person may submit written comments on the draft permit and may request a public hearing within 30 days of the date of this public notice. Such comments or requests should be addressed to:

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Attn: James Martin

Comments received within this period will be considered prior to acting on the permit application. Correspondence should include the name, address, and telephone number of the writer and a concise statement of the nature of the issues raised. A public hearing may be held if the Chief considers significant the degree of public interest raised on issues relevant to the draft permit.

Interested persons may contact the person identified above at (304) 926-0450 to obtain further information.

The application, draft permit, and any required fact sheet are on file and may be inspected, by appointment, or copies obtained, at a nominal cost, at the Office of Oil and Gas, 601 57th Street SE, Charleston, WV 25304, between 8:00 a.m. and 4:00 p.m. on business days.

110.81
800.00
800.00

Given under my hand this 24th day of August, 2009.

THE BOARD OF EDUCATION OF THE
COUNTY OF RITCHIE
Mr. Robert Daquillante, Secretary

12-9 R

00 Pennsboro Old Stone House,
00 Railroad Depot and Trailhead Improvements Project

00 The City of Pennsboro, on behalf of the Ritchie
00 County Historical Society is requesting bids for
00 rehabilitation work for the Pennsboro Trailhead
00 Project, WV State Project U349-PENNS - 1.00
00 Federal Project TEA-0022 (0011) in Ritchie County.

00 Services: The project includes:
00 1) Old Stone House in Pennsboro, WV to
00 include structural and roof improvements. Work
00 elements include foundation piers, leveling structure,
00 improving drainage, repairing joists and existing
00 timbers, excavating crawl spaces, installing
00 foundation vents and other foundation/stabilization
00 work as needed; and repairing/replacing roof rafters,
00 roof flashing, and other roofing elements as needed.

00 2) Pennsboro Railroad Depot in Pennsboro,
00 WV. Work elements to include repaving and sealing
00 the walls; repairing/replacing the gutter drains;
00 removing the west steps and handrail, installing a
00 drain extension and installing new steps and
00 handrails; closing the eaves; installing roof vents;
00 installing gutters and downspouts; repairing,
00 repointing and replacing bricks as needed; installing
00 foundation vents; sealing doors, windows and the
00 foundation; and other landscaping and ground work
00 as needed. This Depot work will require close
00 coordination with the work specified for the adjacent
00 Trailhead improvements project.

12-2, 8-R

3) Trailhead in Pennsboro, WV. Work
00 elements to include improving the drainage, grading
00 and surfacing the parking area for the trailhead;
00 improving the trail surface in the area of the depot and
00 trailhead access; purchasing and installing trailhead
00 amenities such as lighting for the block, a water
00 foundation, signage, benches, and -landscape
00 plantings.

Funds for this project are through the WV State
00 Historic Preservation Office, with Federal Funds from
00 the National Park Service, Department of the Interior,
00 the Transportation Enhancement Program, the West
00 Virginia Department of Environmental Protection -
00 Clean Water Act Section 319 Nonpoint Source
00 Program Grant and private funding through the
00 Ritchie County Historical Society, Inc., a 501 (c) 3
00 organization.

All work must adhere to the Secretary of the Interior's
00 Standards for Rehabilitation.

Qualifications: Ability to complete projects in a
00 timely manner. Any Contractor submitting a BID on
00 this project hereby certifies, indicates, and
00 acknowledges that he has a proper, current, valid
00 license, in accordance with the requirements of West
00 Virginia State Code § 21-11-8 and § 21-11-11, to
00 perform the contemplated work and meets all the
00 qualifications required by the statutes of the State and
00 subdivision in which the work is to be performed.

All Bidders must also include their Contractor's
00 license number on any BID(s) submitted. A
00 Subcontractor shall furnish such person's Contractor's
00 license number to the Contractor prior to the award of
00 the Contract as referenced to in the West Virginia
00 State Code § 21-11-11.

BIDDERS must comply with the requirements for
00 Affirmative Action and Minority Business Enterprises
00 participation as described in the Federal
00 Specifications insert to the Contract Documents.
00 Special provision will be made by the BIDDER to
00 show what portions of the BID within each Division
00 are supported by Minority Business Enterprise work.
00 In addition, a disadvantaged Business Enterprise goal
00 of zero has been set for this project.

BIDDERS may obtain, upon request, information
00 concerning local MBE firms.

BIDDERS must comply with provisions of the West
00 Virginia Prevailing Wage Code regarding labor
00 standards for federally-assisted construction, the
00 Copeland Anti-Kickback Act (40 U.S.C. § 276C AND
00 18 U.S.C. § 874), the Contract Work Hours and
00 Safety Standards Act (40 U.S.C. §§ 327-333), "Equal
00 Employment Opportunity" Executive Orders 11246
00 and 11375 and 41 CFR 60.

BIDDERS must comply with all Federal statutes,
00 executive orders, rules and regulations regarding the
00 "Americans With Disabilities Act," 28 CFR 25 and 29
00 CFR 1830 and with the "General Prohibitions Against
00 Discrimination," 28 CFR 35 and all other regulations
00 under Title II of "The American With Disabilities Act"
00 which are applicable.

It is the policy of the West Virginia Department of
00 Transportation, Division of Highways, that
00 Disadvantaged and Women-owned Business
00 Enterprises shall have the maximum opportunity to
00 participate in the performance of contracts financed in
00 whole or in part with Federal funds.

BIDDERS must comply with, all applicable standards,
00 executive orders, or regulations, if applicable, issued
00 pursuant to the Clean Air Act (42 U.S.C. §§ 7401 et
00 seq.), the Federal Water Pollution Control Act (33
00 U.S.C. §§ 1251 et seq.), and the Energy Policy and
00 Conservation Act (Pub. L. 94-163).

Expressions of Interest: Contractors wishing to be
00 considered shall submit the following to the City of
00 Pennsboro, Trailhead Advisory Committee, 422 Main
00 Street, Pennsboro, WV 26415 by 4:15 pm on
00 Wednesday, 30 December, 2009.

Letter of interest including lump sum bid proposal and
00 time frame for completion of the projects.

A optional pre-bid meeting will be held on
00 Wednesday, 16 December, 2009 at 10:00 am.
00 Attendance is strongly encouraged.

Bidding Documents are on file for inspection at the
00 following offices during normal working hours:

Michael Baker, Jr., Inc.
00 5008 West Washington Street,
00 Charleston, WV 25313
00 Phone: (304) 769-0821
00 Telecopier: (304) 769-0822

Contractors Association of WV
00 2114 Kanawha Blvd.,
00 East Charleston, WV 25311
00 Phone: (304) 342-1166
00 Telecopier: (304) 342-1074

City of Pennsboro
00 422 Main Street
00 Pennsboro, WV 26415
00 Phone: (304) 659-2377
00 Telecopier: (304) 659-3309

Copies of the Bidding Documents may be obtained
00 from Michael Baker, Jr., Inc. by submitting a check or
00 money order made payable to Michael Baker, Jr.,
00 Inc., in the amount of \$200.00 which is non-
00 refundable. In addition, there will be a delivery charge
00 of \$25.00 if delivery is required. This delivery charge
00 is not refundable and delivery is at the requester's
00 risk. In order to be considered a valid and responsible
00 Bidder, the Bidder must obtain a copy of the Bidding
00 documents from the Engineer's office prior to the Bid
00 opening date.

Selection Process: The City of Pennsboro Trailhead
00 Advisory Committee, the Ritchie County Historical
00 Society and representatives from Michael Baker Jr.,
00 Inc. will review all proposals and select a contractor
00 for the project, subject to the approval of the WV
00 Historic Preservation Office and the WV Department of
00 Transportation, Division of Highways. Selection will
00 be based on (1) cost, (2) experience with historic
00 rehabilitation projects and (3) proven ability to
00 complete a project.

A selection of the lowest responsible/responsive
00 bidder will be made within two weeks and the City of
00 Pennsboro will want to sign a contract with the
00 contractor within 10 days of Notice of Award.

Payment Process: Contractors will be paid for work
00 completed. Last payment will be held until work is
00 completed and approved by the WV Historic
00 Preservation Office and the WV Department of
00 Transportation, Division of Highways.

If you have any questions regarding the scope of
00 work, qualifications requirements, information needed,

In the bid proposal, selection process or payment
00 process please contact Michael Baker, Jr., Inc.

30 November 2009

Norma J Davis
00 Project Administration Pennsboro Trailhead Project
00 12-2,9 R

PUBLIC NOTICE

West Virginia Department of Environmental Protection
00 Office of Oil and Gas
00 601 57th Street SE
00 Charleston, WV 25304 Re: UIC Permit Application
00 Phone: 304.926.0450 UIC2D059569
00 Fax: 304.926.0452

APPLICATION FOR STATE UNDERGROUND
00 INJECTION CONTROL PERMIT

Public Notice Number: UIC-2009-015

Paper:
00 THE PENNSBORO NEWS
00 POST OFFICE BOX 368
00 PENNSBORO, WV 26415-0368

Public Notice Date: December 14, 2009

The following applicant has applied for a State
00 Underground Injection Control (UIC) Permit for this
00 facility or activity:

Applicant:
00 HALL DRILLING, LLC
00 P O BOX 249
00 ELLENBORO, WV 26346

Application Number: UIC2D059569

Business Conducted: Oil and/or natural gas
00 production.

Location: On the waters of Hushais Run in Clay
00 District of Ritchie County. Approximate location: UIC
00 North 4348670.1922 and UIC East 490841.76.

Activity: Issuance of an underground injection control
00 (UIC) permit for the subsurface disposal of produced
00 fluids.

The state of West Virginia will act on the above
00 application in accordance with the West Virginia
00 Legislative Rules, Title 47, Series 13, Section 13.24
00 issued pursuant to Chapter 22, Article 11 & 12.

Any interested person may submit written
00 comments on the draft permit and may request a
00 public hearing within 30 days of the date of this public
00 notice. Such comments or requests should be
00 addressed to:

Office of Oil and Gas
00 601 57th Street SE
00 Charleston, WV 25304
00 Attn: James Martin

Comments received within this period will be
00 considered prior to acting on the permit application.
00 Correspondence should include the name, address,
00 and telephone number of the writer and a concise
00 statement of the nature of the issues raised. A public
00 hearing may be held if the Chief considers significant
00 the degree of public interest raised on issues relevant
00 to the draft permit.

Interested persons may contact the person
00 identified above at 304.926.0450 to obtain further
00 information.

The application, draft permit, and any required fee
00 shall be on file and may be inspected, by
00 appointment, or copies obtained, at a nominal cost at
00 the Office of Oil and Gas, 601 57th Street SE,
00 Charleston, WV 25304, between 8:00 a.m. and 4:00
00 p.m. on business days.

12-9 R

h Cut
stmas
is!
H
anters
643-5354
Bunnell's
Run Road
Harrisville

THEDS
IRGINIA
YOUR
6881
Call The Home
38-369-5002
you can OWN???
Show-Danville TO-
102.

luds! 3 bedroom 2
4 bedroom 2 bath
ore 1-4 bedrooms
ings 800-620-4946

Classified Ads Get Fast Results!



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

Joe Manchin III, Governor
Randy C. Huffman, Cabinet Secretary
www.wvdep.org

UIC Permit

HALL DRILLING, LLC
P O BOX 249
ELLENBORO, WV 26346-

Dear Applicant:

Enclosed you will find Underground Injection Control Permit Number UIC2D0859669 dated January 20, 2010. Be advised that the duration of the permit is for a period of five (5) years.

Also be advised that all conditions established by UIC Permit Number UIC2D0859669 either expressly or incorporated by reference, must be strictly adhered to. All monitoring forms shall be submitted to the Office of Oil and Gas in the manner and frequency prescribed. The monitoring forms will be compared with the scope of permitted activity to verify compliance.

Please review the permit carefully and be aware of all permit conditions. Compliance of all permit conditions will be strictly enforced.

The operation of this injection well facility in general, including maintenance of all related surface equipment, shall be conducted so as to preclude any unlawful discharge of waste materials into the surface or ground waters of the state.

James Martin
Chief,
Office of Oil and Gas

Enclosures as stated

WR-37
REV. 5/01

Date: MARCH 15, 2010

Operator's Well Number 42

State County Permit

API Well No.:

47-01815-0-0191668

UIC 200859669

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENT-OFFICE OF OIL AND GAS
PRE-OPERATION CERTIFICATE
FOR LIQUID INJECTION OR WASTE DISPOSAL WELL

WELL OPERATOR Hall Drilling LLC

DESIGNATED AGENT TERRY WYCKOFF/M. KE HALL

Address PO Box 249

Address PO Box 249

ELLENBORO WV 260346

ELLENBORO WV 260346

GEOLOGICAL TARGET FORMATION MARCELLUS Depth 6164 feet(top) to 6250 feet(bottom)

Virgin reservoir pressure in target formation _____ psig

Source of information on virgin reservoir pressure: _____

Perforation intervals _____

Open-hole intervals _____

MAXIMUM PERMITTED INJECTION OPERATIONS

Well head injection pressure: _____ psig

Bottom hole pressure: _____ psig

Volume per hour: _____

DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED

Liquids to be injected for oil recovery: _____

Wastes to be disposed of: MARCELLUS and Formation Above to inject water

Additives (Slurry mediums, inhibitors, solvents, oxidizers, deoxidizers, etc.) _____

SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL Lined 2 7/8

control Pipe with insulators

ADDITIONAL DRILLING AS PART OF THE CONVERSION (Complete form WR-35)

DETAILS ON NEW CASING AND TUBING PROGRAM AS PART OF THE CONVERSION (To be completed below unless the new casing and tubing program is described on a form WR-35, submitted in connection with the permit to which this form WR-37 relates.)

CASING OR TUBING TYPE	SIZE	GRADE	WEIGHT PER FT.	NEW	USED	FOOTAGE USED IN DRILLING	FOOTAGE LEFT IN WELL	CEMENT USED	PACKERS (KIND, SIZE, DEPTH SET)
CONDUCTOR									
FRESH WATER	<u>4 5/8</u>		<u>22</u>	<u>X</u>		<u>130</u>	<u>130</u>		
COAL									
INTERMEDIATE	<u>7</u>		<u>16</u>	<u>X</u>		<u>1842</u>	<u>1842</u>		
PRODUCTION	<u>4 1/2</u>		<u>11.60</u>	<u>X</u>		<u>6263</u>	<u>6263</u>		
TUBING	<u>2 7/8</u>	<u>upset</u>	<u>6.5</u>	<u>X</u>		<u>6164</u>	<u>6164</u>	<u>on packer</u>	<u>6164</u>
LINERS									

Arrowset 1-X
MECHANICAL PRODUCTION
PACKER

WR37

MECHANICAL INTEGRITY TEST

Test Method: Filled back side with water, Ast with
pump to 1000⁺, Well held 1000⁺ For 23 min, Stop test
Well OK.

The undersigned certifies that the test was performed on March 15, 2010 and demonstrated mechanical integrity of the well. The test was witnessed by Daniel Wilson representing the Office of Oil and Gas.

[Signature]
Well Operator

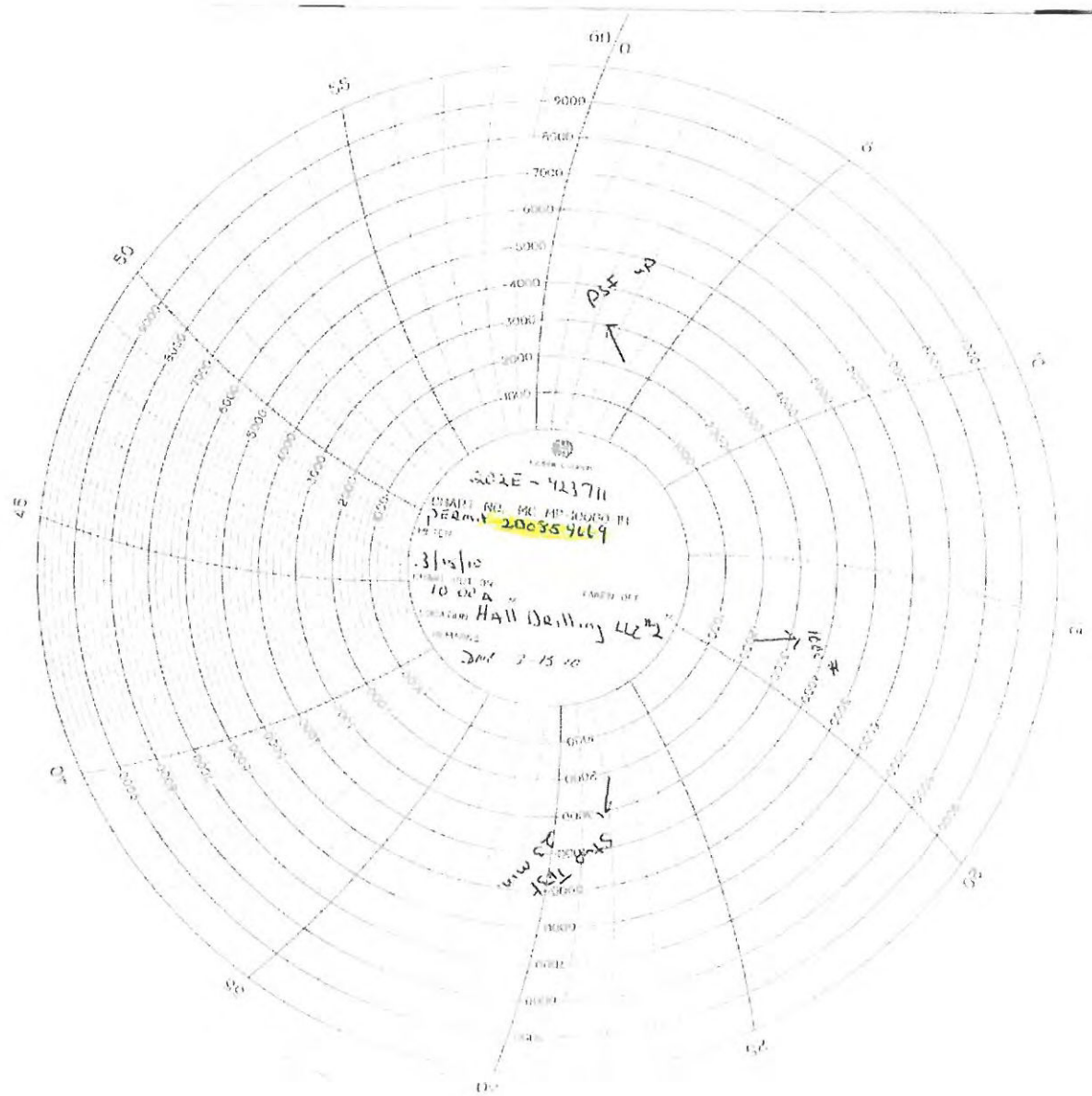
3/15/2010
Date

THIS WELL IS AUTHORIZED FOR INJECTION.

Signed James Peterson UIC PROGRAM DIRECTOR
Date 3/18/10

[NOTE: That the mechanical integrity of this well must be demonstrated again within ninety (90) days of five years from this date in order for injection to continue. Please notify the state inspector 24 hours in advance of the test].

Hall Drilling LLC
Well Operator
By: TERRY Wyckoff
Its Field Supervisor



WR-37
REV. 5/01

Date: March 15, 2010

Operator's Well Number 42

State County Permit
API Well No.: 47-085-09669
UIC 200859669

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENT-OFFICE OF OIL AND GAS
PRE-OPERATION CERTIFICATE
FOR LIQUID INJECTION OR WASTE DISPOSAL WELL

WELL OPERATOR Hall Drilling LLC
Address PO Box 249
Ellenboro WV 26034

DESIGNATED AGENT TERRY WYCKOFF/M. KE HALL
Address PO Box 249
Ellenboro WV 26034

GEOLOGICAL TARGET FORMATION MARCELLUS Depth 6164 feet(top) to 6250 feet(bottom)

Virgin reservoir pressure in target formation _____ psig

Source of information on virgin reservoir pressure: _____

Perforation intervals _____

Open-hole intervals _____

MAXIMUM PERMITTED INJECTION OPERATIONS

Well head injection pressure: _____ psig

Bottom hole pressure: _____ psig

Volume per hour: _____

DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED

Liquids to be injected for oil recovery: _____

Wastes to be disposed of: MARCELLUS AND FORMATION ABOVE TO INJECT WATER

Additives (Slurry mediums, inhibitors, solvents, oxidizers, deoxidizers, etc.) _____

SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL Lined 2 7/8
Control Pipe with insulators

ADDITIONAL DRILLING AS PART OF THE CONVERSION (Complete form WR-35)

DETAILS ON NEW CASING AND TUBING PROGRAM AS PART OF THE CONVERSION (To be completed below unless the new casing and tubing program is described on a form WR-35, submitted in connection with the permit to which this form WR-37 relates.)

CASING OR TUBING TYPE	SIZE	GRADE	WEIGHT PER FT.	NEW	USED	FOOTAGE USED IN DRILLING	FOOTAGE LEFT IN WELL	CEMENT USED	PACKERS (KIND, SIZE, DEPTH SET)
CONDUCTOR									
FRESH WATER	<u>9 5/8</u>		<u>22</u>	<u>X</u>		<u>130</u>	<u>130</u>		
COAL									
INTERMEDIATE	<u>7</u>		<u>16</u>	<u>X</u>		<u>1842</u>	<u>1842</u>		
PRODUCTION	<u>4 1/2</u>		<u>11.60</u>	<u>X</u>		<u>6263</u>	<u>6263</u>		
TUBING	<u>2 7/8 upset</u>		<u>6.5</u>	<u>X</u>		<u>6164</u>	<u>6164</u>	<u>on Packee</u>	<u>6164</u>
LINERS									

*MIT conducted 3/15/10
pressured backside for
23 minutes - Passed
Witness: David Cowan

Arrowset 1-X
Mechanical Production
Packee



RELIANCE LABORATORIES, INC.

ENVIRONMENTAL ANALYSTS AND CONSULTANTS

BRIDGEPORT, WV

www.RelianceLabs.net

MARTINSBURG, WV

Certifications:

WV Department of Health #: 00354, 00433 | WV Department of Environmental Protection #: 158, 181
MD Department of Environment #: 336, 337 | US Environmental Protection Agency #: WV00042, WV00901

HALL DRILLING
981 E. WASHINGTON AVE.

Wednesday, April 10, 2013

Page 3 of 3

ELLENBORO, WV 26346

Lab Number: 193161-2013-W Sample ID: TECH SERVICE CENTER 3H

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
Analyte Group: Total Petroleum Hydrocarbons							
TPH - DRO	ND	mg/l	8015B/3535	3/26/2013	11:24 M.Coffman	1	
TPH - ORO	20.9	mg/l	8015B/3535	3/26/2013	11:24 M.Coffman	1	
o-Terphenyl (Surrogate)	81.3	%	8015B	3/26/2013	11:24 M.Coffman		
Benzene	0.1421	mg/l	8021B/5030	3/25/2013	13:56 M.Coffman	0.0007	
Ethylbenzene	0.0297	mg/l	8021B/5030	3/25/2013	13:56 M.Coffman	0.0014	
Toluene	0.3129	mg/l	8021B/5030	3/25/2013	13:56 M.Coffman	0.002	
TPH - GRO	23.7	mg/l	8015B/5030	3/25/2013	11:54 M.Coffman	0.12	
Xylene	0.4075	mg/l	8021B/5030	3/25/2013	13:56 M.Coffman	0.003	
4-Bromochlorobenzene (Surrogate)	99.1	%	8021B/8015B	3/25/2013	13:56 M.Coffman		

Remarks:

Date Sample Collected: 3/20/2013 11:00
Sample Submitted By: J. STRICKLER
Date Sample Received: 3/20/2013 14:25

ND = Not Detected at the MDL or MRL

MDL - Minimum Detectable Limit

MCL - Maximum Contaminant Level, USEPA Regulated

MRL - Minimum Reporting Limit

[MCL] = Maximum Contaminant Level, Non-Regulated

*Method Code: STANDARD METHODS 19TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.

NOTE: #Holding time exceeded for this analysis.

Received
Office of Oil & Gas

MAR - 6 2013

RL1001



Hall Drilling LLC / Hall & Ross Resources
981 E. Washington Ave.
Ellenboro, WV 26346
Office: 304.869.3404
Cell: 304.588.1057

June 7, 2013

James A. Peterson
WV Dept. of Environmental Protection

Dear Mr. Peterson

This letter is to request modification of the UIC well permit #2D0859669 to allow commercial third-party transport of disposal fluids.

A handwritten signature in blue ink, appearing to read "Michael T. Hall", written over a horizontal line.

Regards,

Michael T. Hall
President
Hall Drilling LLC



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.wvdep.org

June 14, 2013

HALL DRILLING, LLC
P O BOX 249
ELLENBORO, WV 26346-

Re: Underground Injection Control (UIC)
Permit #UIC2D0859669

Dear Applicant:

Your application for the referenced Underground Injection Control (UIC) Permit has been reviewed and found to be complete. Please find enclosed a **draft UIC permit and a public notice** which are prescribed by Title 47, Series 13, Section 13.24 issued pursuant to WV Code Chapter 22, Article 11 and 12. You are required to have this notice published in its entirety, as a Class I legal advertisement in the **THE PENNSBORO NEWS** on 6/21/2013.

Upon publication, you are required to send a copy of the certificate of publication to:

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Attn: James Peterson, Regulatory/Compliance Manager

The cost of publication is also your responsibility.

If no comments are filed during the thirty (30) day commenting period for the public notice, a permit may be issued. If you have any questions, feel free to call me at (304) 926-0499 ext. 1653.

Sincerely,

James Peterson
Regulatory/Compliance Manager

Enclosures as stated

PUBLIC NOTICE

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0450
Fax: (304) 926-0452

Re: UIC Permit Application
UIC2D0859669

APPLICATION FOR STATE UNDERGROUND INJECTION CONTROL PERMIT

Public Notice Number: UIC-2013-008

Paper:

THE PENNSBORO NEWS
POST OFFICE BOX 368
PENNSBORO, WV 26415-0368

Public Notice Date: June 21, 2013.

The following applicant has applied for a State Underground Injection Control (UIC) Permit for this facility or activity:

Applicant:
HALL DRILLING, LLC
P O BOX 249
ELLENBORO, WV 26346

Application Number: UIC2D0859669
Business Conducted: Oil and/or natural gas production.

Location: On the waters of Hushers Run in Clay District of Ritchie County, Approximate location Utm North 4348670.1922 and Utm East 498841.76

Activity: Modification of an Underground Injection Control (UIC) permit to allow for third party haulers to deliver Class II fluids to commercial disposal well.

The state of West Virginia will act on the above application in accordance with the West Virginia Legislative Rules, Title 47, Series 13, Section 13.24 issued pursuant to Chapter 22, Article 11&12.

Any interested person may submit written comments on the draft permit and may request a public hearing within 30 days of the date of this public notice. Such comments or requests should be addressed to:

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Attn: James Martin

Comments received within this period will be considered prior to acting on the permit application. Correspondence should include the name, address, and telephone number of the writer and a concise statement of the nature of the issues raised. A public hearing may be held if the Chief considers significant the degree of public interest raised on issues relevant to the draft permit.

Interested persons may contact the person identified above at (304) 926-0450 to obtain further information.

The application, draft permit, and any required fact sheet are on file and may be inspected, by appointment, or copies obtained, at a nominal cost, at the Office of Oil and Gas, 601 57th Street SE, Charleston, WV 25304, between 8:00 a.m. and 4:00 p.m. on business days.

INVOICE AND AFFIDAVIT OF PUBLICATION



The Pennsboro News

103 North Spring Street,
P.O. Box 241, Harrisville, WV 26362
Ph. 304.643.4947 • Fax 304.643.4717

WEST CENTRAL PUBLISHING
FEDERAL I.D. NO. 55-06700561
STATE OF WEST VIRGINIA
COUNTY OF RITCHIE, to wit:

I, James McGoldrick, being first duly sworn upon my oath, do depose and say:

- that I am Publisher of The Pennsboro News, a Democratic newspaper,
- that I have been duly authorized to execute this affidavit,
- that such newspaper is regularly published weekly for at least fifty weeks during the calendar year, in the municipality of Harrisville, Ritchie County, West Virginia.
- that such newspaper is a newspaper of "general circulation" as defined in Art. 3, Chap. 59 of the Code of West Virginia 1931 as amended, within Ritchie County;
- that such newspaper averages in length four or more pages, exclusive of any cover, per issue;
- that such newspaper is circulated to the general public at a definite price or consideration;
- that such newspaper is a newspaper to which the general public resorts for passing events or a political, religious, commercial and social nature and for current happenings, announcements, miscellaneous reading matters, advertisements and other notices;
- and that the annexed notice described as follows:

Public Notice - Hall Drilling

WAS PUBLISHED IN SAID NEWSPAPER AS FOLLOWS:

TIMES DATES

One June 26, 2013

PUBLICATION
CHARGES

\$85.39

CERTIF-BILL TO

Attn: Susan Baldwin
Hall & Ross Resources
981 E. Washington Ave
Ellenboro, WV 26346

(signed)

NOTARIZATION

Taken, sworn to and subscribed before me this

26th

day of June

, 20 13

Charlott C. Stine

Notary Public



OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
CHARLOTT C. STINE
115 PINE GROVE RD.
ST. MARYS, WV 26170
My Commission Expires November 18, 2013

PLEASE RETURN A COPY OF THIS
INVOICE WITH YOUR PAYMENT TO:
P.O. BOX 241, HARRISVILLE, WV 26362

PUBLIC NOTICE

West Virginia Department of Environmental
Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Phone: 304.926.0450
Fax: 304.926.0452

Re: UIC Permit Application
UIC 2D0859669

APPLICATION FOR STATE UNDERGROUND INJECTION CONTROL PERMIT

Public Notice Number: UIC-2013-008
Public Notice Date: June 21, 2013

Paper:
The Pennsboro News
Post Office Box 368
Pennsboro, WV 26415-0368

The following applicant has applied for a State
Underground Injection Control (UIC) Permit for this
facility or activity:

Applicant:
HALL DRILLING, LLC
P O BOX 249
ELLENBORO, WV 26346

Application Number: UIC2D0859669
Business Conducted: Oil and/or natural gas production.

Location: On the waters of Hushets Run in Clay District
of Ritchie County, Approximate location Utm North
4348670.1922 and Utm East 498841.76

Activity: Modification of an Underground Injection
Control (UIC) Permit to allow or third party haulers to
deliver Class II fluids to commercial disposal well.

The state of West Virginia will act on the above
application in accordance with the West Virginia
Legislative Rules, Title 47, Series 13, Section 13.24
issued pursuant to Chapter 22, Article 11&12.

Any interested person may submit written comments
on the draft permit and may request a public hearing
within 30 days of the date of this public notice. Such
comments or requests should be addressed to:

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Attn: James Martin

Comments received within this period will be
considered prior to acting on the permit application.
Correspondence should include the name, address and
telephone number of the writer and a concise statement
of the nature of the issues raised. A public hearing
may be held if the Chief considers significant the
degree of public interest raised on issues relevant to
the draft permit.

Interested persons may contact the person identified
above at 304.926.0450 to obtain further information.

The application, draft permit, and any required fac
sheet are on file and may be inspected, by
appointment, or copies obtained, at a nominal cost, at
the Office of Oil and Gas, 601 57th Street SE,
Charleston, WV 25304, between 8:00 a.m. and 4:00
p.m. on business days.

Received

3 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

**UIC PERMIT NO. UIC2D0859669
WELL NO. Hall Drilling, LLC #2
(Permit Modification)**

**UNDERGROUND INJECTION CONTROL PERMIT
FOR
DEPARTMENT OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS AND DIVISION OF WATER AND WASTE MANAGEMENT
FOR
CLASS II COMMERCIAL DISPOSAL WELL**

This document consists of the Underground Injection Control (UIC) Permit required by the Department of Environmental Protection, Office of Oil and Gas, and Division of Water and Waste Management. The permittee is allowed to engage in underground injection in accordance with the terms and conditions of this permit based upon an approved UIC Permit.

The Underground Injection Control Permit No. **UIC2D0859669** consists of Forms WW-3A and WW-3B and the terms and conditions below:

1. The underground injection activity authorized by this permit shall not allow the movement of fluid, as per (47CSR13-2.26), containing any contaminant into any subsurface area other than that which is specified and may not cause a violation of any primary drinking water regulation promulgated under 40 CFR Chapter 1, Part 141 or any water quality standard promulgated by the Department of Environmental Protection.
2. This permit is issued in accordance with the provisions of Article 11 and 12, Chapter 22 of the Code of West Virginia and the Legislative Rule 47CSR13.
3. All reports required by this permit shall be submitted to the Office of Oil and Gas with the exception to paragraph 4 below.
4. The following activities require the immediate cessation of facility operations and prompt notification of the Director of Water and Waste Management (47CSR13-13.6.d and 47CSR13-13.12.1.6).
 - a) Any monitoring or other information which indicates that any contaminant has caused or may cause an endangerment to an underground source of drinking water;
 - b) Any non-compliance with a permit condition or any malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water; and
 - c) Any non-compliance which may endanger health and environment.

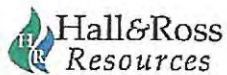
5. This permit is for authorization of injection of only fluids as defined for Class II wells in 47CSR13-4.2. The fluids to be injected shall only be from those sources listed in the permit application. Additional sources of fluids may be approved upon written request by the permittee.
6. The permit must satisfy the requirements of the Office of Oil and Gas regarding any corrective action needed on all known wells penetrating the injection zone within the area of review.
7. Any production well within a ¼ mile radius of disposal well# 47-85-09669 which does not have cemented production casing shall be plugged immediately upon becoming inactive. Any temporarily inactive well shall be monitored at a frequency and by a method prescribed by the Office of Oil and Gas upon notice by the permittee of such activity. Any well shut-in more than one (1) week shall be considered inactive.
8. The area of review is designated as a 1 / 4 mile radius around the injection project.
9. This permit approves the Marcellus formation for injection from 6,164' to 6,250'.
10. The maximum wellhead injection pressure shall be established at 1995 PSI.
11. The permittee shall provide for security at the injection facility to guard against illegal or unauthorized dumping and injection at the injection facility.
12. The permittee shall monitor the 2 7/8" X 4 1/2" and 4 1/2" X 7" casing annuli with pressure sensitive devices or with such a method as approved or required by the Office of Oil and Gas to allow early detection on any leaks from the injection zone or casing. The results of such monitoring shall be reported on Form WR-40.
13. Authorization to inject is contingent upon submission and approval of the Office of Oil and Gas Form WR-37 for each well. Construction modifications from the proposed work plan (O&G Form WW-3) and mechanical integrity will be evaluated at this time. Operational conditions will be finalized at this time. Upon approval of Form WR-37, conditions established on this form are incorporated by reference as conditions of this permit. FORM WR-37 SHALL BE SUBMITTED WITHIN 30 DAYS OF THE EFFECTIVE DATE OF THE UIC PERMIT. A mechanical integrity test must be performed at least once every five years per 35CSR4-7.7.b.
14. If a mechanical integrity test should fail, the permittee shall cease operation/injection and shut-in the well immediately until repaired or permanently plugged and abandoned per regulation. The well must be repaired or permanently plugged within 90 days of the failure date. If repaired, the well must be re-tested making sure to submit a WR-37 Form to the Office of Oil and Gas. The Office of Oil and Gas should be notified 24 hours in advance of the re-test date to witness said test.
15. A well head pressure gauge shall be installed and maintained on the injection tubing / casing to facilitate inspection and ensure compliance of maximum injection pressures as approved on Oil and Gas Form WR-37. A daily reading of the injection pressure shall be taken and reported monthly on Form WR-40 to the Office of Oil and Gas.

25. Permittee or third party hauler(s) may transport UIC Class II fluids to the disposal well.
26. Permittee must ensure that a monthly composite / representative fluid sample is taken from water brought to the facility to be injected into disposal well API#85-09669 from each operator and associated wells testing for pH, Iron, Manganese, Chlorides, Sodium, Sulfate, TDS, TOC, and Barium. Each sample must list the formation(s) that the water originated from. Test results must be submitted to the Office of Oil and Gas.

ATTACHMENT A

Injection Fluid Analyses Parameters

<u>Parameter</u>	<u>Ranges</u>
PH	>2 – 10
TDS	0 - 265,000 mg/l
TSS	0 - 1000 mg/l
Aluminum	0 - 10 mg/l
Arsenic	0 – 10 mg
Barium	0 – 1500 mg/l
Cadmium	0 – 2 mg/l
Chromium	0 – 1 mg/l
Iron	0 – 1000 mg/l
Lead	0 – 7.5 mg/l
Magnesium	0 – 5000 mg/l
Manganese	0 – 15 mg/l
Potassium	0 – 5000 mg/l
Sodium	0 – 110,000 mg/l
Zinc	0 – 15 mg/l
Surfactants	0 – 10 mg/l
TKN	0 – 25 mg/l
Oil and Grease	0 – 100 mg/l
TOC	0 – 10,000 mg/l
COD	0 – 30,000 mg/l
Acidity	0 – 500 mg/l
Chloride	0 – 250,000 mg/l
Sulfate	0 – 500 mg/l
Cyanide	0 – 1 mg/l
Phenols	0 – 10 mg/l
Calcium	0 – 60,000 mg/l
BNA – Extractables	Trace
Purgeable Aromatics	Trace
Purgeable Halocarbons	Trace
PCBs	<MDL or 50 ppm
TPHs (ORO, DRO, GRO)	
NORM	



Hall Drilling LLC / Hall & Ross Resources
981 E. Washington Ave.
Ellenboro, WV 26346
Office: 304.869.3404
Cell: 304.588-1468

July 2, 2013

James Peterson
Regulatory/Compliance Manager
Office of Oil & Gas
601 57th Street SE
Charleston, WV 25304

Dear Jamie:

Please find enclosed the affidavit of publication for the UIC injection well notice. Let me know if you need additional information.

Sincerely,

Susan Baldwin
Hall Drilling LLC

Received

JUL 3 2013

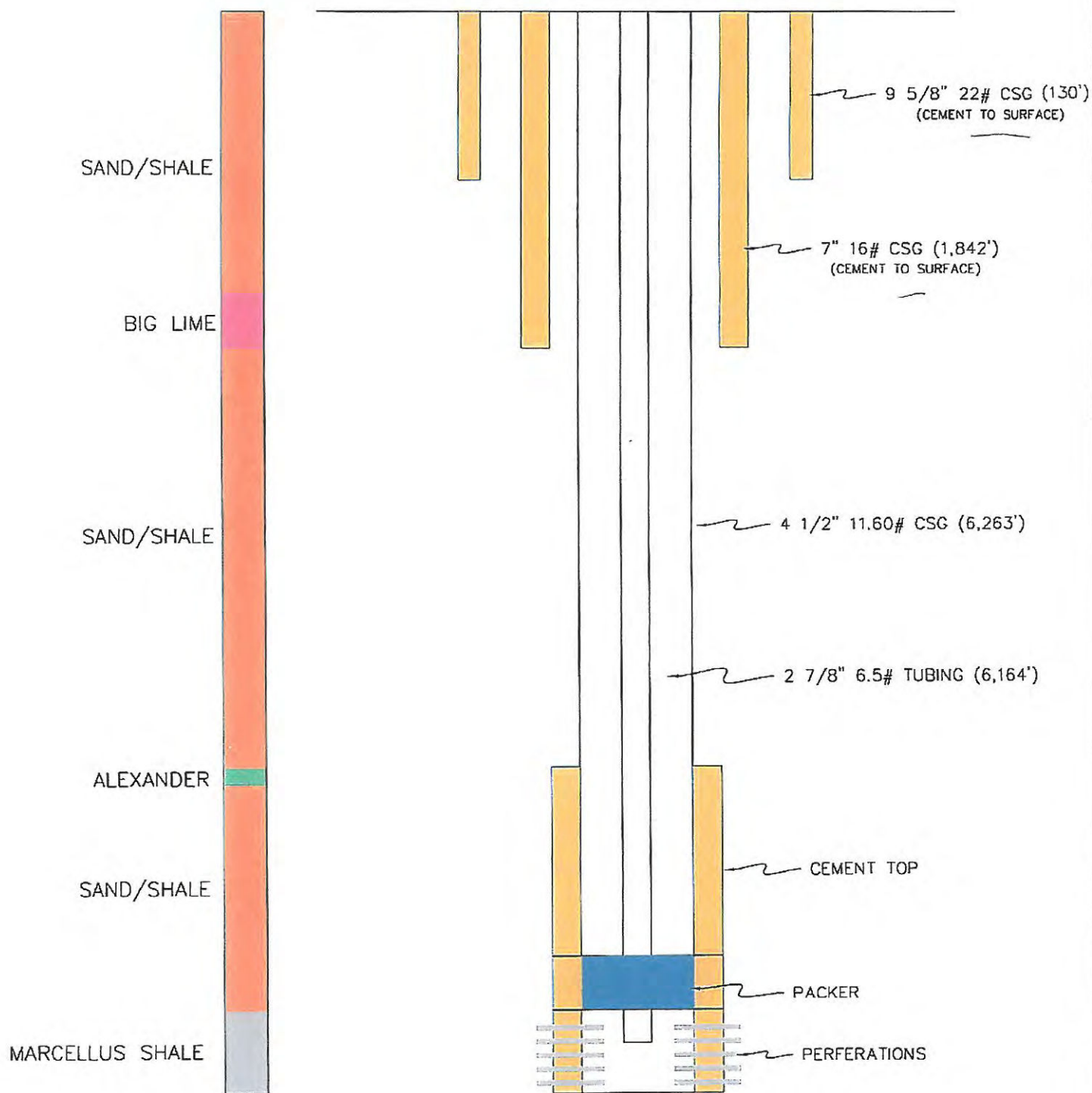
Office of Oil and Gas
WV Dept. of Environmental Protection

- Date - other - permit m-d required
- Date modified
- New fn

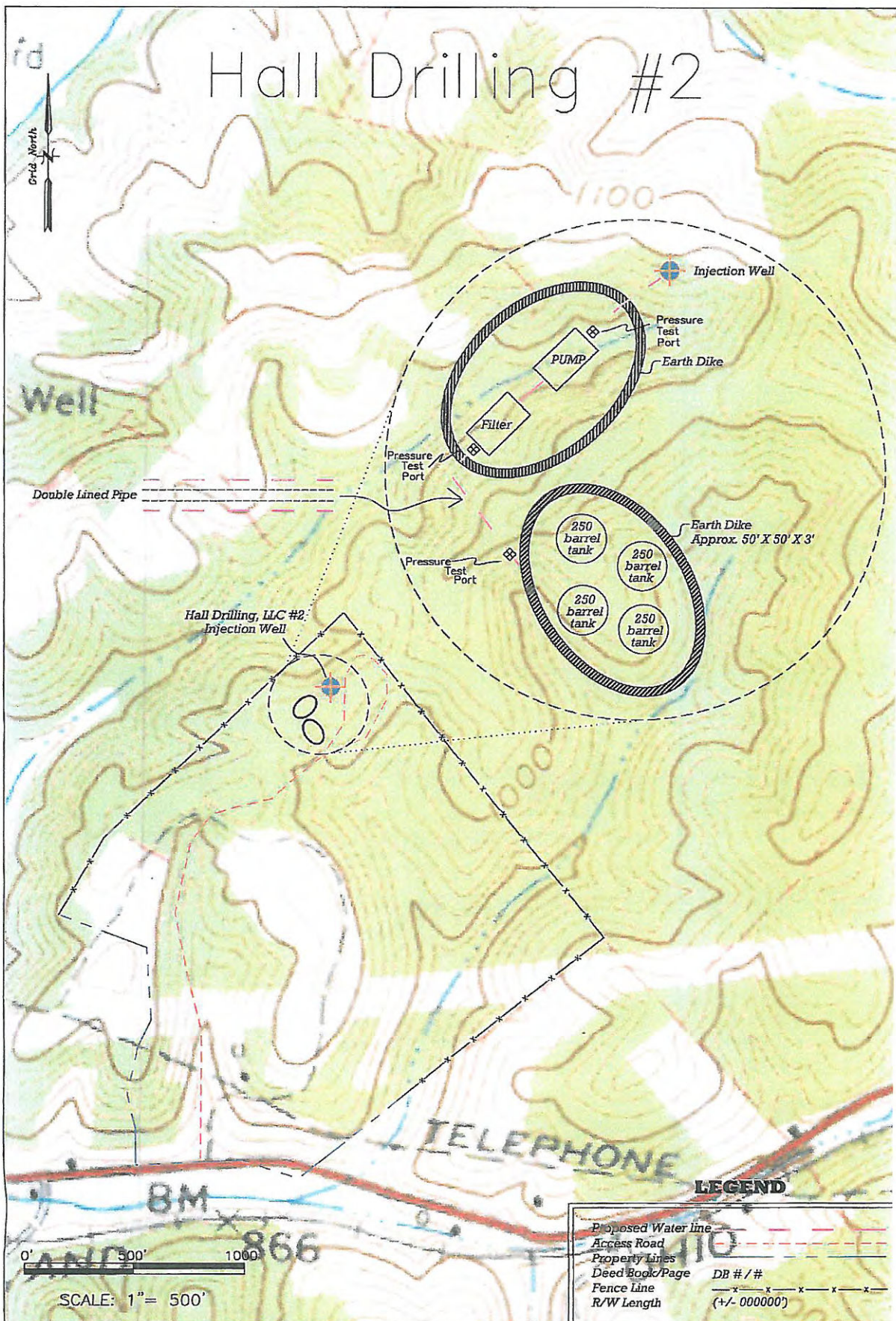
All M-D. F UIC permit. All
 third party hauler to deliver class II
 FLiDs to the already permitted
 commercial disposal wif


Sulf	✓ pH
TDS	✓ Iron
	✓ Mn
	✓ Cl
	✓ Na
	✓ Ba
	✓ T-c

HALL DRILLING #2

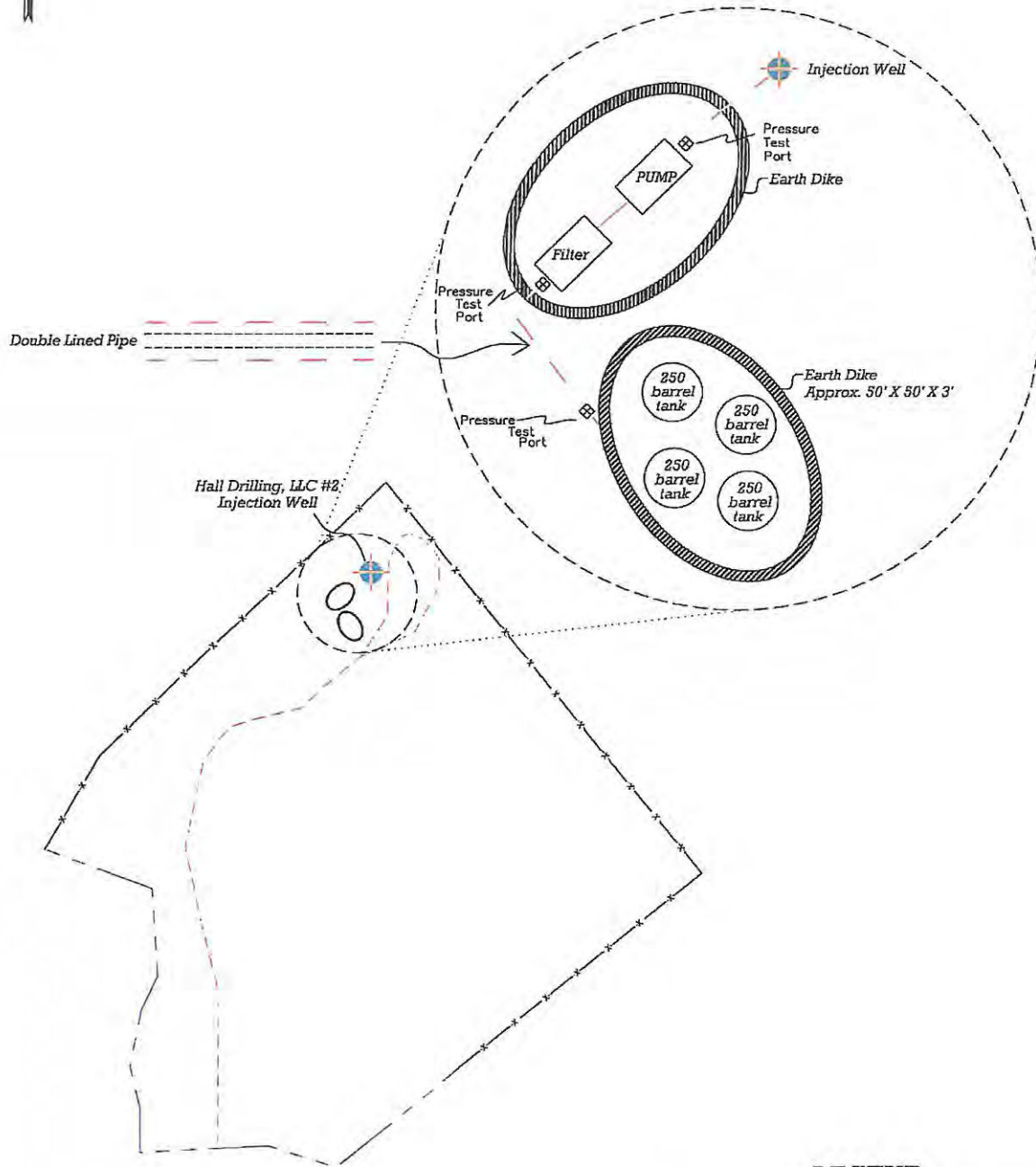


Hall Drilling #2



 BLUESTONE ENERGY PARTNERS	HALL DRILLING, LLC INJECTION WELL TOPD SECTION: Ellenboro 7.5' DISTRICT: Clay WATERSHED: Hushers Run	DWG: HallDrilling#2 TAX MAP: COUNTY: Ritchie DRAWN BY: Thomas Wince, PS	DATE: 11/16/09 PARCEL: STATE: WV
--	--	--	--

Hall Drilling #2



0' 500' 1000'

SCALE: 1" = 500'

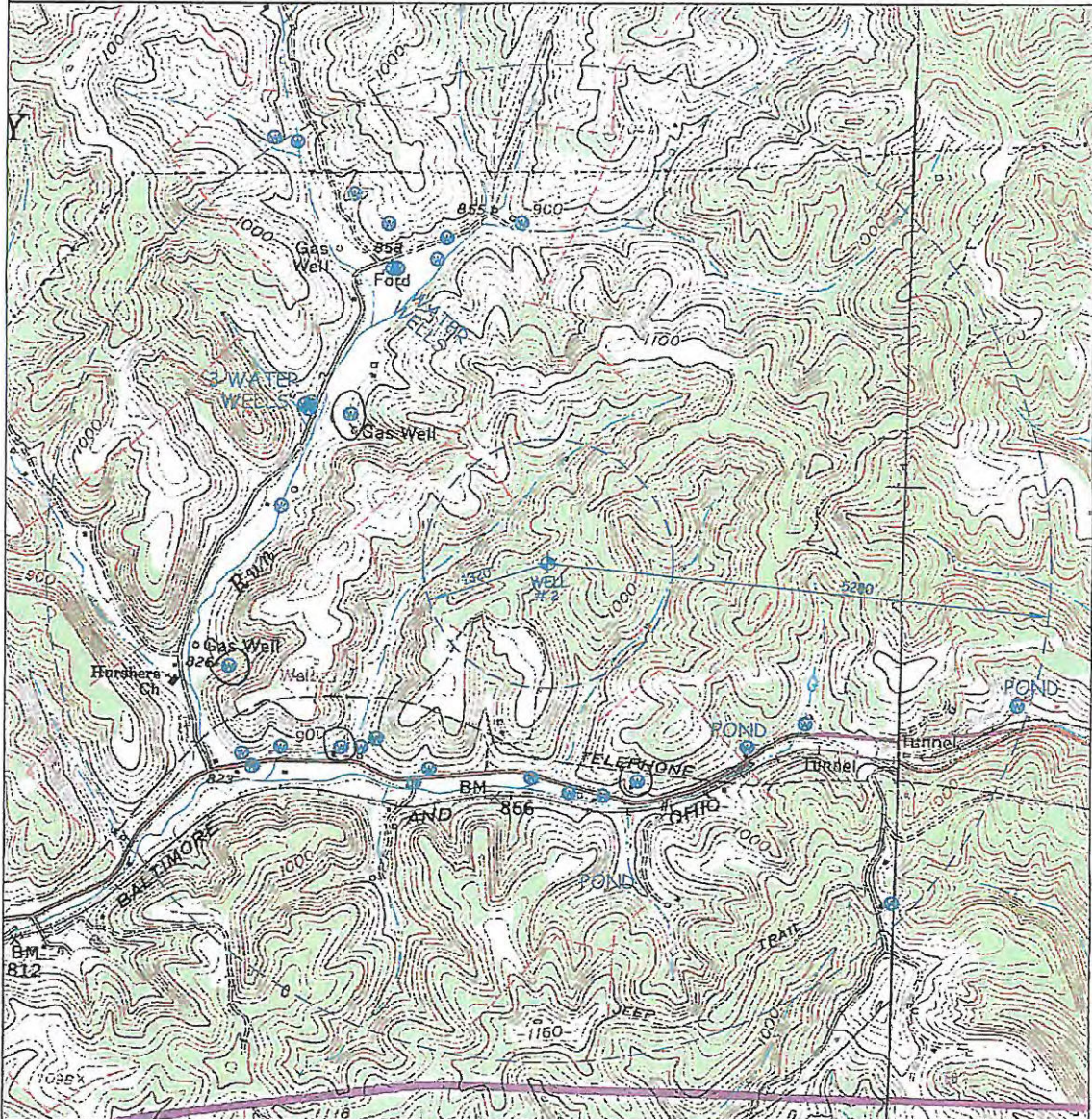
LEGEND

Proposed Water line	—
Access Road	—
Property Lines	—
Deed Book/Page	DB # / #
Fence Line	— x — x — x — x —
R/W Length	(+/- 000000')



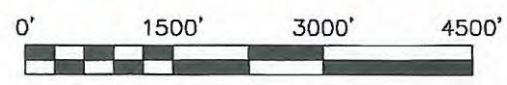
HALL DRILLING, LLC INJECTION WELL	DWG: HallDrilling#2	DATE: 11/16/09
TOPO SECTION: Ellenboro 7.5'	TAX MAP:	PARCEL:
DISTRICT: Clay	COUNTY: Ritchie	STATE: WV
WATERSHED: Hushers Run	DRAWN BY: Thomas Wince, PS	

WELL # 2 HALL DRILLING, LLC INJECTION WELL

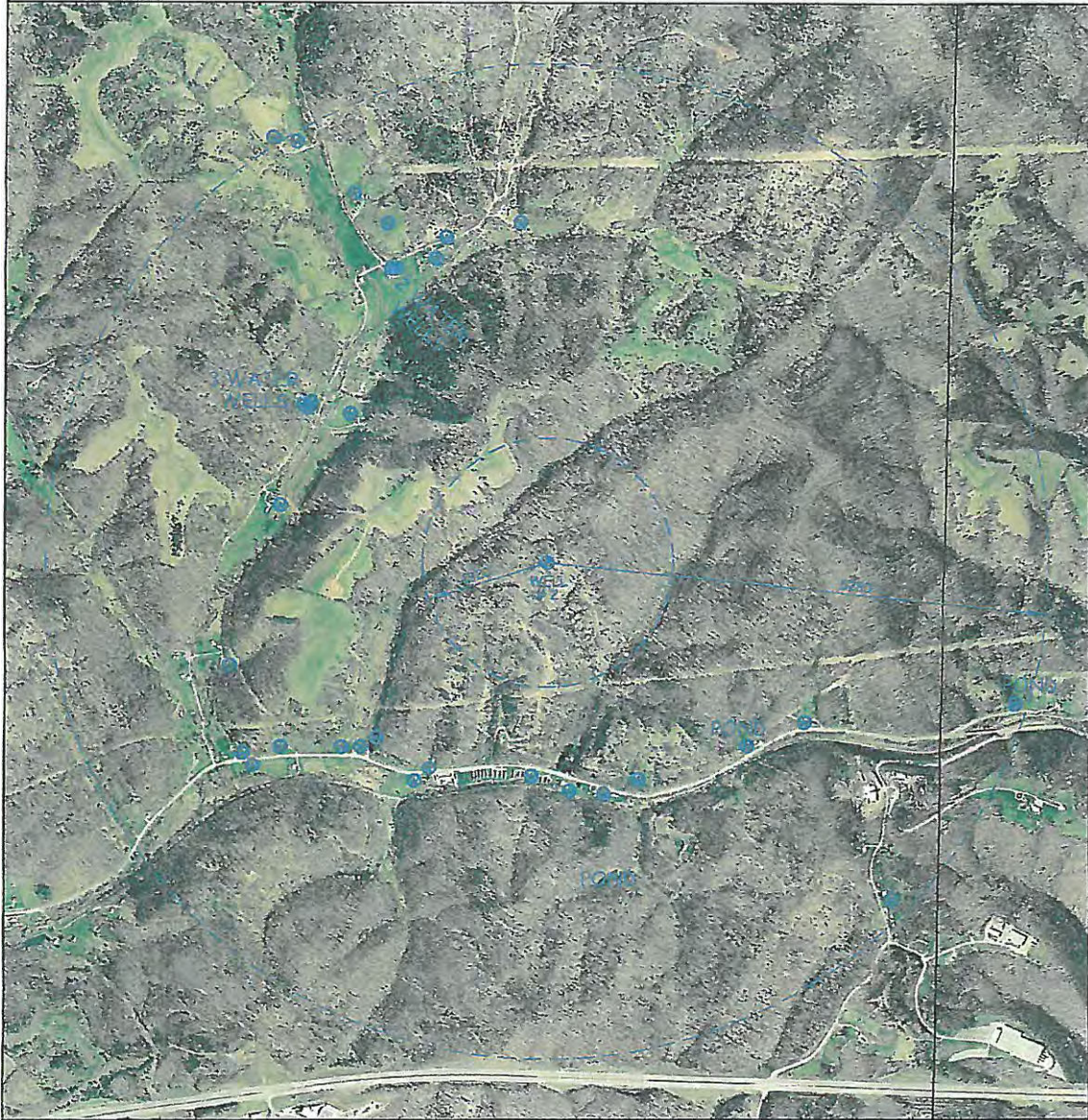


- LEGEND
- OR WW = WATER WELL
 - OR WW'S = WATER WELL'S
 - OR SPRING = SPRING
 - PROPOSED INJECTION WELL

TOPO SECTION IN ELLENBORO 7.5'
JOB # 09-093 9/24/09 1" = 1500'



WELL # 2 HALL DRILLING, LLC INJECTION WELL



LEGEND

- ⊙ OR WW = WATER WELL
- ⊙ OR WW'S = WATER WELL'S
- ⊙ OR SPRING = SPRING
- ⊕ PROPOSED INJECTION WELL

TOPO SECTION IN ELLENBORO 7.5'
JOB # 09-093 9/24/09 1" = 1500'



Geologic Description

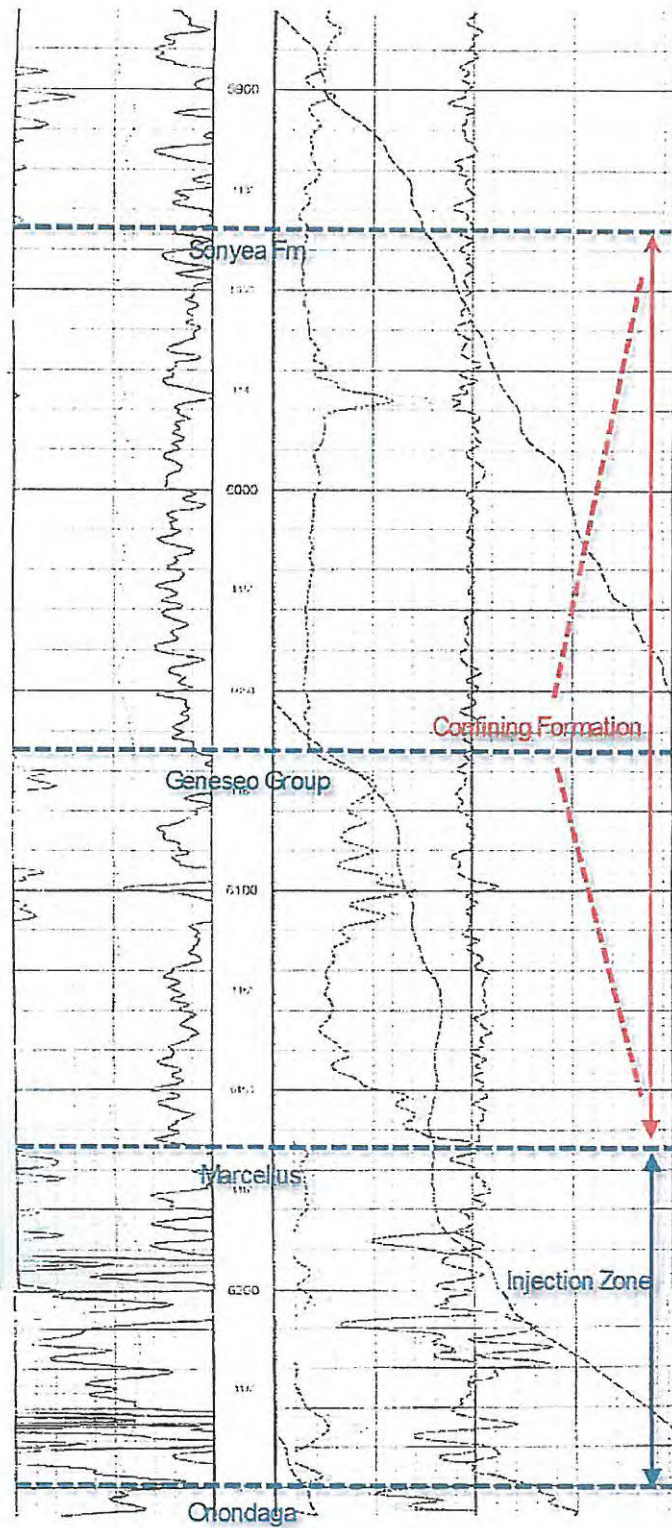
Proposed Injection Zone – Marcellus Shale

The Marcellus shale is a radioactive, organic, black shale facies of the Middle Devonian Hamilton group. In the proposed well this interval is 96 feet thick. In Ritchie County the interval ranges from 30 to ~100' thick. This interval generally exhibits higher GR readings in excess of 200 API units, resistivity in excess of 100 ohms, and porosity calculates in excess of 10% over most of the interval due in part to the high kerogen content which impacts the density reading.

Confining Zone - Geneseo group/ Sonyea Formation

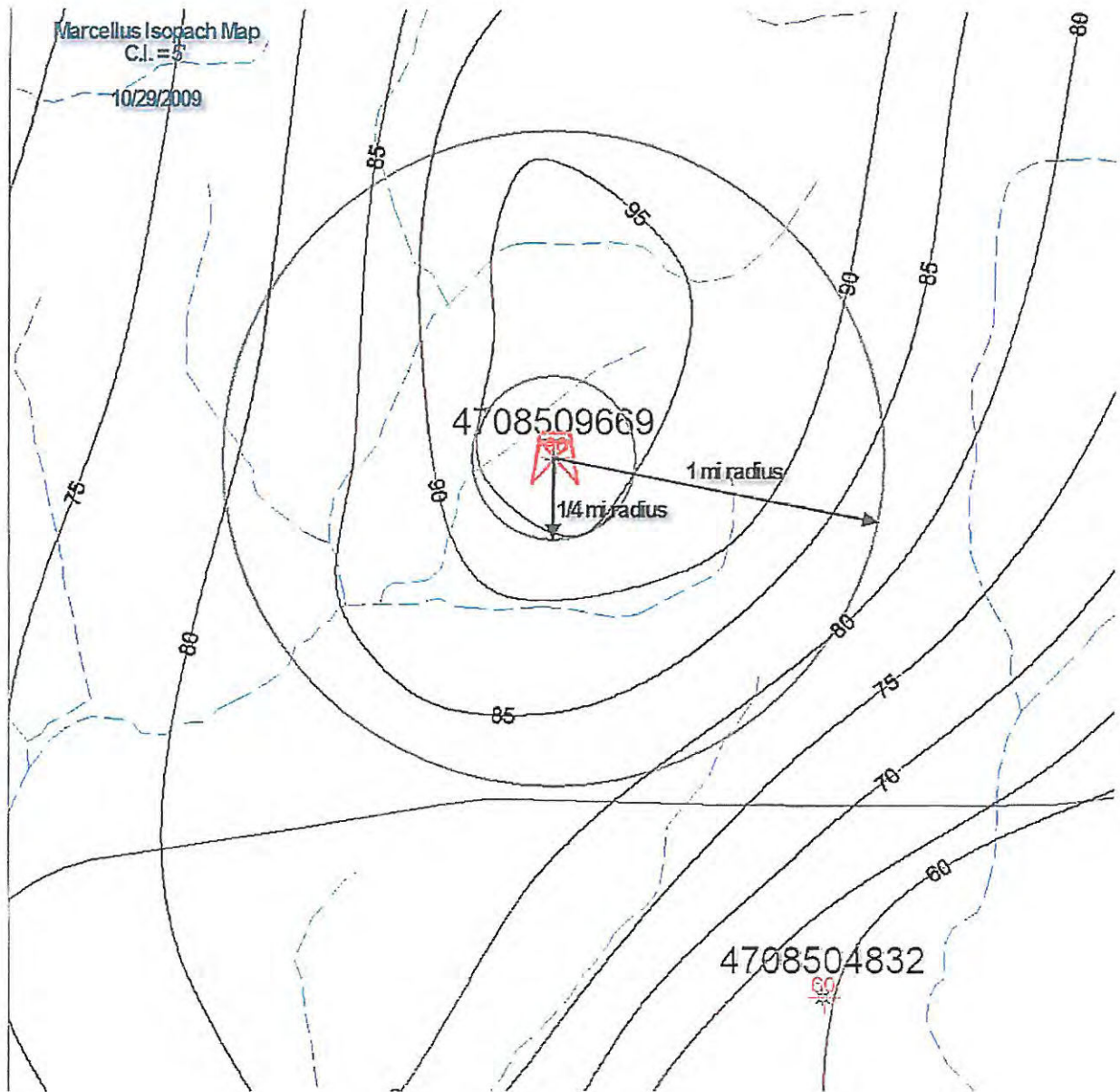
The confining zone includes interbedded gray shales, silty shale and siltstones of the Upper Devonian age Middlesex and Geneseo groups. These intervals are much less organic than the Marcellus. These two gray shale intervals together are approximately 250 feet thick in the proposed well. This interval should have a higher stress profile than the underlying Marcellus as is typical seen in logs to the east, because of the higher quartz content and lower organic content.

Electric Log section attached on next page.

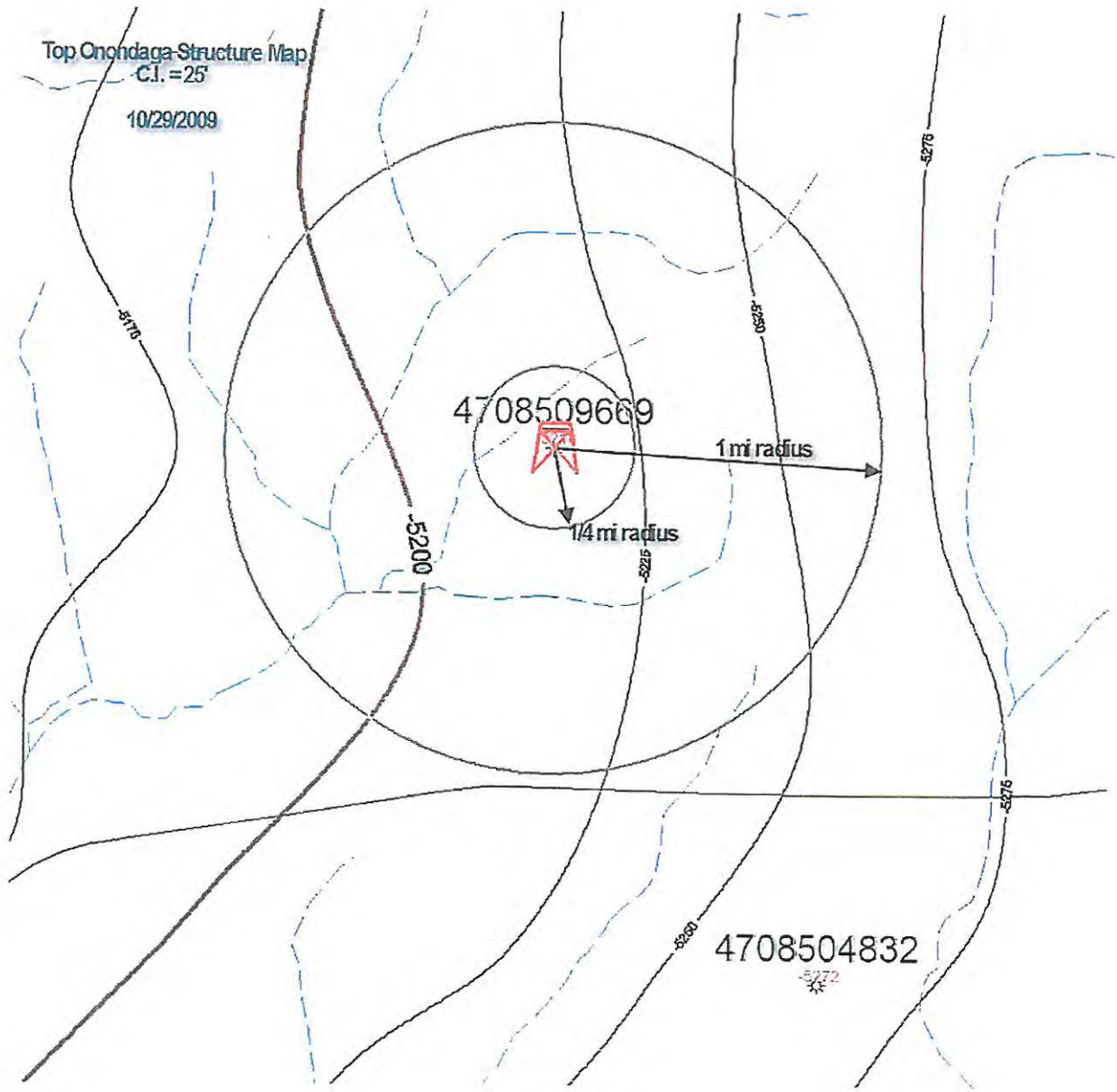


Proposed Injection Well
4708509669
Mary Shanley 6A

Thickness Map



Structure Map



Peterson, James A

From: Peterson, James A
Sent: Friday, July 13, 2012 1:23 PM
To: 'Terry Wyckoff (twyckoff@anteroresources.com)'
Subject: Hall UIC

Terry, I stopped by the site on Tuesday. I see the new (second) well is drilled but not the lateral yet.

One thing I noticed that needs corrected:

Two tanks (ASTs) next to the pond area that were not there before. The tanks need to be either removed or diked within a fenced area.

Any questions just let me know.

Thanks.

UIC - IR - 1
June 08, 2011

API: 47- 8509669
UIC Permit ID: 2D0859669
UIC Permit #: 1

WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION
SECTION OF OIL AND GAS
UNDERGROUND INJECTION CONTROL PROGRAM

UIC ROUTINE INSPECTION FORM

Operator: HALL DRILLING, LLC
Farm Name: TECH SERVICE CENTER
Well Number: SHANLEY 6A

WELL DATA

County:	Ritchie	Latitude:	39° 17 min 30 sec 885 feet
District:	Clay	Longitude:	-81° 0 min 0 sec 3715 feet
Quad Number:	337	Quad Name:	ELLENBORO
Well Status:	Active Well	Well Status:	<u>Active</u>
Well Use Type:	Liquid Injection	Date of Last Inspection:	Mar 15, 2010
Fluid Type:			

Comments:

Elevation: 1037 feet

Fresh water Casing:

Injection Casing:

Injection Formations:

MIT Test Type: Annulus pressure passed

MIT Test Date: Mar 15, 2010

WELL OPERATION

Surface Injection Pressure:	Psi	Gauged:	<u>Electronic and</u>
Injection Rate:	Barrels/Hr.	Observed:	<u>Manual</u>
Annulus Monitoring:	Size: <u>2 1/2</u>	Size:	<u>4 1/2</u>
Flow or Pressure:	<u>No Flow</u>		<u>No Pressure</u>

COMMENTS:

- Ready to start injection
- 2 pond / impoundments on location to settle out solids / recycle water
- Road has a slip

Signed:

James Peterson
District Oil and Gas Inspector

Date:

6/8/11

Hall Drilling, LLC - List of wells that have water hauled into Injection Well

List updated 7/28/11

Well Name	Formation	API
Ash Unit 2H	Marcellus Shale	47033053820000
Bailey Unit 2H	Marcellus Shale	47033053270000
Bland Unit 1H	Marcellus Shale	47033053900000
Bland Unit 2H	Marcellus Shale	47033053910000
Bogges Unit 1H	Marcellus Shale	47033054400000
Bogges Unit 2H	Marcellus Shale	47033054390000
Booher #4	Marcellus Shale	47017056930000
Davis #1	Marcellus Shale	47033050130000
Fairmont Fuel Unit 1H	Marcellus Shale	47033054700000
Fairmont Fuel Unit 2H	Marcellus Shale	47033054450000
Flowers Unit 2H	Marcellus Shale	47033053870000
Flowers Unit 3H	Marcellus Shale	47033053880000
Fortney Unit 1H	Marcellus Shale	47033053860000
Fortney Unit 2H	Marcellus Shale	47033053930000
Francis Unit 1H	Marcellus Shale	47033053390000
Francis Unit 2H	Marcellus Shale	47033054790000
Gerrard Unit 1H	Marcellus Shale	47033054290000
Gerrard Unit 2H	Marcellus Shale	47033054300000
Hall #1	Marcellus Shale	47085096720000
Hall #2	Marcellus Shale	47085096360000
Haney Unit 1H	Marcellus Shale	47033054270000
Haney Unit 2H	Marcellus Shale	47033054280000
Haymond NW Unit 2H	Marcellus Shale	47033052360000
Haymond NW Unit 3H	Marcellus Shale	47033052370000
Haymond NW Unit 4H	Marcellus Shale	47033052380000
Haymond NW Unit 5H	Marcellus Shale	47033052390000
Haymond Unit 1H	Marcellus Shale	47033053030000
Haymond Unit 2H	Marcellus Shale	47033053040000
Hill Unit 1H	Marcellus Shale	37125238480000
Hill Unit 2H	Marcellus Shale	37125238800000
Hill Unit 3H	Marcellus Shale	37125238790000
Hornor Unit 1H	Marcellus Shale	47033053570000
Hornor Unit 2H	Marcellus Shale	47033053580000
Marsh Unit 1H	Marcellus Shale	47033053610000
Marsh Unit 3H	Marcellus Shale	47033053760000
Marsh Unit 3HR	Marcellus Shale	47033054170000
Marsh Unit 4H	Marcellus Shale	4733054950000
McKinley Unit 1	Marcellus Shale	47033051980000
McKinley Unit 2H	Marcellus Shale	47033051990000
Morgan Unit 1H	Marcellus Shale	47033052430000
Morgan Unit 3H	Marcellus Shale	47033052450000
Morrison Unit 2H	Marcellus Shale	47033052220000

Morrow #1	Marcellus Shale	47033051420000
Mutschelknaus #1	Marcellus Shale	47033049290000
Mutschelknaus #3	Marcellus Shale	47033050110000
Mutschelknaus #5	Marcellus Shale	47033050500000
Mutschelknaus #6	Marcellus Shale	47017056720000
Newlon #2	Marcellus Shale	47017558600000
Nicholson #3	Marcellus Shale	47017057010000
O. Rice South Unit 1H	Marcellus Shale	47033054370000
Post Unit 1H	Marcellus Shale	47033054910000
Post Unit 2H	Marcellus Shale	47033054920000
Post Unit 3H	Marcellus Shale	47033054930000
Reynolds Unit 1H	Marcellus Shale	47033054510000
Reynolds Unit 2H	Marcellus Shale	47033054500000
Rice North Unit 1H	Marcellus Shale	47033055330000
Ritter #1	Marcellus Shale	47033050160000
Robert Haught South 1H	Marcellus Shale	47033054530000
Rominger #1	Marcellus Shale	47017056570000
Scott Unit 1H	Marcellus Shale	47033055010000
Southern Unit 1H	Marcellus Shale	47033053630001
Southern Unit 2H	Marcellus Shale	47033053620000
Tate #2	Marcellus Shale	47017056460000
Tate #4	Marcellus Shale	47017055530000
Tetrick Unit 1H	Marcellus Shale	47033053920000
Tetrick Unit 2H	Marcellus Shale	47033053890000
Underwood #1	Marcellus Shale	47170458500000
Wagner Unit 1H	Marcellus Shale	47033054650000
Wagner Unit 2H	Marcellus Shale	47033054660000
Wagner Unit 3H	Marcellus Shale	47033054670000

UIC-IR-1
July 25, 2000

API: 47- 085-09669

WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
UNDERGROUND INJECTION CONTROL PROGRAM

UIC ROUTINE INSPECTION FORM

OPERATOR: Hall Drilling

FARM: _____

COUNTY: Ritchie

District: _____

STATUS: Active

FLUID TYPE: Brine

WELL CONSTRUCTION INFORMATION

ELEVATION: _____ FEET

FRESHWATER CASING: 4 1/2 INCH @ _____ FEET _____ CEMENT (sks)

INJECTION CASING: 2 7/8 INCH @ _____ FEET _____ CEMENT (sks)

WELL OPERATION

SURFACE INJECTION PRESSURE: _____ PSI

INJECTION RATE: _____ BBLS/HR

ANNULUS MONITORING: SIZE: _____ FLOW OR PRESSURE N - Flow

SIZE: _____ FLOW OR PRESSURE: No Pressure

COMMENTS

- Settling ponds o.k., watch free board

SIGNED James Peterson
OIL AND GAS INSPECTOR

DATE 11/9/11

UIC-IR-1
July 25, 2000

API: 47-085-09669

WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
UNDERGROUND INJECTION CONTROL PROGRAM

UIC ROUTINE INSPECTION FORM

OPERATOR: Hall Drilling
FARM: Tech Service Center
COUNTY: Ritchie District: _____
STATUS: Active
FLUID TYPE: Brine

WELL CONSTRUCTION INFORMATION

ELEVATION: _____ FEET
FRESHWATER CASING: 4 1/2 INCH @ _____ FEET _____ CEMENT (sks)
INJECTION CASING: 2 7/8 INCH @ _____ FEET _____ CEMENT (sks)

WELL OPERATION

SURFACE INJECTION PRESSURE: 1900 PSI
INJECTION RATE: _____ BBL/S/HR
ANNULUS MONITORING: SIZE: _____ FLOW OR PRESSURE No Flow
SIZE: _____ FLOW OR PRESSURE No Pressure

COMMENTS

Both (2) AST needing removed
as secondary containment and security
by settling ponds.

SIGNED

James Peterson
OIL AND GAS INSPECTOR

DATE

7/13/12

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

7/8/2011
Shanley 6A
085-09669

OPERATOR NAME: Hall Drilling, LLC

MONTH:

June 2011

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNUUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLS AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
6/1/2011	NA						0		
6/2/2011	NA						0		
6/3/2011	NA						0		
6/4/2011	NA						0		
6/5/2011	NA						0		
6/6/2011	NA						0		
6/7/2011	12	1,810		1,810	1,400	1,022	1,022	59.64	59.64
6/8/2011	20	1,850		1,850	1,450	1,704	2,726	59.64	59.64
6/9/2011	20	1,860		1,860	1,600	1,704	4,430	59.64	59.64
6/10/2011	11	1,900		1,900	1,450	937	5,368	59.64	59.64
6/11/2011	NA						5,368		
6/12/2011	NA						5,368		
6/13/2011	10	1,750		1,750	1,350	852	6,220	59.64	59.64
6/14/2011	10	1,850		1,850	1,350	852	7,072	59.64	59.64
6/15/2011	20	1,800		1,800	1,450	1,704	8,776	59.64	59.64
6/16/2011	19	1,900		1,900	1,500	1,619	10,394	59.64	59.64
6/17/2011	18	1,900		1,900	1,500	1,534	11,928	59.64	59.64
6/18/2011	NA						11,928		
6/19/2011	NA						11,928		
6/20/2011	10	1,850		1,850	1,400	852	12,780	59.64	59.64
6/21/2011	12	1,900		1,900	1,500	1,022	13,802	59.64	59.64
6/22/2011	17	1,900		1,900	1,550	1,448	15,251	59.64	59.64
6/23/2011	18	1,875		1,875	1,500	1,210	16,460	47.04	47.04
6/24/2011	10	1,900		1,900	1,550	672	17,132	47.04	47.04
6/25/2011	10	1,900		1,900	1,575	672	17,804	47.04	47.04
6/26/2011	NA						17,804		
6/27/2011	12	1,900		1,900	1,350	806	18,611	47.04	47.04
6/28/2011	10	1,900		1,900	1,500	672	19,283	47.04	47.04
6/29/2011	12	1,800		1,800	1,500	806	20,089	47.04	47.04
6/30/2011	12	1,850		1,850	1,450	806	20,896	47.04	47.04
TOTALS	263					20,896			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

8/15/2011
Shanley 6A
085-09669

OPERATOR NAME:

Hall Drilling, LLC

MONTH:

July 2011

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
7/1/2011	12	1,850		1,850	1,500	842	20,896	49.14	49.14
7/2/2011	12	1,900		1,900	1,550	842	21,738	49.14	49.14
7/3/2011	12	1,900		1,900	1,500	842	22,581	49.14	49.14
7/4/2011	10	1,850		1,850	1,550	702	23,283	49.14	49.14
7/5/2011	12	1,850		1,850	1,450	842	24,125	49.14	49.14
7/6/2011	12	1,900		1,900	1,850	842	24,968	49.14	49.14
7/7/2011	11	1,850		1,850	1,600	739	25,707	47.04	47.04
7/8/2011	12	1,910		1,910	1,800	806	26,513	47.04	47.04
7/9/2011	0	NA		NA	NA	0	26,513	NA	NA
7/10/2011	0	NA		NA	NA	0	26,513	NA	NA
7/11/2011	12	1,800		1,800	1,250	828	27,341	48.30	48.30
7/12/2011	12	1,900		1,900	1,850	828	28,169	48.30	48.30
7/13/2011	10	1,900		1,900	1,800	690	28,859	48.30	48.30
7/14/2011	11	1,850		1,850	1,800	759	29,618	48.30	48.30
7/15/2011	12	1,850		1,850	1,660	828	30,446	48.30	48.30
7/16/2011	0	NA		NA	NA	0	30,446	NA	NA
7/17/2011	0	NA		NA	NA	0	30,446	NA	NA
7/18/2011	12	1,850		1,850	1,300	828	31,274	48.30	48.30
7/19/2011	16	1,850		1,850	1,500	1,104	32,378	48.30	48.30
7/20/2011	10	1,800		1,800	1,500	690	33,068	48.30	48.30
7/21/2011	12	1,800		1,800	1,450	828	33,896	48.30	48.30
7/22/2011	10	1,850		1,850	1,600	690	34,586	48.30	48.30
7/23/2011	0	NA		NA	NA	0	34,586	NA	NA
7/24/2011	0	NA		NA	NA	0	34,586	NA	NA
7/25/2011	12	1,800		1,800	1,350	886	35,472	51.66	51.66
7/26/2011	12	1,900		1,900	1,400	886	36,357	51.66	51.66
7/27/2011	12	1,900		1,900	1,600	886	37,243	51.66	51.66
7/28/2011	10	1,900		1,900	1,550	738	37,981	51.66	51.66
7/29/2011	12	1,900		1,900	1,850	828	38,809	48.30	48.30
7/30/2011	0	NA		NA	NA	NA	38,809	NA	NA
7/31/2011	0	NA		NA	NA	NA	38,809	NA	NA
TOTALS	268					18,755			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

9/7/2011
Shanley 6A
085-09669

OPERATOR NAME:

Hall Drilling, LLC

MONTH:

August 2011

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
8/1/2011	12	1,875		1,875	1,450	806	39,615	47.04	47.04
8/2/2011	12	1,900		1,900	1,600	806	40,422	47.04	47.04
8/3/2011	12	1,900		1,900	1,600	806	41,228	47.04	47.04
8/4/2011	10	1,850		1,850	1,850	672	41,900	47.04	47.04
8/5/2011	12	1,850		1,850	1,700	806	42,707	47.04	47.04
8/6/2011	12	1,875		1,875	1,800	806	43,513	47.04	47.04
8/7/2011	12	1,900		1,900	1,850	806	44,319	47.04	47.04
8/8/2011	12	1,900		1,900	1,800	806	45,126	47.04	47.04
8/9/2011	12	1,900		1,900	1,825	806	45,932	47.04	47.04
8/10/2011	12	1,900		1,900	1,800	806	46,739	47.04	47.04
8/11/2011	12	1,900		1,900	1,875	799	47,538	46.62	46.62
8/12/2011	11	1,900		1,900	1,850	739	48,277	47.04	47.04
8/13/2011	12	1,875		1,875	1,800	825	49,102	48.13	48.13
8/14/2011	0	NA		NA	NA	0	49,102	NA	NA
8/15/2011	12	1,850		1,850	1,400	806	49,908	47.04	47.04
8/16/2011	12	1,875		1,875	1,875	806	50,715	47.04	47.04
8/17/2011	12	1,875		1,875	1,875	806	51,521	47.04	47.04
8/18/2011	12	1,875		1,875	1,850	806	52,328	47.04	47.04
8/19/2011	12	1,900		1,900	1,875	806	53,134	47.04	47.04
8/20/2011	12	1,900		1,900	1,850	806	53,940	47.04	47.04
8/21/2011	12	1,850		1,850	1,875	806	54,747	47.04	47.04
8/22/2011	12	1,875		1,875	1,850	806	55,553	47.04	47.04
8/23/2011	12	1,875		1,875	1,850	806	56,360	47.04	47.04
8/24/2011	12	1,900		1,900	1,875	806	57,166	47.04	47.04
8/25/2011	12	1,900		1,900	1,850	806	57,972	47.04	47.04
8/26/2011	12	1,900		1,900	1,850	806	58,779	47.04	47.04
8/27/2011	0	NA		NA	NA	0	58,779	NA	NA
8/28/2011	0	NA		NA	NA	0	58,779	NA	NA
8/29/2011	12	1,900		1,900	1,575	806	59,585	47.04	47.04
8/30/2011	12	1,900		1,900	1,875	806	60,392	47.04	47.04
8/31/2011	12	1,900		1,900	1,875	749	61,140	43.68	43.68
TOTALS	333					22,331			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

10/12/2011
Shanley 6A
085-09669

OPERATOR NAME:

Hall Drilling, LLC

MONTH:

September 2011

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
9/1/2011	12	1,900		1,900	1,875	770	61,910	44.94	44.94
9/2/2011	12	1,900		1,900	1,875	770	62,681	44.94	44.94
9/3/2011	0	NA		NA	NA	0	62,681	0.00	0.00
9/4/2011	0	NA		NA	NA	0	62,681	0.00	0.00
9/5/2011	0	NA		NA	NA	0	62,681	0.00	0.00
9/6/2011	12	1,875		1,875	1,800	770	63,451	44.94	44.94
9/7/2011	12	1,900		1,900	1,875	770	64,222	44.94	44.94
9/8/2011	12	1,900		1,900	1,875	770	64,992	44.94	44.94
9/9/2011	12	1,900		1,900	1,890	770	65,762	44.94	44.94
9/10/2011	0	NA		NA	NA	0	65,762	0.00	0.00
9/11/2011	0	NA		NA	NA	0	65,762	0.00	0.00
9/12/2011	12	1,600		1,600	1,400	770	66,533	44.94	44.94
9/13/2011	14	1,875		1,875	1,800	1,092	67,625	54.60	54.60
9/14/2011	12	1,850		1,850	1,800	936	68,561	54.60	54.60
9/15/2011	12	1,875		1,875	1,800	799	69,360	46.62	46.62
9/16/2011	12	1,900		1,900	1,825	799	70,159	46.62	46.62
9/17/2011	0	NA		NA	NA	0	70,159	0.00	0.00
9/18/2011	0	NA		NA	NA	0	70,159	0.00	0.00
9/19/2011	12	1,775		1,775	1,400	799	70,958	46.62	46.62
9/20/2011	12	1,800		1,800	1,700	799	71,758	46.62	46.62
9/21/2011	12	1,825		1,825	1,750	799	72,557	46.62	46.62
9/22/2011	12	1,825		1,825	1,750	799	73,356	46.62	46.62
9/23/2011	12	1,850		1,850	1,775	799	74,155	46.62	46.62
9/24/2011	12	1,875		1,875	1,800	799	74,954	46.62	46.62
9/25/2011	0	NA		NA	NA	0	74,954	0.00	0.00
9/26/2011	12	1,750		1,750	1,700	799	75,754	46.62	46.62
9/27/2011	12	1,800		1,800	1,750	799	76,553	46.62	46.62
9/28/2011	12	1,825		1,825	1,750	799	77,352	46.62	46.62
9/29/2011	12	1,830		1,830	1,750	799	78,151	46.62	46.62
9/30/2011	12	1,825		1,825	1,750	799	78,950	46.62	46.62
TOTALS	266			0		17,810	78,950		0.00

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

11/9/2011
Shanley 6A
085-09669

OPERATOR NAME:

Hall Drilling, LLC

MONTH:

October 2011

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
10/1/2011	0	NA		NA	NA	0	78,950	0.00	0.00
10/2/2011	0	NA		NA	NA	0	78,950	0.00	0.00
10/3/2011	12	1,600		1,600	1,225	806	79,756	47.04	47.04
10/4/2011	12	1,850		1,850	1,250	806	80,563	47.04	47.04
10/5/2011	12	1,900		1,900	1,850	806	81,369	47.04	47.04
10/6/2011	12	1,900		1,900	1,875	770	82,140	44.94	44.94
10/7/2011	12	1,900		1,900	1,900	770	82,910	44.94	44.94
10/8/2011	0	NA		NA	NA	0	82,910	0.00	0.00
10/9/2011	0	NA		NA	NA	0	82,910	0.00	0.00
10/10/2011	0	NA		NA	NA	0	82,910	0.00	0.00
10/11/2011	12	1,625		1,625	1,225	806	83,716	47.04	47.04
10/12/2011	12	1,875		1,875	1,825	806	84,523	47.04	47.04
10/13/2011	12	1,900		1,900	1,875	806	85,329	47.04	47.04
10/14/2011	12	1,900		1,900	1,900	770	86,100	44.94	44.94
10/15/2011	0	NA		NA	NA	0	86,100	0.00	0.00
10/16/2011	0	NA		NA	NA	0	86,100	0.00	0.00
10/17/2011	12	1,875		1,875	1,350	806	86,906	47.04	47.04
10/18/2011	12	1,900		1,900	1,875	770	87,676	44.94	44.94
10/19/2011	12	1,900		1,900	1,700	770	88,447	44.94	44.94
10/20/2011	12	1,825		1,825	1,600	770	89,217	44.94	44.94
10/21/2011	12	1,875		1,875	1,750	770	89,988	44.94	44.94
10/22/2011	0	NA		NA	NA	0	89,988	0.00	0.00
10/23/2011	0	NA		NA	NA	0	89,988	0.00	0.00
10/24/2011	12	1,875		1,875	1,350	770	90,758	44.94	44.94
10/25/2011	12	1,900		1,900	1,875	770	91,528	44.94	44.94
10/26/2011	12	1,900		1,900	1,875	770	92,299	44.94	44.94
10/27/2011	12	1,900		1,900	1,800	770	93,069	44.94	44.94
10/28/2011	12	1,875		1,875	1,600	770	93,840	44.94	44.94
10/29/2011	0	NA		NA	NA	0	93,840	0.00	0.00
10/30/2011	0	NA		NA	NA	0	93,840	0.00	0.00
10/31/2011	12	1,875		1,875	1,250	770	94,610	44.94	44.94
TOTALS	240					15,660			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

12/15/2011
Shanley 6A
085-09669

OPERATOR NAME: Hall Drilling, LLC

MONTH: _____

November 2011

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
11/1/2011	12	1,875		1,875	1,400	806	95,416	47.04	47.04
11/2/2011	12	1,900		1,900	1,875	806	96,223	47.04	47.04
11/3/2011	12	1,900		1,900	1,900	806	97,029	47.04	47.04
11/4/2011	12	1,900		1,900	1,900	806	97,836	47.04	47.04
11/5/2011	0	NA		NA	NA	0	97,836	0.00	0.00
11/6/2011	0	NA		NA	NA	0	97,836	0.00	0.00
11/7/2011	12	1,900		1,900	1,375	806	98,642	47.04	47.04
11/8/2011	12	1,900		1,900	1,850	806	99,448	47.04	47.04
11/9/2011	12	1,900		1,900	1,900	806	100,255	47.04	47.04
11/10/2011	12	1,900		1,900	1,900	806	101,061	47.04	47.04
11/11/2011	12	1,900		1,900	1,900	806	101,868	47.04	47.04
11/12/2011	0	NA		NA	NA	0	101,868	0.00	0.00
11/13/2011	0	NA		NA	NA	0	101,868	0.00	0.00
11/14/2011	12	1,900		1,900	1,450	806	102,674	47.04	47.04
11/15/2011	12	1,900		1,900	1,900	806	103,480	47.04	47.04
11/16/2011	12	1,900		1,900	1,900	806	104,287	47.04	47.04
11/17/2011	12	1,900		1,900	1,900	806	105,093	47.04	47.04
11/18/2011	12	1,900		1,900	1,900	806	105,900	47.04	47.04
11/19/2011	0	NA		NA	NA	0	105,900	0.00	0.00
11/20/2011	0	NA		NA	NA	0	105,900	0.00	0.00
11/21/2011	12	1,750		1,750	1,425	806	106,706	47.04	47.04
11/22/2011	12	1,800		1,800	1,450	806	107,512	47.04	47.04
11/23/2011	12	1,875		1,875	1,625	806	108,319	47.04	47.04
11/24/2011	12	1,875		1,875	1,875	806	109,125	47.04	47.04
11/25/2011	12	1,900		1,900	1,875	806	109,932	47.04	47.04
11/26/2011	0	NA		NA	NA	0	109,932	0.00	0.00
11/27/2011	0	NA		NA	NA	0	109,932	0.00	0.00
11/28/2011	12	1,900		1,900	1,675	806	110,738	47.04	47.04
11/29/2011	12	1,900		1,900	1,900	806	111,544	47.04	47.04
11/30/2011	12	1,900		1,900	1,900	806	112,351	47.04	47.04
TOTALS	264	NA		NA	NA	17,741	112,351	0.00	0.00

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

TITLE:

Jason Hall

Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

1/11/2012
Shanley 6A
085-09669

OPERATOR NAME:

Hall Drilling, LLC

MONTH:

December 2011

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
12/1/2011	18	1,900		1,900	1,875	1,166	113,517	45.36	45.36
12/2/2011	18	1,900		1,900	1,800	1,166	114,684	45.36	45.36
12/3/2011	0	NA		NA	NA	0	114,684	0.00	0.00
12/4/2011	0	NA		NA	NA	0	114,684	0.00	0.00
12/5/2011	18	1,900		1,900	1,550	1,166	115,850	45.36	45.36
12/6/2011	18	1,900		1,900	1,875	1,166	117,017	45.36	45.36
12/7/2011	18	1,900		1,900	1,900	1,166	118,183	45.36	45.36
12/8/2011	18	1,900		1,900	1,900	1,166	119,349	45.36	45.36
12/9/2011	18	1,900		1,900	1,900	1,166	120,516	45.36	45.36
12/10/2011	0	NA		NA	NA	0	120,516	0.00	0.00
12/11/2011	0	NA		NA	NA	0	120,516	0.00	0.00
12/12/2011	18	1,900		1,900	1,600	1,166	121,682	45.36	45.36
12/13/2011	18	1,900		1,900	1,875	1,166	122,849	45.36	45.36
12/14/2011	18	1,900		1,900	1,900	1,166	124,015	45.36	45.36
12/15/2011	18	1,900		1,900	1,900	1,166	125,181	45.36	45.36
12/16/2011	18	1,900		1,900	1,900	1,166	126,348	45.36	45.36
12/17/2011	0	NA		NA	NA	0	126,348	0.00	0.00
12/18/2011	0	NA		NA	NA	0	126,348	0.00	0.00
12/19/2011	18	1,925		1,925	1,650	1,166	127,514	45.36	45.36
12/20/2011	18	1,925		1,925	1,925	1,166	128,681	45.36	45.36
12/21/2011	18	1,950		1,950	1,925	1,166	129,847	45.36	45.36
12/22/2011	18	1,950		1,950	1,925	1,166	131,013	45.36	45.36
12/23/2011	18	1,950		1,950	1,925	1,166	132,180	45.36	45.36
12/24/2011	0	NA		NA	NA	0	132,180	0.00	0.00
12/25/2011	0	NA		NA	NA	0	132,180	0.00	0.00
12/26/2011	0	NA		NA	NA	0	132,180	0.00	0.00
12/27/2011	18	1,925		1,925	1,600	1,166	133,346	45.36	45.36
12/28/2011	18	1,925		1,925	1,875	1,166	134,513	45.36	45.36
12/29/2011	18	1,925		1,925	1,900	1,166	135,679	45.36	45.36
12/30/2011	18	1,925		1,925	1,900	1,166	136,845	45.36	45.36
12/31/2011	0	NA		NA	NA	0	136,845	0.00	0.00
TOTALS	378					24,494			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

2/10/2012
Shanley 6A
085-09669

OPERATOR NAME: Hall Drilling, LLC

MONTH:

January 2012

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
1/1/2012	0	NA		NA	NA	0	136,845	0.00	0.00
1/2/2012	0	NA		NA	NA	0	136,845	0.00	0.00
1/3/2012	18	1,900		1,900	1,825	1,188	136,033	46.20	46.20
1/4/2012	18	1,925		1,925	1,875	1,188	139,221	46.20	46.20
1/5/2012	18	1,950		1,950	1,900	1,188	140,409	46.20	46.20
1/6/2012	12	1,950		1,950	1,900	792	141,201	46.20	46.20
1/7/2012	0	NA		NA	NA	0	141,201	0.00	0.00
1/8/2012	0	NA		NA	NA	0	141,201	0.00	0.00
1/9/2012	18	1,900		1,900	1,650	1,188	142,389	46.20	46.20
1/10/2012	18	1,925		1,925	1,900	1,188	143,577	46.20	46.20
1/11/2012	12	1,925		1,925	1,925	792	144,369	46.20	46.20
1/12/2012	12	1,850		1,850	1,800	778	145,147	45.36	45.36
1/13/2012	12	1,875		1,875	1,650	778	145,924	45.36	45.36
1/14/2012	0	NA		NA	NA	0	145,924	0.00	0.00
1/15/2012	0	NA		NA	NA	0	145,924	0.00	0.00
1/16/2012	12	1,825		1,825	1,300	778	146,702	45.36	45.36
1/17/2012	18	1,900		1,900	1,325	1,166	147,868	45.36	45.36
1/18/2012	18	1,925		1,925	1,900	1,166	149,035	45.36	45.36
1/19/2012	18	1,950		1,950	1,925	1,166	150,201	45.36	45.36
1/20/2012	12	1,950		1,950	1,950	778	150,979	45.36	45.36
1/21/2012	0	NA		NA	NA	0	150,979	0.00	0.00
1/22/2012	0	NA		NA	NA	0	150,979	0.00	0.00
1/23/2012	12	1,700		1,700	1,300	778	151,756	45.36	45.36
1/24/2012	18	1,750		1,750	1,400	778	152,534	45.36	45.36
1/25/2012	18	1,875		1,875	1,350	1,166	153,700	45.36	45.36
1/26/2012	12	1,925		1,925	1,900	778	154,478	45.36	45.36
1/27/2012	12	1,950		1,950	1,400	778	155,255	45.36	45.36
1/28/2012	0	NA		NA	NA	0	155,255	0.00	0.00
1/29/2012	0	NA		NA	NA	0	155,255	0.00	0.00
1/30/2012	18	1,900		1,900	1,350	1,166	156,422	45.36	45.36
1/31/2012	18	1,925		1,925	1,900	1,166	157,588	45.36	45.36
TOTALS	318					20,743			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

TITLE:

Jason Hall

Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

3/12/2012
Shanley 6A
085-09669

OPERATOR NAME:

Hall Drilling, LLC

MONTH:

February 2012

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
2/1/2012	18	1,950		1,950	1,900	1,188	158,776	46.20	46.20
2/2/2012	18	1,975		1,975	1,950	1,188	159,964	46.20	46.20
2/3/2012	18	1,975		1,975	1,975	1,188	161,152	46.20	46.20
2/4/2012	0	NA		NA	NA	0	161,152	0.00	0.00
2/5/2012	0	NA		NA	NA	0	161,152	0.00	0.00
2/6/2012	18	1,925		1,925	1,800	1,188	162,340	46.20	46.20
2/7/2012	18	1,950		1,950	1,925	1,188	163,528	46.20	46.20
2/8/2012	18	1,950		1,950	1,925	1,188	164,716	46.20	46.20
2/9/2012	18	1,950		1,950	1,925	1,188	165,904	46.20	46.20
2/10/2012	12	1,950		1,950	1,925	792	166,696	46.20	46.20
2/11/2012	0	NA		NA	NA	0	166,696	0.00	0.00
2/12/2012	0	NA		NA	NA	0	166,696	0.00	0.00
2/13/2012	18	1,900		1,900	1,400	1,188	167,884	46.20	46.20
2/14/2012	18	1,950		1,950	1,900	1,188	169,072	46.20	46.20
2/15/2012	18	1,925		1,925	1,925	1,188	170,260	46.20	46.20
2/16/2012	18	1,925		1,925	1,900	1,188	171,448	46.20	46.20
2/17/2012	18	1,950		1,950	1,925	1,188	172,636	46.20	46.20
2/18/2012	0	NA		NA	NA	0	172,636	0.00	0.00
2/19/2012	0	NA		NA	NA	0	172,636	0.00	0.00
2/20/2012	18	1,900		1,900	1,400	1,188	173,824	46.20	46.20
2/21/2012	12	1,875		1,875	1,400	792	174,616	46.20	46.20
2/22/2012	12	1,900		1,900	1,400	792	175,408	46.20	46.20
2/23/2012	18	1,875		1,875	1,600	1,188	176,596	46.20	46.20
2/24/2012	12	1,900		1,900	1,875	792	177,388	46.20	46.20
2/25/2012	0	NA		NA	NA	0	177,388	0.00	0.00
2/26/2012	0	NA		NA	NA	0	177,388	0.00	0.00
2/27/2012	18	1,800		1,800	1,300	1,188	178,576	46.20	46.20
2/28/2012	18	1,875		1,875	1,600	1,188	179,764	46.20	46.20
2/29/2012	12	1,950		1,950	1,875	792	180,556	46.20	46.20
TOTALS	348					22,968			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

4/15/2012
Shanley 6A
085-09669

OPERATOR NAME:

Hall Drilling, LLC

MONTH:

March 2012

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
3/1/2012	12	1,875		1,875	1,800	792	181,348	46.20	46.20
3/2/2012	12	1,900		1,900	1,900	792	182,140	46.20	46.20
3/3/2012	0	NA		NA	NA	0	182,140	0.00	0.00
3/4/2012	0	NA		NA	NA	0	182,140	0.00	0.00
3/5/2012	12	1,600		1,600	1,275	792	182,932	46.20	46.20
3/6/2012	12	1,700		1,700	1,300	792	183,724	46.20	46.20
3/7/2012	12	1,800		1,800	1,300	792	184,516	46.20	46.20
3/8/2012	12	1,825		1,825	1,275	792	185,308	46.20	46.20
3/9/2012	12	1,750		1,750	1,400	792	186,100	46.20	46.20
3/10/2012	0	NA		NA	NA	0	186,100	0.00	0.00
3/11/2012	0	NA		NA	NA	0	186,100	0.00	0.00
3/12/2012	12	1,725		1,725	1,275	792	186,892	46.20	46.20
3/13/2012	12	1,750		1,750	1,100	792	187,684	46.20	46.20
3/14/2012	12	1,675		1,675	1,125	792	188,476	46.20	46.20
3/15/2012	12	1,650		1,650	1,225	792	189,268	46.20	46.20
3/16/2012	10	1,600		1,600	1,225	660	189,928	46.20	46.20
3/17/2012	0	NA		NA	NA	0	189,928	0.00	0.00
3/18/2012	0	NA		NA	NA	0	189,928	0.00	0.00
3/19/2012	16	1,800		1,800	1,600	1,056	190,984	46.20	46.20
3/20/2012	18	1,775		1,775	1,775	1,188	192,172	46.20	46.20
3/21/2012	18	1,800		1,800	1,800	1,188	193,360	46.20	46.20
3/22/2012	18	1,825		1,825	1,825	1,188	194,548	46.20	46.20
3/23/2012	18	1,825		1,825	1,825	1,188	195,736	46.20	46.20
3/24/2012	0	NA		NA	NA	0	195,736	0.00	0.00
3/25/2012	0	NA		NA	NA	0	195,736	0.00	0.00
3/26/2012	18	1,700		1,700	1,600	1,188	196,924	46.20	46.20
3/27/2012	18	1,875		1,875	1,825	1,188	198,112	46.20	46.20
3/28/2012	18	1,850		1,850	1,825	1,188	199,300	46.20	46.20
3/29/2012	18	1,875		1,875	1,825	1,188	200,488	46.20	46.20
3/30/2012	18	1,875		1,875	1,800	1,188	201,676	46.20	46.20
3/31/2012	0	NA		NA	NA	0	201,676	0.00	0.00
TOTALS	320					21,120			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

5/9/2012
Shanley 6A
085-09669

OPERATOR NAME:

Hall Drilling, LLC

MONTH:

April 2012

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
4/1/2012	0	NA		NA	NA	0	201,676	0.00	0.00
4/2/2012	18	1,850		1,850	1,800	1,166	202,842	45.36	45.36
4/3/2012	18	1,850		1,850	1,850	1,166	204,009	45.36	0.00
4/4/2012	18	1,750		1,750	1,525	1,166	205,175	45.36	0.00
4/5/2012	18	1,825		1,825	1,750	1,166	206,342	45.36	45.36
4/6/2012	12	1,850		1,850	1,825	778	207,119	45.36	45.36
4/7/2012	0	NA		NA	NA	0	207,119	0.00	0.00
4/8/2012	0	NA		NA	NA	0	207,119	0.00	0.00
4/9/2012	18	1,750		1,750	1,400	1,166	208,286	45.36	45.36
4/10/2012	18	1,825		1,825	1,750	1,166	209,452	45.36	0.00
4/11/2012	18	1,825		1,825	1,825	1,166	210,618	45.36	45.36
4/12/2012	18	1,900		1,900	1,825	1,166	211,785	45.36	45.36
4/13/2012	18	1,900		1,900	1,875	1,166	212,951	45.36	45.36
4/14/2012	0	NA		NA	NA	0	212,951	0.00	0.00
4/15/2012	0	NA		NA	NA	0	212,951	0.00	0.00
4/16/2012	18	1,800		1,800	1,400	1,166	214,118	45.36	45.36
4/17/2012	18	1,850		1,850	1,800	1,166	215,284	45.36	0.00
4/18/2012	18	1,850		1,850	1,850	1,166	216,450	45.36	45.36
4/19/2012	18	1,850		1,850	1,875	1,166	217,617	45.36	45.36
4/20/2012	18	1,875		1,875	1,875	1,166	218,783	45.36	45.36
4/21/2012	0	NA		NA	NA	0	218,783	0.00	0.00
4/22/2012	0	NA		NA	NA	0	218,783	0.00	0.00
4/23/2012	12	1,700		1,700	1,400	778	219,561	45.36	45.36
4/24/2012	18	1,800		1,800	1,525	1,166	220,727	45.36	0.00
4/25/2012	18	1,875		1,875	1,800	1,166	221,894	45.36	45.36
4/26/2012	18	1,900		1,900	1,875	1,166	223,060	45.36	45.36
4/27/2012	18	1,900		1,900	1,900	1,166	224,226	45.36	45.36
4/28/2012	0	NA		NA	NA	0	224,226	0.00	0.00
4/29/2012	0	NA		NA	NA	0	224,226	0.00	0.00
4/30/2012	18	1,800		1,800	1,400	1,166	225,393	45.36	45.36
	0	NA		NA	NA	0	225,393	0.00	0.00
TOTALS	366					23,717			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

6/13/2012
Shanley 6A
085-09669

OPERATOR NAME: Hall Drilling, LLC

MONTH:

May 2012

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
5/1/2012	14	1,900		1,900	1,800	907	226,300	45.36	45.36
5/2/2012	18	1,900		1,900	1,600	1,166	227,467	45.36	45.36
5/3/2012	18	1,900		1,900	1,800	1,166	228,633	45.36	45.36
5/4/2012	18	1,925		1,925	1,900	1,166	229,799	45.36	45.36
5/5/2012	0	NA		NA	NA	0	229,799	0.00	0.00
5/6/2012	0	NA		NA	NA	0	229,799	0.00	0.00
5/7/2012	18	1,825		1,825	1,400	1,166	230,966	45.36	45.36
5/8/2012	18	1,900		1,900	1,825	1,166	232,132	45.36	45.36
5/9/2012	18	1,925		1,925	1,900	1,166	233,299	45.36	45.36
5/10/2012	18	1,925		1,925	1,900	1,166	234,465	45.36	45.36
5/11/2012	18	1,925		1,925	1,900	1,166	235,631	45.36	45.36
5/12/2012	0	NA		NA	NA	0	235,631	0.00	0.00
5/13/2012	0	NA		NA	NA	0	235,631	0.00	0.00
5/14/2012	18	1,800		1,800	1,400	1,166	236,798	45.36	45.36
5/15/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/16/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/17/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/18/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/19/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/20/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/21/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/22/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/23/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/24/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/25/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/26/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/27/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/28/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/29/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/30/2012	0	NA		NA	NA	0	236,798	0.00	0.00
5/31/2012	0	NA		NA	NA	0	236,798	0.00	0.00
TOTALS	176					11,405			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:
TITLE:

Jason Hall
Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

6/13/2012
Shanley 6A
085-09669

OPERATOR NAME:

Hall Drilling, LLC

MONTH:

June 2012

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
6/1/2012	0	NA		NA	NA	0	236,798	0.00	0.00
6/2/2012	0	NA		NA	NA	0	236,798	0.00	0.00
6/3/2012	0	NA		NA	NA	0	236,798	0.00	0.00
6/4/2012	18	1,300		1,300	800	1,166	237,964	45.36	0.00
6/5/2012	18	1,750		1,750	1,300	1,166	239,131	45.36	45.36
6/6/2012	18	1,900		1,900	1,750	1,166	240,297	45.36	45.36
6/7/2012	18	1,925		1,925	1,900	1,166	241,464	45.36	45.36
6/8/2012	18	1,925		1,925	1,900	1,166	242,630	45.36	45.36
6/9/2012	0	NA		NA	NA	0	242,630	0.00	0.00
6/10/2012	0	NA		NA	NA	0	242,630	0.00	0.00
6/11/2012	18	1,700		1,700	1,400	1,166	243,796	45.36	45.36
6/12/2012	18	1,900		1,900	1,700	1,166	244,963	45.36	45.36
6/13/2012	18	1,900		1,900	1,900	1,166	246,129	45.36	45.36
6/14/2012	18	1,925		1,925	1,900	1,166	247,296	45.36	45.36
6/15/2012	18	1,930		1,930	1,900	1,166	248,462	45.36	45.36
6/16/2012	0	NA		NA	NA	0	248,462	0.00	0.00
6/17/2012	0	NA		NA	NA	0	248,462	0.00	0.00
6/18/2012	18	1,930		1,930	1,900	1,166	249,628	45.36	45.36
6/19/2012	18	1,940		1,940	1,910	1,166	250,795	45.36	45.36
6/20/2012	18	1,945		1,945	1,920	1,166	251,961	45.36	45.36
6/21/2012	18	1,950		1,950	1,930	1,166	253,128	45.36	45.36
6/22/2012	18	1,950		1,950	1,940	1,166	254,294	45.36	45.36
6/23/2012	0	NA		NA	NA	0	254,294	0.00	0.00
6/24/2012	0	NA		NA	NA	0	254,294	0.00	0.00
6/25/2012	18	1,750		1,750	1,300	1,166	255,460	45.36	45.36
6/26/2012	18	1,900		1,900	1,750	1,166	256,627	45.36	45.36
6/27/2012	18	1,930		1,930	1,900	1,166	257,793	45.36	45.36
6/28/2012	18	1,940		1,940	1,900	1,166	258,960	45.36	45.36
6/29/2012	12	1,825		1,825	1,800	778	259,737	45.36	45.36
6/30/2012	0	NA		NA	NA	0	259,737	0.00	0.00
TOTALS	354	NA		NA	NA	22,939	259,737	0.00	0.00

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

8/10/2012
Shanley 6A
085-09669

OPERATOR NAME:

Hall Drilling, LLC

MONTH:

July 2012

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
7/1/2012	0	NA		NA	NA	0	259,737	0.00	0.00
7/2/2012	0	NA		NA	NA	0	259,737	0.00	0.00
7/3/2012	18	1,700		1,700	1,300	1,166	260,903	45.36	45.36
7/4/2012	0	NA		NA	NA	0	260,903	0.00	0.00
7/5/2012	18	1,700		1,700	1,325	1,166	262,070	45.36	45.36
7/6/2012	18	1,900		1,900	1,850	1,166	263,236	45.36	45.36
7/7/2012	0	NA		NA	NA	0	263,236	0.00	0.00
7/8/2012	0	NA		NA	NA	0	263,236	0.00	0.00
7/9/2012	18	1,700		1,700	1,300	1,166	264,403	45.36	45.36
7/10/2012	18	1,900		1,900	1,700	1,166	265,569	45.36	45.36
7/11/2012	18	1,925		1,925	1,900	1,166	266,735	45.36	45.36
7/12/2012	18	1,950		1,950	1,925	1,166	267,902	45.36	45.36
7/13/2012	18	1,950		1,950	1,925	1,166	269,068	45.36	45.36
7/14/2012	0	NA		NA	NA	0	269,068	0.00	0.00
7/15/2012	0	NA		NA	NA	0	269,068	0.00	0.00
7/16/2012	18	1,700		1,700	1,300	1,166	270,235	45.36	45.36
7/17/2012	18	1,900		1,900	1,700	1,166	271,401	45.36	45.36
7/18/2012	18	1,925		1,925	1,900	1,166	272,567	45.36	45.36
7/19/2012	18	1,925		1,925	1,900	1,166	273,734	45.36	45.36
7/20/2012	18	1,950		1,950	1,900	1,166	274,900	45.36	45.36
7/21/2012	0	NA		NA	NA	0	274,900	0.00	0.00
7/22/2012	0	NA		NA	NA	0	274,900	0.00	0.00
7/23/2012	18	1,700		1,700	1,300	1,166	276,067	45.36	45.36
7/24/2012	18	1,900		1,900	1,700	1,166	277,233	45.36	45.36
7/25/2012	18	1,925		1,925	1,900	1,166	278,399	45.36	45.36
7/26/2012	12	1,925		1,925	1,900	778	279,177	45.36	45.36
7/27/2012	18	1,850		1,850	1,600	1,166	280,343	45.36	45.36
7/28/2012	0	NA		NA	NA	0	280,343	0.00	0.00
7/29/2012	0	NA		NA	NA	0	280,343	0.00	0.00
7/30/2012	12	1,800		1,800	1,400	778	281,121	45.36	45.36
7/31/2012	18	1,925		1,925	1,500	1,166	282,287	45.36	45.36
TOTALS	348					22,550			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

12/20

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

9/14/2012
Shanley 6A
085-09669

OPERATOR NAME:

Hall Drilling, LLC

MONTH:

August 2012

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
8/1/2012	18	1,900		1,900	1,900	1,166	283,453	45.36	45.36
8/2/2012	18	1,925		1,925	1,900	1,166	284,620	45.36	45.36
8/3/2012	18	1,950		1,950	1,925	1,166	285,786	45.36	45.36
8/4/2012	0	NA		NA	NA	0	285,786	0.00	0.00
8/5/2012	0	NA		NA	NA	0	285,786	0.00	0.00
8/6/2012	12	1,950		1,950	1,450	778	286,564	45.36	45.36
8/7/2012	18	1,850		1,850	1,600	1,166	287,730	45.36	45.36
8/8/2012	12	1,900		1,900	1,850	778	288,508	45.36	45.36
8/9/2012	18	1,850		1,850	1,600	1,166	289,674	45.36	45.36
8/10/2012	18	1,950		1,950	1,850	1,166	290,841	45.36	45.36
8/11/2012	0	NA		NA	NA	0	290,841	0.00	0.00
8/12/2012	0	NA		NA	NA	0	290,841	0.00	0.00
8/13/2012	18	1,850		1,850	1,600	1,166	292,007	45.36	45.36
8/14/2012	18	1,950		1,950	1,850	1,166	293,173	45.36	45.36
8/15/2012	18	1,950		1,950	1,900	1,166	294,340	45.36	45.36
8/16/2012	12	1,950		1,950	1,900	778	295,117	45.36	45.36
8/17/2012	18	1,850		1,850	1,800	1,166	296,284	45.36	45.36
8/18/2012	0	NA		NA	NA	0	296,284	0.00	0.00
8/19/2012	0	NA		NA	NA	0	296,284	0.00	0.00
8/20/2012	18	1,750		1,750	1,500	1,166	297,450	45.36	45.36
8/21/2012	18	1,900		1,900	1,750	1,166	298,617	45.36	45.36
8/22/2012	12	1,950		1,950	1,900	778	299,394	45.36	45.36
8/23/2012	12	1,800		1,800	1,625	778	300,172	45.36	45.36
8/24/2012	18	1,825		1,825	1,600	1,166	301,338	45.36	45.36
8/25/2012	0	NA		NA	NA	0	301,338	0.00	0.00
8/26/2012	0	NA		NA	NA	0	301,338	0.00	0.00
8/27/2012	18	1,800		1,800	1,600	1,166	302,505	45.36	45.36
8/28/2012	12	1,900		1,900	1,800	778	303,282	45.36	45.36
8/29/2012	18	1,825		1,825	1,650	1,166	304,449	45.36	45.36
8/30/2012	18	1,850		1,850	1,850	1,166	305,615	45.36	45.36
8/31/2012	18	1,925		1,925	1,850	1,166	306,781	45.36	45.36
TOTALS	378					24,494			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

10/15/2012
Shanley 6A
085-09669

OPERATOR NAME:

Hall Drilling, LLC

MONTH:

September 2012

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNULUS PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BBLs AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
9/1/2012	0	NA		NA	NA	0	306,781	0.00	0.00
9/2/2012	0	NA		NA	NA	0	306,781	0.00	0.00
9/3/2012	18	1,700		1,700	1,400	1,166	307,947	45.36	45.36
9/4/2012	12	1,925		1,925	1,700	778	308,725	45.36	45.36
9/5/2012	18	1,800		1,800	1,650	1,166	309,891	45.36	45.36
9/6/2012	18	1,900		1,900	1,800	1,166	311,058	45.36	45.36
9/7/2012	18	1,950		1,950	1,900	1,166	312,224	45.36	45.36
9/8/2012	0	NA		NA	NA	0	312,224	0.00	0.00
9/9/2012	0	NA		NA	NA	0	312,224	0.00	0.00
9/10/2012	12	1,800		1,800	1,600	778	313,002	45.36	45.36
9/11/2012	12	1,825		1,825	1,625	778	313,779	45.36	45.36
9/12/2012	12	1,800		1,800	1,575	778	314,557	45.36	45.36
9/13/2012	18	1,825		1,825	1,600	1,166	315,723	45.36	45.36
9/14/2012	18	1,925		1,925	1,825	1,166	316,890	45.36	45.36
9/15/2012	0	NA		NA	NA	0	316,890	0.00	0.00
9/16/2012	0	NA		NA	NA	0	316,890	0.00	0.00
9/17/2012	18	1,850		1,850	1,600	1,166	318,056	45.36	45.36
9/18/2012	18	1,950		1,950	1,850	1,166	319,223	45.36	45.36
9/19/2012	18	1,950		1,950	1,850	1,166	320,389	45.36	45.36
9/20/2012	18	1,950		1,950	1,950	1,166	321,555	45.36	45.36
9/21/2012	18	1,950		1,950	1,950	1,166	322,722	45.36	45.36
9/22/2012	0	NA		NA	NA	0	322,722	0.00	0.00
9/23/2012	0	NA		NA	NA	0	322,722	0.00	0.00
9/24/2012	18	1,750		1,750	1,550	1,166	323,888	45.36	45.36
9/25/2012	18	1,960		1,960	1,750	1,166	325,055	45.36	45.36
9/26/2012	18	1,950		1,950	1,850	1,166	326,221	45.36	45.36
9/27/2012	12	1,925		1,925	1,850	778	326,999	45.36	45.36
9/28/2012	18	1,850		1,850	1,750	1,166	328,165	45.36	45.36
9/29/2012	0	NA		NA	NA	0	328,165	0.00	0.00
9/30/2012	0	NA		NA	NA	0	328,165	0.00	0.00
TOTALS	330			0	NA	21,384	328,165	0.00	0.00

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

✓ 12/18

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE
WELL NO.
API PERMIT NO.

11/15/2012
Shanley 6A
085-09669

OPERATOR NAME:

Hall Drilling, LLC

MONTH:

October 2012

*****MAXIMUM PERMITTED INJECTION PRESSURE 1996 PSIG*****

DAY	OPERATING HOURS	ANNUAL US PRESSURE		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN BLS AND/OR MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
10/1/2012	18	1,800		1,800	1,600	1,166	329,331	45.36	45.36
10/2/2012	12	1,875		1,875	1,700	778	330,109	45.36	45.36
10/3/2012	0	NA		NA	NA	0	330,109	0.00	0.00
10/4/2012	0	NA		NA	NA	0	330,109	0.00	0.00
10/5/2012	18	1,700		1,700	1,400	1,166	331,275	45.36	45.36
10/6/2012	0	NA		NA	NA	0	331,275	0.00	0.00
10/7/2012	0	NA		NA	NA	0	331,275	0.00	0.00
10/8/2012	12	1,600		1,600	1,400	778	332,053	45.36	45.36
10/9/2012	18	1,750		1,750	1,375	1,166	333,219	45.36	45.36
10/10/2012	18	1,900		1,900	1,750	1,166	334,386	45.36	45.36
10/11/2012	12	1,925		1,925	1,800	778	335,163	45.36	45.36
10/12/2012	18	1,925		1,925	1,800	1,166	336,330	45.36	45.36
10/13/2012	0	NA		NA	NA	0	336,330	0.00	0.00
10/14/2012	0	NA		NA	NA	0	336,330	0.00	0.00
10/15/2012	18	1,850		1,850	1,600	1,166	337,496	45.36	45.36
10/16/2012	18	1,925		1,925	1,850	1,166	338,663	45.36	45.36
10/17/2012	18	1,925		1,925	1,900	1,166	339,829	45.36	45.36
10/18/2012	18	1,930		1,930	1,900	1,166	340,995	45.36	45.36
10/19/2012	18	1,930		1,930	1,900	1,166	342,162	45.36	45.36
10/20/2012	0	NA		NA	NA	0	342,162	0.00	0.00
10/21/2012	0	NA		NA	NA	0	342,162	0.00	0.00
10/22/2012	18	1,700		1,700	1,400	1,166	343,328	45.36	45.36
10/23/2012	18	1,900		1,900	1,700	1,166	344,495	45.36	45.36
10/24/2012	18	1,925		1,925	1,900	1,166	345,661	45.36	45.36
10/25/2012	18	1,900		1,900	1,850	1,166	346,827	45.36	45.36
10/26/2012	18	1,925		1,925	1,850	1,166	347,994	45.36	45.36
10/27/2012	0	NA		NA	NA	0	347,994	0.00	0.00
10/28/2012	0	NA		NA	NA	0	347,994	0.00	0.00
10/29/2012	12	1,750		1,750	1,400	778	348,771	45.36	45.36
10/30/2012	12	1,800		1,800	1,750	778	349,549	45.36	45.36
10/31/2012	18	1,950		1,950	1,750	1,166	350,715	45.36	45.36
TOTALS	348					22,550			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

Jason Hall

TITLE:

Director of Safety and Operations

✓ 12/18
3j

☐ RIDGEFIELD BUSINESS CENTER
25 CRIMSON CIRCLE
MARTINSBURG, WV 25403
TEL. (304) 596-2084 • FAX (304) 596-2086

SHEET NO. _____ OF _____

*PROJECT/REMARKS

[illegible]

PWS#

COPY

*** ADDITIONAL LABORATORY FEES MAY APPLY***

SHOULD RELIANCE LABORATORIES, INC. BE AT FAULT AND ANY DISPUTE ARISE REGARDING ANALYTICAL DATA GENERATED BY THE LABORATORY

A RETURN OF THE ANALYTICAL FEE, IN NO EVENT WILL RELIANCE LABORATORIES BE LIABLE FOR DAMAGES INCLUDING BUT NOT LIMITED TO DIRECT, INDIRECT OR CONSEQUENTIAL DAMAGES ARISING FROM SUCH OBLIGATE.

NOTE: TYPICAL SAMPLE TURN AROUND FOR ROUTINE SAMPLES IS 5 TO 10 WORKING DAYS. THIS IS NOT A GUARANTEE THAT SAMPLES WILL BE COMPLETED IN THIS TIME FRAME, HOWEVER, NON-ROUTINE SAMPLES MAY REQUIRE ADDITIONAL TIME.

TO BE COMPLETED BY CLIENT

ORIGINAL CHAIN OF CUSTODY DOCUMENT MUST BE EXECUTED IN INK

WILKIE LABORATORY, 1001 S. 10TH AVE.



Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

April 22, 2013

Ms. Tenley Miller
Reliance Laboratories, Inc.
2044 Meadowbrook Road
P.O. Box 4657
Bridgeport, WV 26330

RE: Project: 193161-2013-W
Pace Project No.: 3091141

Dear Ms. Miller:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins

jacquelyn.collins@pacelabs.com
Project Manager

Enclosures

Received
Office of Oil & Gas

MAY - 2013



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5800

CERTIFICATIONS

Project: 193161-2013-W

Pace Project No.: 3091141

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601
ACCLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41580
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 80133
Louisiana/TNI Certification #: LA080002
Louisiana/TNI Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 85-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: ANTE
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460188
Washington Certification #: C868
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

Received
Office of Oil & Gas

MAY - 6 2013

REPORT OF LABORATORY ANALYSIS

Page 2 of 12

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: 193161-2013-W
Pace Project No.: 3091141

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3091141001	193161-2013-W	Water	03/20/13 11:00	04/05/13 09:50

Received
Office of Oil & Gas

MAY - 6 2013

REPORT OF LABORATORY ANALYSIS

Page 3 of 12

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



Pace Analytical Services, Inc.
1638 Rossetown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 193161-2013-W
Pace Project No.: 3091141

Lab ID	Sample ID	Method	Analysts	Analytes Reported
3091141001	193161-2013-W	EPA 901.1m	AEH	8
		EPA 903.1	SLA	1
		EPA 904.0	MAW	1

Received
Office of Oil & Gas

MAY - 6 2013

REPORT OF LABORATORY ANALYSIS

Page 4 of 12

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



Pace Analytical Services, Inc.
1636 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5800

PROJECT NARRATIVE

Project: 193161-2013-W

Pace Project No.: 3091141

Method: EPA 901.1m

Description: 901.1 Gamma Spec

Client: Reliance Laboratories, Inc.

Date: April 22, 2013

General Information:

1 sample was analyzed for EPA 901.1m. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Received
Office of Oil & Gas

MAY - 6 2013

REPORT OF LABORATORY ANALYSIS

Page 5 of 12

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



Pace Analytical Services, Inc.
1838 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-6600

PROJECT NARRATIVE

Project: 193161-2013-W
Pace Project No.: 3091141

Method: EPA 903.1
Description: 903.1 Radium 226
Client: Reliance Laboratories, Inc.
Date: April 22, 2013

General Information:

1 sample was analyzed for EPA 903.1. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Received
Office of Oil & Gas

MAY - 6 2013

REPORT OF LABORATORY ANALYSIS

Page 6 of 12

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 193161-2013-W
Pace Project No.: 3091141

Method: EPA 904.0
Description: 904.0 Radium 228
Client: Reliance Laboratories, Inc.
Date: April 22, 2013

General Information:

1 sample was analyzed for EPA 904.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Received
Office of Oil & Gas

MAY - 6 2013

REPORT OF LABORATORY ANALYSIS

Page 7 of 12

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 193161-2013-W

Pace Project No.: 3091141

Sample: 193161-2013-W Lab ID: 3091141001 Collected: 03/20/13 11:00 Received: 04/05/13 09:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Bismuth-212	EPA 901.1m	83.371 ± 84.636 (137.400)	pCi/L	04/17/13 10:47	14913-49-6	
Bismuth-214	EPA 901.1m	1028.800 ± 115.510 (58.510)	pCi/L	04/17/13 10:47	14733-03-0	
Lead-212	EPA 901.1m	30.568 ± 13.383 (20.540)	pCi/L	04/17/13 10:47	15092-94-1	
Lead-214	EPA 901.1m	1109.300 ± 125.640 (28.710)	pCi/L	04/17/13 10:47	15087-28-4	
Potassium-40	EPA 901.1m	581.390 ± 143.610 (97.290)	pCi/L	04/17/13 10:47	13986-00-2	
Thallium-208	EPA 901.1m	10.318 ± 7.396 (11.800)	pCi/L	04/17/13 10:47	14913-50-9	
Thorium-234	EPA 901.1m	732.160 ± 168.320 (1183.000)	pCi/L	04/17/13 10:47	15065-10-8	
Uranium-235	EPA 901.1m	15.991 ± 25.647 (119.200)	pCi/L	04/17/13 10:47	15117-96-1	
Radium-226	EPA 903.1	3,054 ± 358 (0.762)	pCi/L	04/18/13 13:29	13982-63-3	
Radium-228	EPA 904.0	284 ± 51.6 (5.94)	pCi/L	04/18/13 14:21	15262-20-1	

Received
Office of Oil & Gas

MAY - 6 2013

QUALITY CONTROL DATA

Project: 183161-2013-W

Pace Project No.: 3091141

QC Batch: RADC/15340

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Associated Lab Samples: 3091141001

METHOD BLANK: 585470

Matrix: Water

Associated Lab Samples: 3091141001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	0.114 ± 0.315 (0.611)	pCi/L	04/18/13 12:34	

Received
Office of Oil & Gas

MA - 5 2013

Date: 04/22/2013 01:28 PM

REPORT OF LABORATORY ANALYSIS

Page 9 of 12

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 193161-2013-W

Pace Project No.: 3091141

QC Batch: RADC/15399

Analysis Method: EPA 901.1m

QC Batch Method: EPA 901.1m

Analysis Description: 901.1 Gamma Spec

Associated Lab Samples: 3091141001

METHOD BLANK: 587176

Matrix: Water

Associated Lab Samples: 3091141001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Bismuth-212	-33.524 ± 85.785 (126.100)	pCi/L	04/16/13 08:49	
Bismuth-214	7.023 ± 31.863 (58.580)	pCi/L	04/16/13 08:49	
Lead-212	2.590 ± 7.791 (14.500)	pCi/L	04/16/13 08:49	
Lead-214	0.188 ± 0.175 (18.580)	pCi/L	04/16/13 08:49	
Potassium-40	-73.763 ± 2950.500 (132.600)	pCi/L	04/16/13 08:49	
Thallium-208	1.275 ± 4.833 (8.784)	pCi/L	04/16/13 08:49	
Thorium-234	31.283 ± 459.030 (816.700)	pCi/L	04/16/13 08:49	
Uranium-235	42.213 ± 44.333 (42.030)	pCi/L	04/16/13 08:49	

Received
Office of Oil & Gas

MAY - 2013

Date: 04/22/2013 01:26 PM

REPORT OF LABORATORY ANALYSIS

Page 10 of 12

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 193161-2013-W

Pace Project No.: 3091141

QC Batch: RADC/15344

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Associated Lab Samples: 3091141001

METHOD BLANK: 565474

Matrix: Water

Associated Lab Samples: 3091141001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.172 ± 0.356 (0.797)	pCi/L	04/18/13 11:40	

Received
Office of Oil & Gas

MA: - 2013

Date: 04/22/2013 01:26 PM

REPORT OF LABORATORY ANALYSIS

Page 11 of 12

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALIFIERS

Project: 193161-2013-W
Pace Project No.: 3091141

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Received
Office of Oil & Gas

MAY - 5 2013

April 25, 2013

Hall Drilling, LLC
981 E. Washington, Ave.
Ellenboro, WV 26346

Attention: Susan Baldwin

Subject: Environmental Services Proposal
Groundwater Monitoring Well Installation and Development
UIC Well #3
Ellenboro, Ritchie County, West Virginia

Dear Ms. Baldwin,

On behalf of CORE Environmental Services, Inc. (CORE), we are pleased to provide this proposal and cost estimate for environmental services associated with the above referenced project. We appreciate the opportunity and look forward to assisting Hall Drilling, LLC (Hall Drilling) with this project.

Scope of Work

The proposed scope of work includes the following tasks:

Purpose: The purpose of the proposed scope of work is to satisfy the water quality monitoring requirements (section IV) of the West Virginia Department of Environmental Protection (WVDEP) guidance document, "Design and Construction Standards for Centralized Pits", as referenced in the WVDEP guidance, dated December 23, 2011 (attached).

Pre-Mobilization and HASP Preparation: Prior to mobilization to the site to initiate intrusive work, CORE will develop a site specific Health and Safety Plan (HASP) to address safety concerns and potential on-site hazards related to the proposed work scope. The HASP will be prepared in accordance to applicable Occupational Safety and Health Administrations (OHSA) guidelines, and provides emergency contact information and procedures to be followed in the event of an emergency.

At least 48 hours prior to commencing intrusive work, CORE will contact West Virginia's Miss Utility system and will provide the project-specific information needed for performance of the required utility mark-out. The mark-out service will identify subsurface utilities along the property frontage and the locations of known service laterals extending onto private property (if applicable). Miss utility does not identify private, on-site utility

locations.

Groundwater Monitoring Well Installation and Development: CORE will retain Chatfield Drilling, Inc. (Chatfield) and provide supervision during the installation of three shallow water table monitoring wells (MW-1 through MW-3) at the approximate locations indicated in Hall Drilling's UIC Impoundment and Groundwater Monitoring Plan, which establishes required construction details for the centralized impoundment pit. The monitoring wells will be situated hydraulically downgradient of the impoundment pit, in order to allow for detection of potential groundwater contamination from the contents of the pit. Estimated costs are based on the well locations being accessible with a truck mounted drill rig (track rig not required).

A CORE Field Technician will supervise the installation of the monitoring wells, provide site safety oversight and monitor the work area breathing zone with a calibrated photoionization detector (PID). CORE field personnel will keep in regular contact with the CORE Project Manager and provide details of the well installation activities as the work progresses.

CORE will supervise the installation of three 4-inch diameter monitoring wells to a sufficient depth to allow a standing water column which will accommodate the collection of groundwater samples from within the completed well casings. Costs included here are based on completion of the wells to 80 feet below ground surface (bgs), however the wells will be advanced to sufficient depth based on site conditions and the associated cost adjusted accordingly if greater depth is required.

Each well will be constructed with approximately 30 feet of 0.01 inch slotted PVC well screen and approximately 50 feet of solid 4-inch PVC riser, depending on site conditions. A clean sand filter pack will extend five feet above the screened interval in each well boring. The monitoring wells will be completed at the surface with high-visibility, lockable, protective steel casings, which will extend approximately four feet above surface grade. Drill cuttings generated during the monitoring well installation will be dispersed onsite at locations that will not affect the immediate work areas. Upon completion of the monitoring well installations, Chatfield personnel will develop each well by removing sediment-laden groundwater until minimal turbidity is achieved. Groundwater recovered during well development will be dispersed onsite at locations that will not affect the immediate work areas.

Following completion of the proposed field work, CORE will provide well construction documentation to Hall Drilling. Within five business days of receipt of documentation from the drilling contractor, CORE will provide an AutoCAD map showing approximate well locations, well construction logs, and a written summary of completion details.

Please note this proposal does not include costs for sampling the wells once completed. That proposal will be



CORE
ENVIRONMENTAL SERVICES, INC.

TITLE:
PROPOSED MONITORING WELL LOCATION MAP
HALL DRILLING UIC IMPOUNDMENT
ELLENBORO, WEST VIRGINIA

DWN:
CHKD:
DATE:

DES.
APPD:
REV.:

PROJECT NO.:
HAL-2013-151
FIGURE NO.:
1



RELIANCE LABORATORIES, INC.

ENVIRONMENTAL ANALYSTS AND CONSULTANTS

BRIDGEPORT, WV

www.RelianceLabs.net

MARTINSBURG, WV

Certifications:

WV Department of Health #: 00354, 00433 | WV Department of Environmental Protection #: 158, 181
MD Department of Environment #: 336, 337 | US Environmental Protection Agency #: WV00042, WV00901

HALL DRILLING
981 E. WASHINGTON AVE.

Wednesday, April 10, 2013

Page 2 of 3

ELLENBORO, WV 26346-

Lab Number: 193161-2013-W Sample ID: TECH SERVICE CENTER 3H

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
Analyte Group: <u>Inorganics</u>							
Total Lead	ND	mg/l	EPA 200.7	3/25/2013	11:08 T.Hanshaw	0.005	
pH	# 6.09	S.U.	SM4500H+B	3/27/2013	13:32 K.Davis		
Total Iron	113	mg/l	EPA 200.7	3/25/2013	11:08 T.Hanshaw	0.004	
Total Chloride	78976	mg/l	SM 4500CLB	3/27/2013	9:15 K.Davis	2.52	
Total Surfactant	12.8	mg/l	SM5540C	3/20/2013	15:00 K.Davis	0.02	
Total Aluminum	0.85	mg/l	EPA 200.7	3/25/2013	11:08 T.Hanshaw	0.009	
Total Dissolved Solids	127566	mg/l	SM 2540C	3/26/2013	10:15 C.Tomaro	10	
Total Suspended Solids	778	mg/l	SM2540D	3/26/2013	10:15 C.Tomaro	4	
Total Cadmium	ND	mg/l	EPA 200.7	3/25/2013	11:08 T.Hanshaw	0.002	
Total Chromium	ND	mg/l	EPA 200.7	3/25/2013	11:08 T.Hanshaw	0.006	
Total Barium	533	mg/l	EPA 200.7	3/25/2013	11:08 T.Hanshaw	0.003	
Total Manganese	6.87	mg/l	EPA 200.7	3/25/2013	11:08 T.Hanshaw	0.007	
Total Arsenic	0.78	mg/l	EPA 200.7	3/25/2013	11:08 T.Hanshaw	0.007	
Total Sodium	26900	mg/l	EPA 200.7	3/25/2013	11:08 T.Hanshaw	0.011	
Total Sulfate	250	mg/l	D516-02	3/22/2013	10:00 K.Davis	0.59	

Remarks:

Date Sample Collected: 3/20/2013 11:00
Sample Submitted By: J.STRICKLER
Date Sample Received: 3/20/2013 14:25

ND = Not Detected at the MDL or MRL

MDL - Minimum Detectable Limit

MRL - Minimum Reporting Limit

MCL - Maximum Contaminant Level, USEPA Regulated

[MCL] = Maximum Contaminant Level, Non-Regulated

*Method Code: STANDARD METHODS 19TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.

NOTE: #Holding time exceeded for this analysis.

Office of Oil & Gas

MA: - 6 2013

REL1001

MARY SHANLEY LEASE 80 AC.

LATITUDE $39^{\circ} 17' 30''$ W
LONGITUDE $81^{\circ} 00' 00''$

NORTH
BLUOR
HAYHURST
STONEPILL
SLAVERON
RUSKERS RUN

TOWN CENTER CENTER TO.63 AD. CUBT.
WELL REFERENCED

NO. 1
NO. 2
NO. 3
NO. 4
NO. 5
NO. 6
NO. 7
NO. 8
NO. 9
NO. 10
NO. 11
NO. 12
NO. 13
NO. 14
NO. 15
NO. 16
NO. 17
NO. 18
NO. 19
NO. 20
NO. 21
NO. 22
NO. 23
NO. 24
NO. 25
NO. 26
NO. 27
NO. 28
NO. 29
NO. 30
NO. 31
NO. 32
NO. 33
NO. 34
NO. 35
NO. 36
NO. 37
NO. 38
NO. 39
NO. 40
NO. 41
NO. 42
NO. 43
NO. 44
NO. 45
NO. 46
NO. 47
NO. 48
NO. 49
NO. 50
NO. 51
NO. 52
NO. 53
NO. 54
NO. 55
NO. 56
NO. 57
NO. 58
NO. 59
NO. 60
NO. 61
NO. 62
NO. 63
NO. 64
NO. 65
NO. 66
NO. 67
NO. 68
NO. 69
NO. 70
NO. 71
NO. 72
NO. 73
NO. 74
NO. 75
NO. 76
NO. 77
NO. 78
NO. 79
NO. 80
NO. 81
NO. 82
NO. 83
NO. 84
NO. 85
NO. 86
NO. 87
NO. 88
NO. 89
NO. 90
NO. 91
NO. 92
NO. 93
NO. 94
NO. 95
NO. 96
NO. 97
NO. 98
NO. 99
NO. 100

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 $1'' = 200'$

FILE NO. _____
DRAWING NO. _____
SCALE 1" = 800'
MINIMUM DEGREE OF
ACCURACY 1/200
PROVEN SOURCE OF
ELEVATION BM SOUTH OF LEASE
ELEV. = 886'

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 DEPARTMENT OF ENERGY.

(SIGNED) Mark C. Eckard

R.P.E. _____ L.L.S. 490

PLACE SEAT HERE

STATE OF WEST VIRGINIA
Division of Environmental Protection
OFFICE OF OIL AND GAS



DATE AUGUST 15, 2007
OPERATOR'S WELL NO. MARY SHANLEY NO. 9
API WELL NO. _____

47 - 085 - 09630
STATE COUNTY PERMIT

WELL TYPE: OIL GAS ☒ LIQUID INJECTION WASTE DISPOSAL
(IF "GAS.") PRODUCTION ☒ STORAGE DEEP SHALLOW ☒

LOCATION: ELEVATION 1055 WATER SHED MUSKOGEE RUN
DISTRICT CLAY COUNTY ATKIN

QUADRANGLE ELLENBORO 7.5'

SURFACE OWNER TECH SERVICE CENTER ACREAGE 70.00

OIL & GAS ROYALTY OWNER T.C. DAUGHERTY HRS. ET AL LEASE ACREAGE 80 AC.

LEASE NO. _____
PROPOSED WORK: DRILL ☒ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR
STIMULATE ☒ PLUG OFF OLD FORMATION ☐ PERFORATE NEW
FORMATION ☐ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON CLEAN OUT AND REPLUG
TARGET FORMATION DEVONIAN SHALE ESTIMATED DEPTH 8300'

WELL OPERATOR JAY BEE PRODUCTION CO. DESIGNATED AGENT RANDY BRODA

ADDRESS 1720 RT. 28 EAST
UNION, N.J. 07903

ADDRESS RT. 1 BOX 6
CAIRO, WV 26337

F. P. Benson 9

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas

Well Operator's Report of Well Work

Farm name: Shanley Operator Well No.: 6

LOCATION: Elevation: 1035 Quadrangle: Ellenboro

District: Clay County: Ritchie
Latitude: 850 Feet South of 39 Deg. 17 Min. 30 Sec.
Longitude 3720 Feet West of 81 Deg. 00 Min. 00 Sec.

Company: Jay-Bee Oil & Gas Inc.

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: 1720 Rt. 22 East				
Union, N.J. 07083				
Agent: Randy Broda	9 5/8	130	130	Cts
Inspector: Steve Mossor				
Date Permit Issued: 10/19/07	7	1840	1840	CTS
Date Well Work Commenced: 11/8/07				
Date Well Work Completed: 11/27/07	4 1/2			
Verbal Plugging:				
Date Permission granted on:				
Rotary x Cable Rig 30				
Total Depth (feet): 3420				
Fresh Water Depth (ft.): 75'				
Salt Water Depth (ft.): n/a				
Is coal being mined in area (N/Y)? n				
Coal Depths (ft.): n/a				

OPEN FLOW DATA

Producing formation Gordon, Injun Pay zone depth (ft) See Well Record

Gas: Initial open flow 40 MCF/d Oil: Initial open flow 35 Bbl/d

Final open flow 40 MCF/d Final open flow 5 Bbl/d

Time of open flow between initial and final tests Hours

Static rock Pressure N/A psig (surface pressure) after 96 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 CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed:
By: Randy Broda
Date: 3/1/08

DETAILS OF PERFORATED INTERVALS:
Natural

FORMATION	COLOR	HARD/SOFT TOP	BOTTOM	OIL GAS WATER	DEPTH	REMARKS
MISC. RED ROCK & SHALES		0	1892		130	9 5/8
LIME		1892	1856		1840	7
INJUN		1856	2072			
SHALE		2072	2395			
BEREA		2395	2398			
SHALE		2398	2855			
GORDON		2855	2868	OIL & GAS	3373	4 1/2
SHALE		2868	3420	TD	0	

SIGNED:
JAY-BEE PRODUCTION CO.
BY ITS: PRESIDENT
DATE: 3/1/2008

Ellenboro 9

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas
Discharge Monitoring Report
Oil and Gas General Permit

Company Name: Jay-Bee Oil & Gas Inc
API: :47-085-09569 County: Ritchie
District: Murphy
Farm Name: Border Well No: 9
Discharge Dates/s From:(MMDDYY) 05/01/08 TO:(MMDDYY) 05/06/08
Discharge Times : From TO
Disposal Option Utilized: UIC (2): Permit No. _____
Centralized Facility (5): Permit No. _____
Reuse (4): Alternate Permit Number: _____
Offsite Disposal(3): Site Location: _____
Land Application(1): x (Include a topographical map of the Area.)
Other method(6): (Include an explanation)
Follow Instructions below to determine your treatment category.
Optional Pretreatment test: Cl- mg/l DO Mg/l
1. Do you have permission to use expedited treatment from the
Director or his representative? (Y/N) n If yes
who? _____, and place a four (4) on line 7. If
not go to line 2
2. Was Frac Fluid or flowback put into the pit? (Y/N) y If yes
go to line 5 if not go to line 3
3. Do you have a chloride value pretreatment (see above)?
(Y/N) 2500 If yes go to line 4 if not go to line 5
4. Is that chloride level less than 5000 mg/l? (Y/N) n If yes
then enter a one (1) on line 7
5 Do you have a pretreatment value for DO? (See above) (Y/N) n
If yes then go to line 6 if not enter a three (3) in line 7.
6 Is that DO greater than 2.5 mg/l? (Y/N) If yes then enter a two
(2) on line 7 If not enter a three (3) on line 7.
7. 3 is the category of your pit. Use the Appropriate section.
Name of Principal Exec. Officer Randy Broda
Title of Officer President
Date Completed: 9/1/08

I certify under penalty of law that I have personally examined
and am familiar with the information submitted on this document and
all the 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.
Signature of a Principal Exec. Officer or Authorized agent

Signature



Parameter	PredischARGE		Discharge		Units
	Limit	Reported	Limits	Reported	
pH	6-10	8	6-10	11	S.U
Settling Time	20		N/A	N/A	Days
Fe	6		6	.38	ppm
D.O.	2.5		2.5		mg/l
Settleable Sol.	.5		.5	<.1	mg/l
Cl*	12,500	2,500	12,500	3,218	ppm
Oil	Trace		Trace		Obs.
TOC**			Monitor	8.8	ppm
Oil and Grease			Monitor	4.3	mg/l
Al***			Monitor	.15	mg/l
TSS			Monitor	3	ppm
Mn	Monitor		Monitor	.87	ppm
Volume			Monitor	10,000	Gals.
Flow			Monitor		Gals
Grease and Oil			Monitor		ppm
Disposal Area			Monitor	1	Acres

* Can Be 25,000 with inspectors approval,

(Inspector) _____ Date: _____

** Include a description of your aeration technique.

*** Al is only reported if the pH is above 9.0

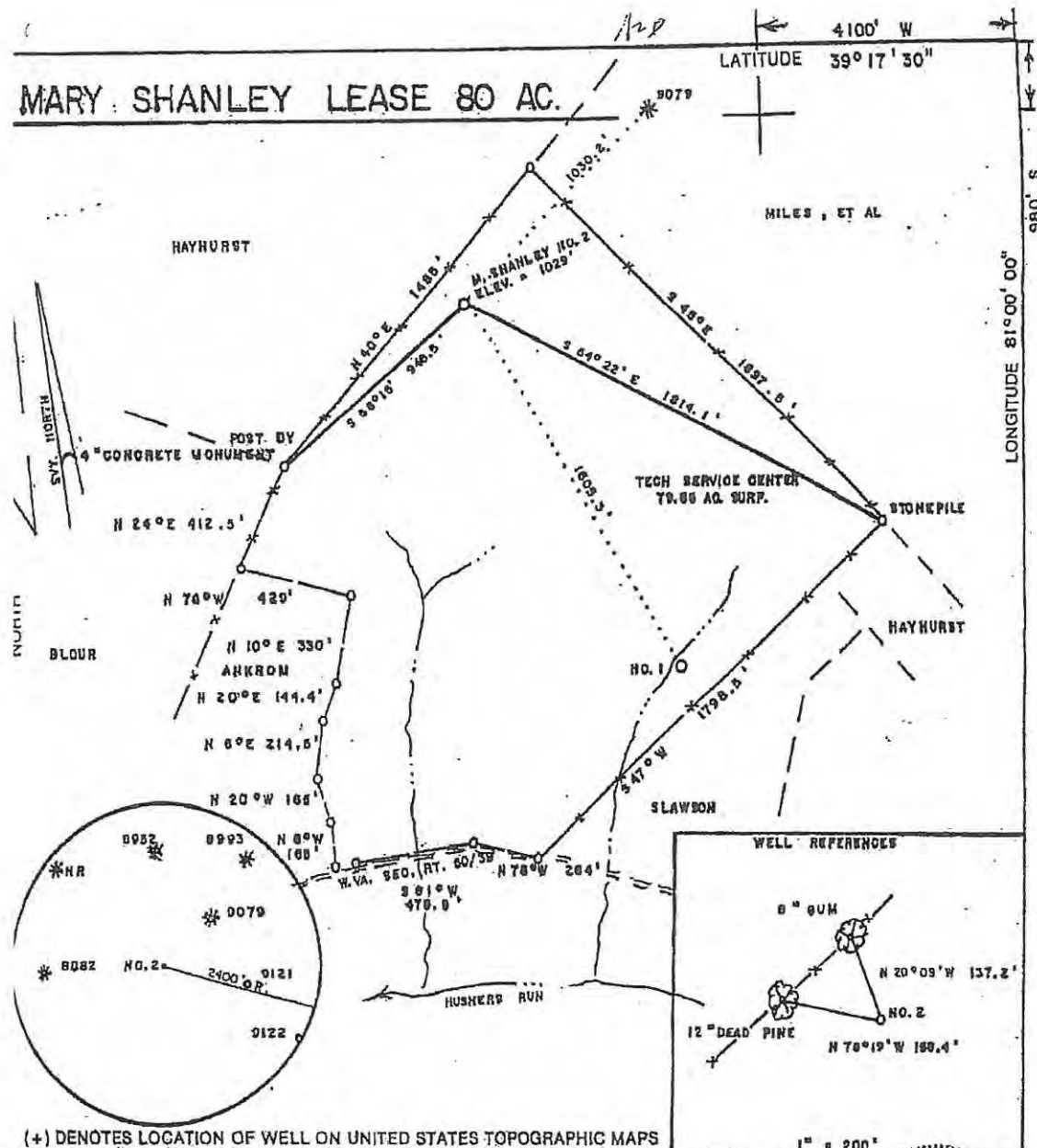
Category 4
Sampling Results
API NO :

Parameter	PredischARGE		Discharge		Units
	Limit	Reported	Limits	Reported	
pH	6-10		6-10		S.U
Settling Time	1		N/A	N/A	Days
Fe	Monitor		Monitor		mg/l
D.O.	Monitor		Monitor		mg/l
Settleable Sol.	Monitor		Monitor		mg/l
Cl*	12,500		12,500		mg/l
Oil	Trace		Trace		Obs.
TOC			Monitor		mg/l
TSS			Monitor		mg/l
Oil and Grease			Monitor		mg/l
Mn	Monitor		Monitor		mg/l
Volume			Monitor		Gals.
Flow			Monitor		Gals
Activated Carbon	.175		N/A	N/A	lb./bl
Date Site Reclaimed	N/A	N/A			10 Days from Dis.
Disposal Area			Monitor		Acres

* Can Be 25,000 with inspectors approval,

(Inspector) _____ Date: _____

MARY SHANLEY LEASE 80 AC.



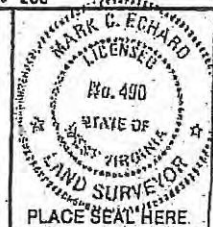
(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF
 ACCURACY 1/200
 PROVEN SOURCE OF
 ELEVATION BM SOUTH OF LEASE
 ELEV. = 886'

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 REGU-
 LATIONS ISSUED AND PRESCRIBED BY THE DEPART-
 MENT OF ENERGY.

(SIGNED) Mark C. Echard

R.P.E. _____ L.L.S. 490



STATE OF WEST VIRGINIA
 Division of Environmental Protection
 OFFICE OF OIL AND GAS



DATE MAY 22, 2006
 OPERATOR'S WELL NO. MARY SHANLEY NO. 2
 API WELL NO. _____

WELL TYPE: OIL ☐ GAS ☒ LIQUID INJECTION ☐ WASTE DISPOSAL ☐
 (IF "GAS,") PRODUCTION ☒ STORAGE ☐ DEEP ☐ SHALLOW ☒
 LOCATION: ELEVATION 1029' WATER SHED HUSHERS RUN
 DISTRICT CLAY COUNTY RITCHIE
 QUADRANGLE ELLENBORD
 SURFACE OWNER TECH SERVICE CENTER ACREAGE 79.88
 OIL & GAS ROYALTY OWNER T.C. DAUGHERTY HRS. ET AL LEASE ACREAGE 80 AC.
 LEASE NO. _____
 PROPOSED WORK: DRILL ☐ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR
 STIMULATE ☒ PLUG OFF OLD FORMATION ☐ PERFORATE NEW
 FORMATION ☒ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG ☐
 TARGET FORMATION 815 IN JON ESTIMATED DEPTH 2000'
 WELL OPERATOR JAY BEE PRODUCTION CO. DESIGNATED AGENT RANDY BRODA
 ADDRESS 1720 RT. 22 EAST ADDRESS RT. 1 BOX 5

COUNTY NAME

PERMIT

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas

br

Well Operator's Report of Well Work

Farm name: Shanley Operator Well No.: 2

LOCATION: Elevation: 1029 Quadrangle: Ellenboro

District: Clay County: Ritchie
Latitude: 980 Feet South of 39 Deg. 17 Min. 30 Sec.
Longitude 4100 Feet West of 81 Deg. 00 Min. 00 Sec.

Company: Jay-Bee Oil & Gas Inc.

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: 1720 Rt. 22 East				
Union, N.J. 07083				
Agent: Randy Broda	9 5/8	130	130	Cts
Inspector: Steve Mossor				
Date Permit Issued: 5/13/05	7	1231	1231	50 sks
Date Well Work Commenced: 5/23/05				
Date Well Work Completed: 6/3/05				
Verbal Plugging:				
Date Permission granted on:				
Rotary x Cable Rtg 30				
Total Depth (feet): 5350				
Fresh Water Depth (ft.): 75'				
Salt Water Depth (ft.): n/a				
Is coal being mined in area (N/Y)? n				
Coal Depths (ft.): n/a				

OPEN FLOW DATA

Producing formation Injun Pay zone depth (ft) See Well Record
Gas: Initial open flow 80 MCF/d Oil: Initial open flow Bbl/d
Final open flow 80 MCF/d Final open flow Bbl/d
Time of open flow between initial and final tests Hours
Static rock Pressure 560 psig (surface pressure) after 96 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 CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: [Signature]
By: Randy Broda
Date: 8/1/05

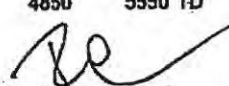
Ellenboro 9

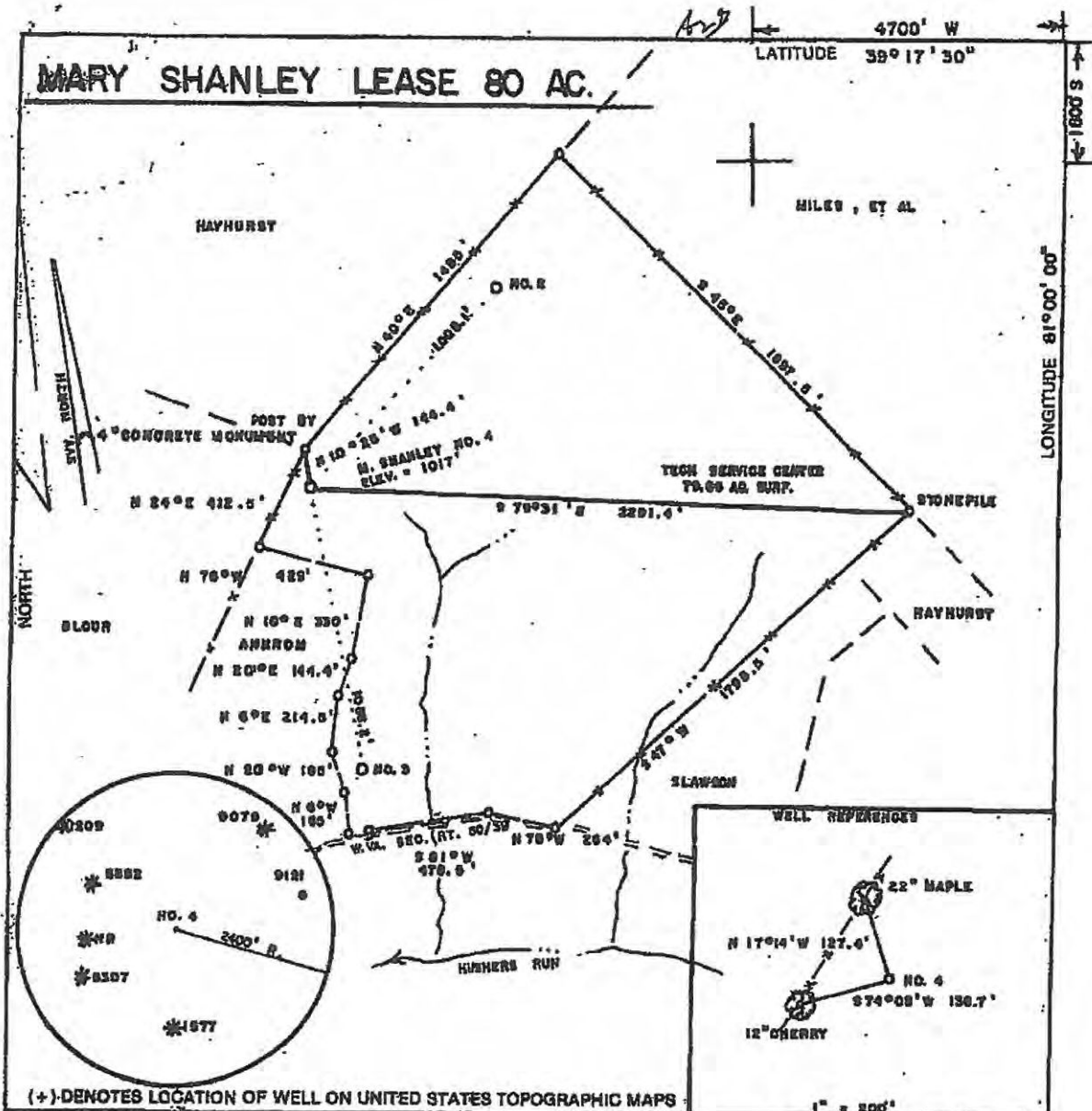
WELL RECORD

Shanley 2
 PERMIT # 47-085-09171
 elevation 1029

DETAILS OF PERFORATED INTERVALS:
 none

FORMATION	COLOR	HARD/SOFT	TOP	BOTTOM	OIL	GAS	WATER	DEPTH	REMARKS
MISC. RED ROCK & SHALES			0	1259				130	9 5/8
SAND			1259	1372					
SHALE			1372	1480				1219	7
SAND			1480	1542					
RATTY SAND			1542	1630					
SHALE			1630	1676					
SAND			1676	1748					
SHALE			1748	1802					
SAND			1802	1819					
SHALE			1819	1838					
LIME			1838	1842					
SAND			1842	1872					
LIME			1872	1940					
INJUN			1940	2054	gas			1945	
SHALE			2054	2334					
WIER			2334	2402					
SHALE			2402	2846					
GORDON			2846	2856					
SHALE			2856	3434					
WARREN			3434	3500					
SHALE			3500	3719					
BALLTOWN			3719	4051					
SHALE			4051	4494					
RILEY			4494	4538					
SHALE			4538	4730					
2nd RILEY			4730	4758					
SHALE			4758	4847					
BENSON			4847	4850					
SHALE			4850	5550	TD				

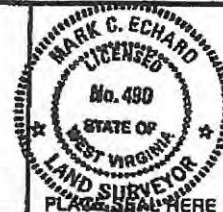
SIGNED: 
JAY-BEE PRODUCTION CO.
 BY ITS: PRESIDENT
 DATE: 8/1/2005



FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF
 ACCURACY 1/200
 PROVEN SOURCE OF
 ELEVATION 8M SOUTH OF LEASE
 ELEV. = 886'

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 REGU-
 LATIONS ISSUED AND PRESCRIBED BY THE DEPART-
 MENT OF ENERGY.

(SIGNED) Mark C. Echard
 R.P.E. I.L.S. 490



<p>STATE OF WEST VIRGINIA Division of Environmental Protection OFFICE OF OIL AND GAS</p> <p style="text-align: center;"></p> <p>DATE <u>JANUARY 27, 2005</u> OPERATOR'S WELL NO. <u>MARY SHANLEY NO. 4</u> API WELL NO. <u>47-085-09173</u></p> <p>WELL TYPE: OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> (IF "GAS," PRODUCTION <input checked="" type="checkbox"/> STORAGE <input type="checkbox"/> DEEP <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> LOCATION: ELEVATION <u>1017'</u> WATERSHED <u>HUGHES RUN</u> DISTRICT <u>CLAY</u> COUNTY <u>RITCHIE</u> QUADRANGLE <u>ELLENBORO</u> SURFACE OWNER <u>TECH SERVICE CENTER</u> ACREAGE <u>79.88</u> OIL & GAS ROYALTY OWNER <u>T.C. DAUGHERTY HRS., ET AL</u> LEASE ACREAGE <u>80 AC.</u> LEASE NO. _____ PROPOSED WORK: DRILL <input checked="" type="checkbox"/> CONVERT <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input checked="" type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/> OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____ PLUG AND ABANDON <input type="checkbox"/> CLEAN OUT AND REPLUG <input type="checkbox"/> TARGET FORMATION <u>DEVONIAN</u> ESTIMATED DEPTH <u>5980'</u> WELL OPERATOR <u>JAY BEE PRODUCTION CO.</u> DESIGNATED AGENT <u>RANDY BRODA</u> ADDRESS <u>1720 RT. 22, RAWE</u> ADDRESS <u>RT. 1 BOX 8</u> <u>UNION, NJ 07085</u> <u>CAIRO, WV 26357</u></p>	<p style="text-align: right;">COUNTY NAME</p> <p style="text-align: right;">PERMIT</p>
--	--

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas

M

Well Operator's Report of Well Work

Farm name: Shanley Operator Well No.: 4

LOCATION: Elevation: 1017 Quadrangle: Ellenboro

District: Clay County: Ritchie
Latitude: 1080 Feet South of 39 Deg. 17 Min. 30 Sec.
Longitude 4700 Feet West of 81 Deg. 00 Min. 00 Sec.

Company: Jay-Bee Oil & Gas Inc.

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: <u>1720 Rt. 22 East</u>				
Union, N.J. <u>07083</u>				
Agent: <u>Randy Broda</u>	<u>9 5/8</u>	<u>130</u>	<u>130</u>	<u>Cts</u>
Inspector: <u>Steve Messer</u>				
Date Permit Issued: <u>5/13/05</u>	<u>7</u>	<u>1223</u>	<u>1223</u>	<u>50 sks</u>
Date Well Work Commenced: <u>6/4/05</u>				
Date Well Work Completed: <u>6/11/05</u>	<u>4 1/2</u>	<u>2344</u>	<u>2344</u>	<u>105 sks</u>
Verbal Plugging:				
Date Permission granted on:				
Rotary x Cable <u>Big 30</u>				
Total Depth (feet): <u>2970</u>				
Fresh Water Depth (ft.): <u>75'</u>				
Salt Water Depth (ft.): <u>n/a</u>				
Is coal being mined in area (N/Y)? <u>n</u>				
Coal Depths (ft.): <u>n/a</u>				

OPEN FLOW DATA

Producing formation Injun, Maxton Pay zone depth (ft) See Well Record
Gas: Initial open flow 20 MCF/d Oil: Initial open flow 0 Bbl/d
Final open flow 40 MCF/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests 72 Hours
Static rock Pressure 540 psig (surface pressure) after 96 Hours

RECEIVED
Office of Oil & Gas
Permitting

SEP 14 2005

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 CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed:

By: Randy Broda
Date: 8/1/05

WELL RECORD

Shanley 4

PERMIT # 47-085-09173

elevation

1017

DETAILS OF PERFORATED INTERVALS:

2021 1928 250 SACKS FOAM
1700 1698 1000 gals acid

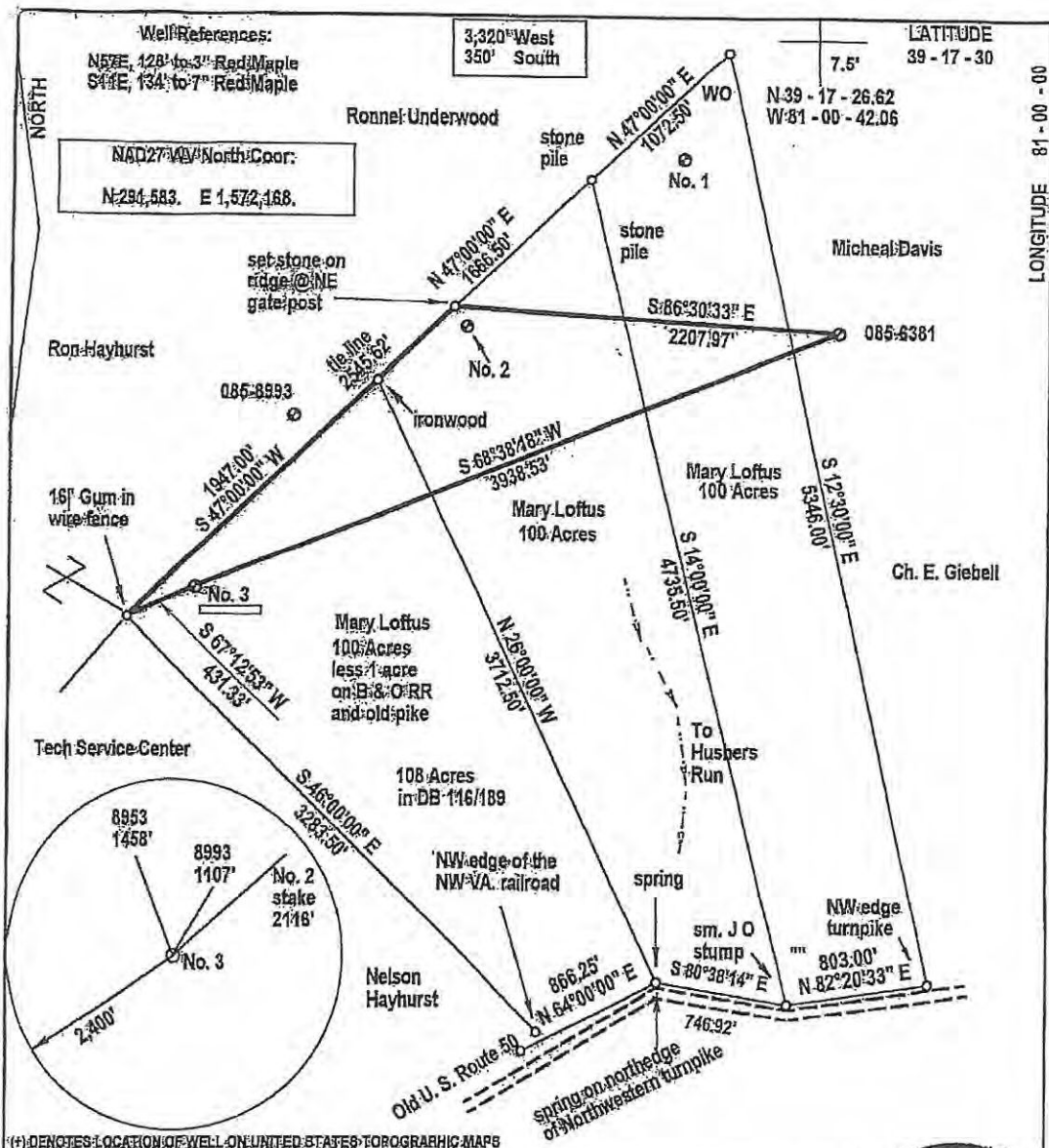
<u>FORMATION</u>	<u>COLOR</u>	<u>HARD/SOFT</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>OIL</u>	<u>GAS</u>	<u>WATER</u>	<u>DEPTH</u>	<u>REMARKS</u>
MISC. RED ROCK & SHALES			0	1248				130	9 5/8
SAND			1248	1365				1207	7
SHALE			1365	1438					
SAND			1438	1483					
SHALE			1483	1540					
RATTY SAND			1540	1604					
SHALE			1604	1650					
SAND			1650	1740					
SHALE			1740	1812					
RATTY SAND			1812	1820					
LIME			1820	1824					
SAND			1824	1854					
LIME			1854	1910					
INJUN			1910	2048 gas				2018	
SHALE			2048	2280					
WIER			2280	2372					
SHALE			2372	2970 td				4 1/2 set @ 2544	

SIGNED:

JAY-BEE PRODUCTION CO.

BY ITS: PRESIDENT

DATE: 8/1/2005



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

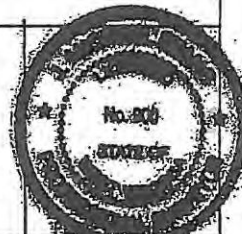
FILE NUMBER: **085-6381**
DRAWING NUMBER: **W-24-P-12**
SCALE: **1" = 800' feet**
MINIMUM DEGREE OF ACCURACY: **1 in 2500**
PROVEN SOURCE OF ELEVATION: **DGPS Survey (sub-meter)**

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 DEPARTMENT OF ENERGY.

(SIGNED)

J. Michael Evans

J. Michael Evans, PS 900



STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
#101 MOUNTAIN ROAD
NITRO, WV 25443-2506
FORM WVG-6

LAND SURVEYING SERVICES
21 CEDAR LANE, BRIDGEPORT, WV 26330
PHONE: 304-842-2018 OR 842-5762

DATE: **June 8, 2004**

OPERATORS WELL NO.: **Raines No. 3**

API WELL NO. **B-248**

STATE **47** COUNTY **085** PERMIT **69079**

WELL TYPE: OIL ☐ GAS ☒ LIQUID INJECTION ☐ WASTE DISPOSAL ☐
(IF "GAS") PRODUCTION ☒ STORAGE ☐ DEEP ☐ SHALLOW ☒

LOCATION: ELEVATION **1,084'** WATERSHED **Hushers Run**

DISTRICT **Clay** COUNTY **Ritchie**

QUADRANGLE **Ellenboro** LEASE NUMBER **104.571**

SURFACE OWNER **Anna Delores Scull Mrs. & Assigns**

OIL & GAS ROYALTY OWNER **Mary Loftus**

PROPOSED WORK: DRILL ☒ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☐ PLUG OFF OLD FORMATION ☐
PERFORATE NEW FORMATION ☐ OTHER PHYSICAL CHANGE (SPECIFY) ☐

TARGET FORMATION **Benson** PLUG & ABANDON ☐ CLEAN-OUT & REPLUG ☐
ESTIMATED DEPTH **5400**

WELL OPERATOR **BOWIE, Incorporated** DESIGNATED AGENT **William Bowie**
ADDRESS **RL 1, Box 559, Clarksburg, WV 26301** ADDRESS **RL 1, Box 559, Clarksburg, WV 26301**

Ellenboro 9

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

Well Operator's Report of Well Work

Farm Name: Raines, James

Operator Well No.:

RAINES # 3

B-248

LOCATION: Elevation: 1084

Quadrangle: Ellenboro

District: Clay

County: Ritchie

Latitude: 350 Feet South of 39 Deg. 17 Min. 30 Sec.

Longitude: 3320 Feet West of 81 Deg. 0 Min. 0 Sec.

Company: BOWIE, INC.

PO DRAWER 1430

CLARKSBURG, WV 26302-1430

Agent: William Bowie

Inspector: Steve Mossor

Permit Issued: 6/17/2004

Well Work Commenced: 7/12/2004

Well Work Completed: 7/15/2004

Verbal Plugging

Permission granted on: na

Rotary: ☒ Cable: ☐ Rig

Total Depth (feet): 3050

Fresh Water Dept na

Salt Water Depth na

Is Coal Being Mined in the Area? (Y/N) N

Coal Depths (ft): na

OPEN FLOW DATA

Producing formation Natural Well

Pay zone depth (ft)

Gas: Initial open flow: 2300 MCF/day Oil: Initial open flow: na BBL/day

Final open flow: 2300 MCF/day Final open flow: na BBL/day

Time of open flow between initial and final tests: 24 Hours

Static Rock Pressure: 900 psig (surface pressure) after 24 Hours

Producing formation

Pay zone depth (ft)

Gas: Initial open flow: MCF/day Oil: Initial open flow: BBL/day

Final open flow: MCF/day Final open flow: BBL/day

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 CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: BOWIE, INC.

By:

William C. Bowie

Date:

8/30/2004

BOWIE #: 248

RAINES 3

Fracture
Record:

FORMATION

COMMENT

Natural Well - Not Logged

- Gas odor while drilling, Natural was noticed at TD

Ellenboro 9