



west virginia department of environmental protection

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

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

March 20, 2014

WELL WORK PERMIT

Horizontal Well

This permit, API Well Number: 47-1502897, issued to CUNNINGHAM ENERGY, LLC, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

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

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

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



James Martin
Chief

Operator's Well No: J.S. COCHRAN #4H
Farm Name: CHESSIE CONNER, ET AL
API Well Number: 47-1502897
Permit Type: Horizontal Well
Date Issued: 03/20/2014

Promoting a healthy environment.

03/21/2014

PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR § 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR § 4-19.1.c, if the operator is unable to sample and analyze any water well or spring within one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
5. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours.
7. Well work activities shall not constitute a hazard to the safety of persons.
8. Hydraulic Fracturing of the Cochran # 4H (API: 47-015-02897) must not exceed 3500 PSI and abide by the terms of the Fracking Plan Addendum attached to this permit.
9. Notification must be given to the local inspector at least five (5) days before fracturing and it must include a copy of the Cochran # 4H Hydraulic Fracturing Plan.

1502897H
 C-8487
 65000

WW - 2B
 (Rev. 8/10)

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

1) Well Operator: CUNNINGHAM ENERGY, LLC 494508594 13 05 334
 Operator ID County District Quadrangle

2) Operator's Well Number: J.S. COCHRAN 4H 3) Elevation: 1,215'

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

5) Proposed Target Formation(s): BIG INJUN Proposed Target Depth: 2100'

6) Proposed Total Depth: 5143' Feet Formation at Proposed Total Depth: INJUN

7) Approximate fresh water strata depths: 200'

8) Approximate salt water depths: 1475' - 1525'

9) Approximate coal seam depths: NO COAL LISTED ON TITLE

10) Approximate void depths,(coal, Karst, other): NONE

11) Does land contain coal seams tributary to active mine? NONE

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)
DRILL AND STIMULATE A NEW SHALLOW HORIZONTAL WELL - please see attached

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 Office of Oil and Gas

13) 1/10/14 **CASING AND TUBING PROGRAM** JAN 15 2014

| TYPE | SPECIFICATIONS | | | FOOTAGE | INTERVALS | CEMENT |
|--------------|----------------|-------|---------------|---------|-----------|-------------------------------------|
| | Size | Grade | Weight per ft | | | |
| Conductor | 13" | LS | 43.6 LBS | 30' | 30' | CTS |
| Fresh Water | 9 5/8" | LS | 26 LBS | 400' | 400' | CTS |
| Coal | | | | | | |
| Intermediate | 7" | J-55 | 20LBS | 1775' | 1775' | CTS |
| Production | 4 1/2" | N-80 | 11.6LBS | 5143' | 5143' | 3868' <u>Packer Plus</u> |
| Tubing | | | | | | |
| Liners | | | | | | |

Packers: Kind: _____
 Sizes: _____
 Depths Set _____

1.) Date: DECEMBER 23, 2013
 2.) Operator's Well Number JS COCHRAN 4H
 State County Permit
 3.) API Well No.: 47- _____ - _____

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

| | |
|---|------------------------------------|
| 4) Surface Owner(s) to be served: | 5) (a) Coal Operator |
| (a) Name <u>CHESSIE CONNER, ET AL</u> <i>W</i> | Name _____ |
| Address <input checked="" type="checkbox"/> <u>1412 SATTES CIRCLE</u> | Address _____ |
| <u>NITRO, WV 25143</u> | _____ |
| (b) Name _____ | (b) Coal Owner(s) with Declaration |
| Address _____ | Name _____ |
| _____ | Address _____ |
| (c) Name _____ | Name _____ |
| Address _____ | Address _____ |
| _____ | _____ |
| 6) Inspector <u>Ed Gainer</u> | (c) Coal Lessee with Declaration |
| Address <u>P.O. Box 821</u> | Name _____ |
| <u>Spencer, WV 25276</u> | Address _____ |
| Telephone <u>304-389-7582</u> | _____ |

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas
OR
 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)
 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 Operator CUNNINGHAM ENERGY, LLC
 By: RYAN E. M. CUNNINGHAM
 Title: PRESIDENT
 Address: 3230 PENNSYLVANIA AVENUE
CHARLESTON, WV 25302
 Telephone: 304-344-9291

Subscribed and sworn before me this 10th day of January, 2014.
Danielle N. Bays Notary Public

My Commission Expires 2/10/2015
 Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov

03/21/2014

WW-2A Surface Waiver

SURFACE OWNER WAIVER

County CLAY

Operator
Operator well number

CUNNINGHAM ENERGY, LLC
JS COCHRAN 4H

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 a 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

FOR EXECUTION BY A CORPORATION, ETC.

Jean E. Miller
Signature

Jean E. Miller
Print Name

Date 1-16-14

Company Name _____
By _____
Its _____

Received

Date

Signature JAN 16 2014
Date

Office of Oil and Gas
WV Dept. of Environmental Protection

✓ 7012 3460 0002 4924 4978

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OFFICIAL USE

| | |
|---|----------------|
| Postage | \$ 1.52 |
| Certified Fee | 3.10 |
| Return Receipt Fee (Endorsement Required) | 2.55 |
| Restricted Delivery Fee (Endorsement Required) | |
| Total Postage & Fees | \$ 7.17 |



4-H

Sent To: Chessie Conner et al.
 Street, Apt. No. or PO Box No.: 1412 Sattes Circle
 City, State, ZIP+4: NHam, WV 25143

PS Form 3800, August 2006 See Reverse for Instructions

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 WV Department of
 Environmental Protection

1502897H

7032 3460 0002 4924 4947

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| | |
|---|----------------|
| Postage | \$ 1.40 |
| Certified Fee | 3.10 |
| Return Receipt Fee (Endorsement Required) | 2.55 |
| Restricted Delivery Fee (Endorsement Required) | |
| Total Postage & Fees | \$ 6.11 |



4-H

Sent To Thomas Rickmers
 Street, Apt. No.,
 or PO Box No. 1484 Shelton Rd.
 City, State, ZIP+4 Bowmont, WV 25030

PS Form 3800, August 2006 See Reverse for Instructions

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 Office of Oil and Gas
 JAN 15 2014
 WV Department of
 Environmental Protection

03/21/2014

WW-2A Coal Waiver

COAL OPERATOR, OWNER, OR LESSEE WAIVER

County CLAY
Operator CUNNINGHAM ENERGY, LLC Operator's Well Number JS COCHRAN 4H

INSTRUCTIONS TO COAL OPERATOR, OWNER, OR LESSEE

To the coal operator, owner, or lessee named on page WW2-A. You are hereby notified that any objection you wish to make or are required to make by WV Code 22-6-15, 16 or 17, must be filed with the Chief of the Office of Oil and Gas within fifteen (15) days after the receipt of this application by the Office. Mail objections to:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0499 extension 1654

WAIVER

The undersigned coal operator _____ / owner _____ / lessee _____ / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

| | | | | |
|-----------|------|--|--------------|------|
| | Date | | Company Name | |
| Signature | | | By | |
| | | | Its | Date |
| | | | | |
| | | | Signature | Date |

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Office of Oil and Gas
JAN 15 2014
WV Department of
Environmental Protection

**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 |
|-----------------------|------------------------|---------|------------------|
| ALVIN ENGELKE, AGENT | CUNNINGHAM ENERGY, LLC | 1/8 | 21/1065; 21/1189 |

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

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

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

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

Well Operator:
By: Its:

RYAN E. M. CUNNINGHAM
CUNNINGHAM ENERGY, LLC
PRESIDENT

[Signature]
JAN 15 2014
WV Department of
Environmental Protection

WW-2B1
(5-12)

Well No. JS COCHRAN 6H

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.

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

Listed below is the laboratory chosen by operator to perform analysis, and contactor chosen to collect sample.

Certified Laboratory Name STURM ENVIRONMENTAL
Sampling Contractor HUPP SURVEYING

Well Operator CUNNIGHAM ENERGY, LLC
Address 3230 PENNSYLVANIA AVENUE
CHARLESTON, WV 25302
Telephone 304-344-9291

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, the Chief may require the operator to test wells up to 2000 feet from the proposed site.

HUPP Surveying & Mapping
P.O. BOX 647
GRANTSVILLE, WV 26147
(304) 354-7035 hupp@frontiernet.net FAX: (304) 354-6548

November 18, 2013

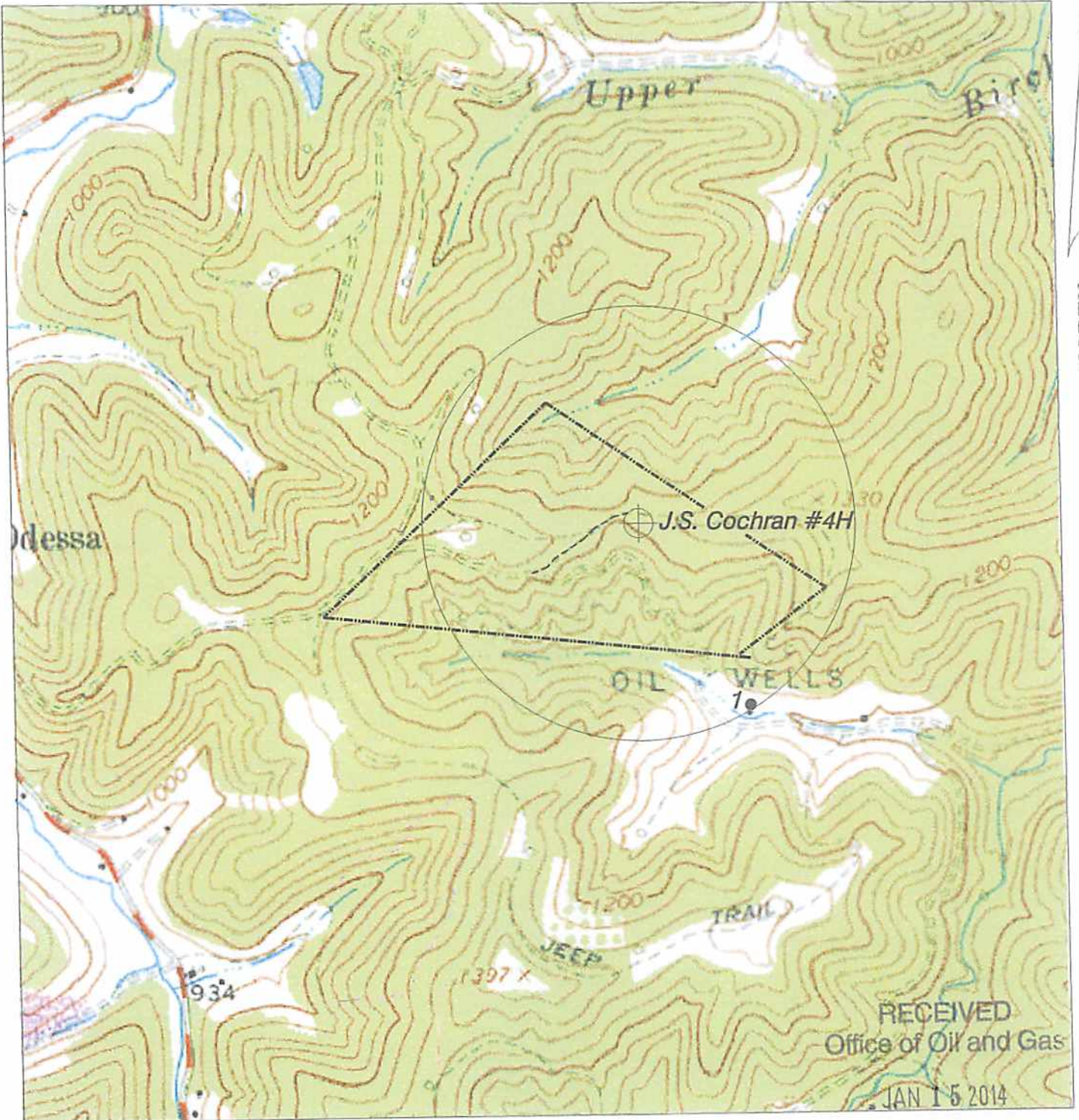
RE: Water Samples for J.S. Cochran #4H

There appears to be one (1) potable water sources within 1,500' of J.S. Cochran #4H, therefore tests should be offered and samples taken as required.

1. Thomas Rickmers
✓ 1484 Shelton Rd.
Bomont, WV 25030
Tax Map 18 Parcel 4

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WV Department of
Environmental Protection
03/21/2014

CUNNINGHAM ENERGY J.S. Cochran #4H Water



NORTH

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Office of Oil and Gas
JAN 15 2014

HUPP Surveying & Mapping

P.O. BOX 647 GRANTSVILLE, WV 26147
PH: (304)354-7035 E-MAIL: hupp@frontiernet.net

1" = 1000'
Elkhurst Quad

WV Department of
Environmental Protection
Cunningham Energy, LLC.
3230 Pennsylvania Ave.
Charleston, WV 25302

03/21/2014

1502897H

WW-9
(5/13)

Page _____ of _____
API Number 47 - _____ - _____
Operator's Well No. JS COCHRAN 4H

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name CUNNINGHAM ENERGY, LLC OP Code _____

Watershed (HUC 10) TRIBUTARY OF WADE FORK Quadrangle ELKHURST 7.5'

Elevation 1,215' County CLAY District UNION

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

Will a pit be used for drill cuttings? Yes X No _____

If so, please describe anticipated pit waste: DRILL CUTTING, FLUIDS FROM DRILLING AND FRACTURING

Will a synthetic liner be used in the pit? Yes X No _____ If so, what ml.? 30 mil.

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number _____)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Will closed loop system be used? NO

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. AIR, FRESHWATER

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

Additives to be used in drilling medium? SOAP; KCL and/or CLAY STABILIZER

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. LEAVE IN PIT

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

-Landfill or offsite name/permit number? N/A

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

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

Company Official Signature _____
Company Official (Typed Name) RYAN E. M. CUNNINGHAM
Company Official Title PRESIDENT

Subscribed and sworn before me this 10th day of January, 2014

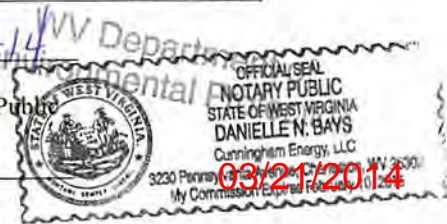
Daniel N. Bays

Notary Public

My commission expires 02/10/2015

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Office of Oil and Gas

JAN 15 2014



Form WW-9

Operator's Well No. JS COCHRAN 4H

Proposed Revegetation Treatment: Acres Disturbed 1.5 Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 1/3 TON lbs/acre (500 lbs minimum)

Mulch HAY - 2 Tons/acre

Seed Mixtures

| Area I | | Area II | |
|---------------|----------|---------------|----------|
| Seed Type | lbs/acre | Seed Type | lbs/acre |
| KY 31 | 40 | ORCHID GRASS | 15 |
| ALSIKE CLOVER | 5 | ALSIKE CLOVER | 5 |
| ANNUAL RYE | 15 | | |

Attach:
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: 

Comments: Sediment control to be in place before rig moves to location. Sediment control to be maintained at all times.

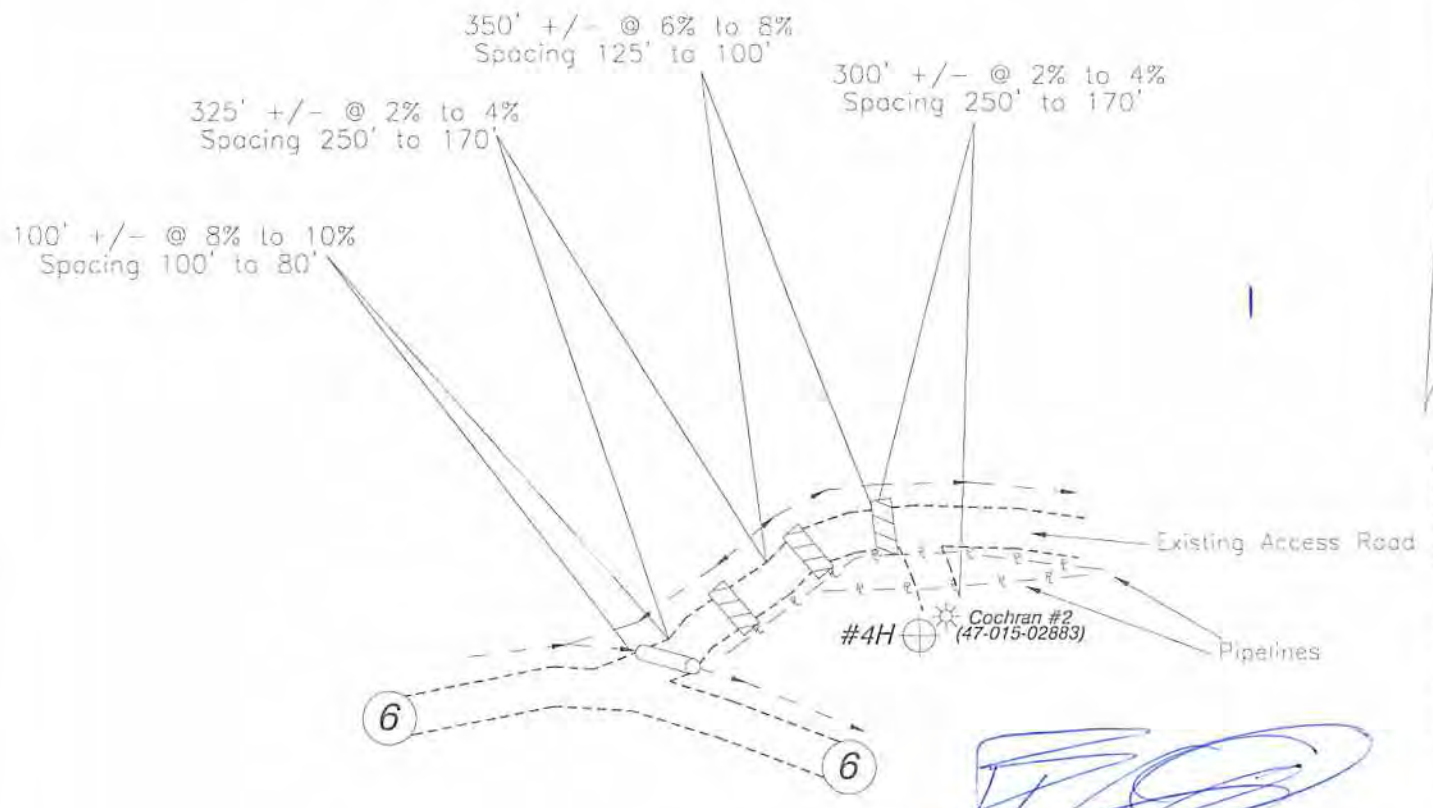
Title: Inspector Date: 1/10/14

Field Reviewed? Yes No

RAVEN RIDGE ENERGY, LLC. J.S. COCHRAN #4H

Form W-9

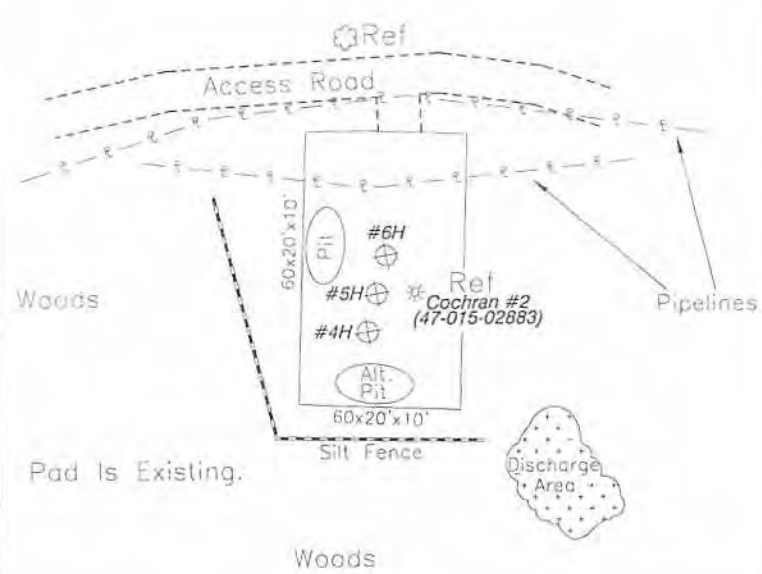
Page 1 of 1



[Handwritten Signature]
1/10/14

Drawing Not To Scale NORTH

Detail Sketch for J.S. Cochran #4H



Road Is An Existing Access Road.
Upgrade Drainage Devices Where Needed.
Pad Is Existing.

Install Minimum 12" Culvert

ALL ROADS SHOWN HEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH DEP OIL AND GAS BMP MANUAL ENTRANCES AT COUNTY/STATE ROADS SHALL BE MAINTAINED IN ACCORDANCE WITH WV DOT REGULATIONS SEPARATE PERMITS MAY BE REQUIRED BY THE DOT

SEDIMENT BASINS, TRAPS AND APPROPRIATE EROSION CONTROL BARRIERS ARE TO BE CONSTRUCTED AT ALL CULVERT AND CROSS DRAIN INLETS AND OUTLETS AS REQUIRED IN THE WV DEP OIL AND GAS BMP MANUAL FIELD CONDITIONS (ROCK OUTCROPS AND BEDROCK) MAY PROHIBIT INLET TRAPS BEING INSTALLED WHEN THESE CONDITIONS EXIST, ADDITIONAL EROSION CONTROL MEASURES SHALL BE EVALUATED AND UTILIZED

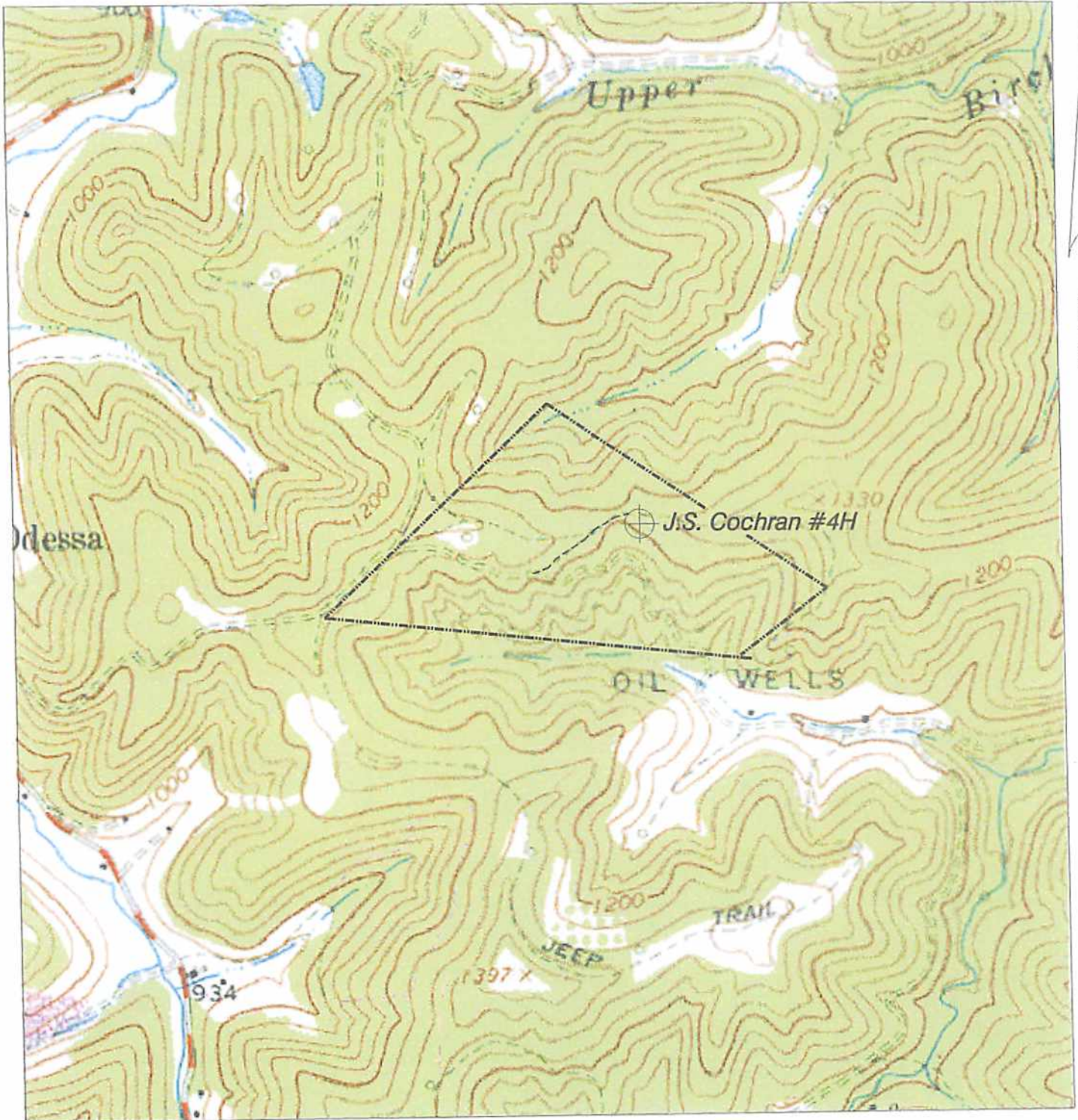
EARTHWORK CONTRACTORS ARE RESPONSIBLE FOR NOTIFYING TO THE OPERATOR AND INSPECTOR PRIOR TO ANY DEVIATION FROM THIS PLAN

CONTRACTORS/COMPANY ARE RESPONSIBLE FOR LOCATING UTILITIES WHETHER SHOWN ON THIS PLAN OR NOT

TEMPORARILY SEED AND MULCH ALL SLOPES AFTER CONSTRUCTION OF LOCATION CUT AND STACK ALL TIMBER ABOVE 6-INCHES IN DIAMETER AND THICKER. STACK BRUSH BELOW LOCATION FOR SEDIMENT CONTROL.

| | | | |
|--|-------------|---------------|-------------------------|
| HUPP Surveying & Mapping | Drafted BY: | Date Drafted: | Job Number: |
| P.O. BOX 647 GRANTSVILLE, WV 26147 PH. (304)354-7035 E-MAIL: hupp@frontiernet.net | DB | 11/18/13 | 03/21/2014 W20122136 |

CUNNINGHAM ENERGY J.S. Cochran #4H



NORTH

HUPP Surveying & Mapping

P.O. BOX 647 GRANTSVILLE, WV 26147
PH: (304)354-7035 E-MAIL: hupp@frontiernet.net

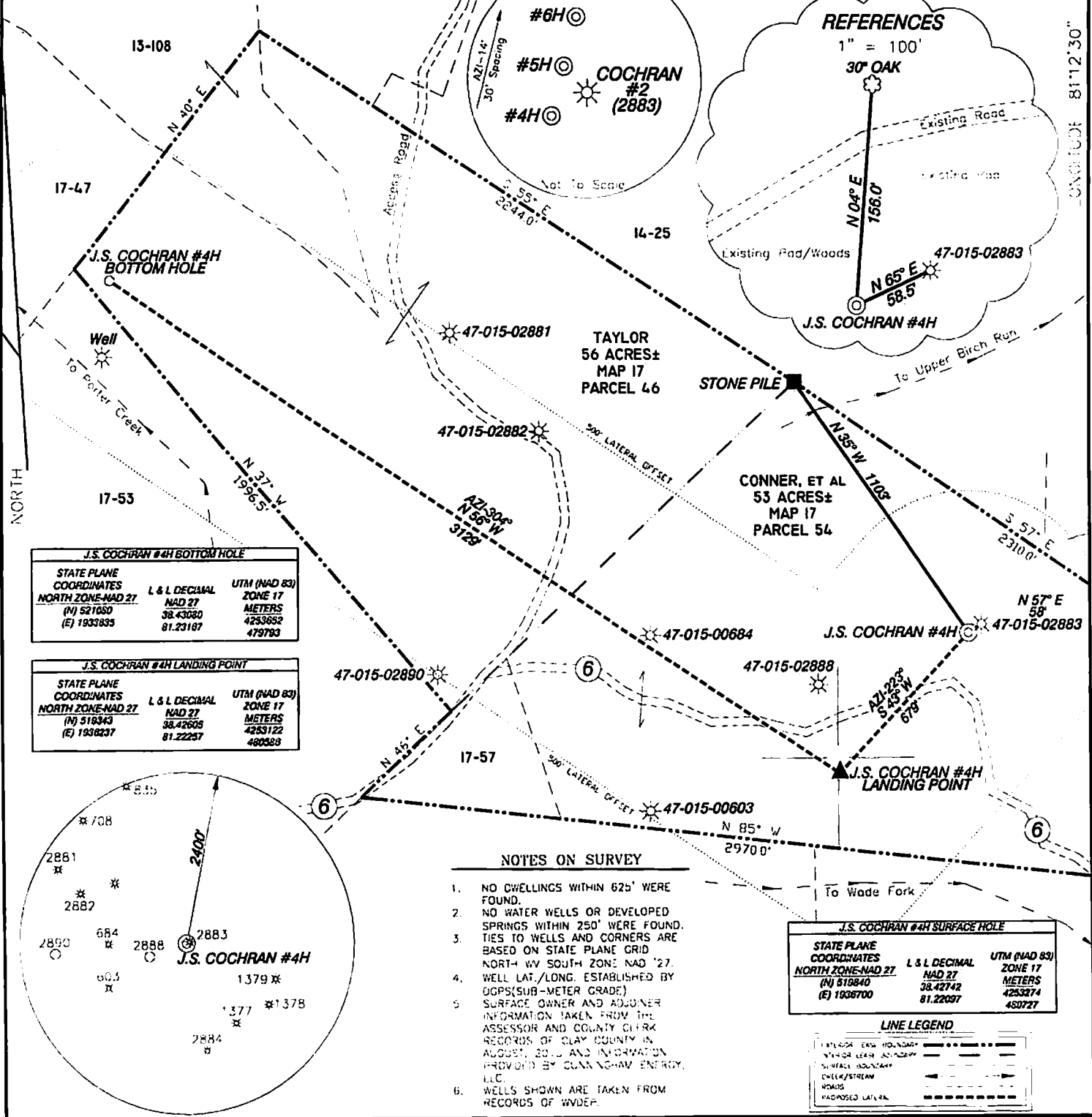
1" = 1000'
Elkhurst Quad

Cunningham Energy, LLC.
3230 Pennsylvania Ave.
Charleston, WV 25302

03/21/2014

J.S. COCHRAN #4H

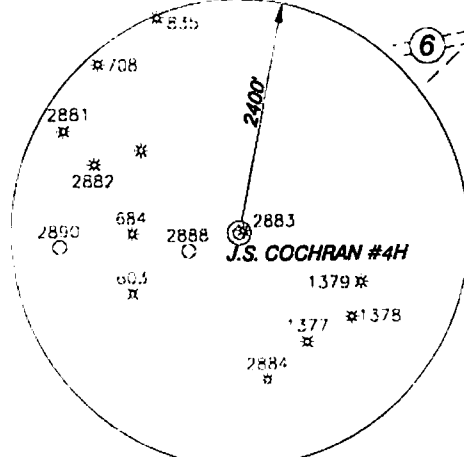
LATITUDE 38°27'30"



| J.S. COCHRAN #4H BOTTOM HOLE | | |
|------------------------------|---------------|--------------|
| STATE PLANE COORDINATES | L & L DECIMAL | UTM (NAD 83) |
| NORTH ZONE-NAD 27 | NAD 27 | ZONE 17 |
| (N) 521850 | 38.43080 | METERS |
| (E) 1933835 | 81.23187 | 4233852 |
| | | 479793 |

| J.S. COCHRAN #4H LANDING POINT | | |
|--------------------------------|---------------|--------------|
| STATE PLANE COORDINATES | L & L DECIMAL | UTM (NAD 83) |
| NORTH ZONE-NAD 27 | NAD 27 | ZONE 17 |
| (N) 518343 | 38.42669 | METERS |
| (E) 1930237 | 81.22257 | 4253122 |
| | | 480388 |

| J.S. COCHRAN #4H SURFACE HOLE | | |
|-------------------------------|---------------|--------------|
| STATE PLANE COORDINATES | L & L DECIMAL | UTM (NAD 83) |
| NORTH ZONE-NAD 27 | NAD 27 | ZONE 17 |
| (N) 510840 | 38.42742 | METERS |
| (E) 1938700 | 81.22097 | 4253274 |
| | | 480727 |

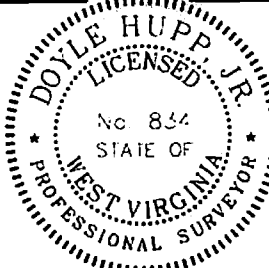


- NOTES ON SURVEY**
- NO DWELLINGS WITHIN 625' WERE FOUND.
 - NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
 - TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID.
 - WELL LAT./LONG. ESTABLISHED BY DGPS(SUB-METER GRADE).
 - SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF CLAY COUNTY IN AUGUST, 2013 AND INFORMATION PROVIDED BY CUNNINGHAM ENERGY, LLC.
 - WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.

LINE LEGEND

- PROPERTY BOUNDARY
- WELL LEGAL ADJACENCY
- SURFACE BOUNDARY
- DRAINAGE/STREAM
- ROADS
- ADJACENT LATERAL

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 RULES ISSUED AND APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE NOVEMBER 12, 2013
 OPERATORS WELL NO. J.S. COCHRAN #4H
 API WELL NO. 47-015-02881
 STATE 47 COUNTY 015 PERMIT 02897H

P.S. 834
Doyle Hupp, Jr.
HUPP Surveying & Mapping
 P.O. Box 647 Grantsville, WV 26147
 (304) 354-7035 EMAIL: hupp@frontiernet.net

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W2136 (BK66-25)
 PROVEN SOURCE OF ELEVATION DGPS(SUB-METER GRADE) SCALE 1" = 500'

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

WELL TYPE: GAS LIQUID WASTE IF "GAS" PRODUCTION STORAGE SHALE OIL

LOCATION: ELEVATION 1,215' WATERSHED TRIBUTARY OF WADE FORK
 DISTRICT UNION COUNTY CLAY QUADRANGLE ELKHURST 7.5'

SURFACE OWNER CHESSIE CONNER, et al ACREAGE 53±
 ROYALTY OWNER ALVIN ENGELKE, AGENT, et al LEASE ACREAGE 349.25± **03/21/2014**

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) TARGET FORMATION BIG INJUN
ESTIMATED DEPTH TVD- 2,150' MD-5,200'

NEW OPERATOR CUNNINGHAM ENERGY, LLC. DESIGNATED AGENT RYAN CUNNINGHAM
 ADDRESS 3230 PENNSYLVANIA AVE CHARLESTON, WV 25302 ADDRESS 3230 PENNSYLVANIA AVE CHARLESTON, WV 25302