



west virginia department of environmental protection

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

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

Thursday, October 13, 2016
WELL WORK PERMIT
Horizontal / New Drill

CUNNINGHAM ENERGY, LLC
3230 PENNSYLVANIA AVENUE

CHARLESTON, WV 25302

Re: Permit approval for SAMPLES 8H
47-039-06381-00-00

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

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

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: SAMPLES 8H
Farm Name: HUFFMAN, ROBERT
U.S. WELL NUMBER: 47-039-06381-00-00
Horizontal / New Drill
Date Issued: 10/13/2016

Promoting a healthy environment.

PERMIT CONDITIONS

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

CONDITIONS

1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code §22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR 4-19.1.c, if the operator is unable to sample and analyze any water well or spring with one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
4. All pits must be lined with a minimum of 30 mil thickness synthetic liner.
5. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours.
7. Well work activities shall not constitute a hazard to the safety of persons.
8. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced, drilling ceased, completion of any other permitted well work and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.
9. Prior to any hydraulic fracturing of this well, the Stump No. 1 well (API No. 4703906384) must be plugged.

10. A limited volume of wastewaters may be discharged to land only with the approval of the OOG Inspector to achieve compliance with the provisions for waste treatment and the discharge limitations and monitoring requirements specified under the General Water Pollution Control Permit (GP-WV-1-88).

11. Be advised that if you drill a horizontal gas well other than a coalbed methane well, which disturbs three acres or more of surface, excluding pipelines, gathering lines and roads, or utilizes more than two hundred ten thousand gallons of water in any thirty day period it would require a permit/bond under Chapter 22-6A.

Inspector's Addendum of Samples 6, 7, 8, 9# wells

- ① Operator shall contact Inspector 8 hours in Advance of casing and cementing All CASINGS. Including time of Service Company ARRIVALS. Contact in Advance of Frac jobs
- ② Conduct on AREA of Review to Inspector to have possible communication of pressurized Drilling & Treatment
- ③ Starting from Doctor's Creek Tank Battery will maintain Access road's sediment & Erosion controls including Rip Rapping ditch's with more than 15% grade. Make SURE ~~all~~ culverts, sediment & Erosion Device's are in place & maintained
- ④ Pits on Engineered Drawing's are Close 5000 BBL Exclusion. Cunningham Energy will have pits surveyed when being built. All soils will be cleaned compacted so NOT to go above exclusion & will be verified as such. This doesn't Exclude the use of propping & liner help in Breach of pits Must use a minimum 30 mill liner. but larger mill would be acceptable
- ⑤ Must contact USACE to Address Ephemeral Stream between Old & New Construction

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9/1/16



47-3906381

Mr. Jeffrey McLaughlin
WV DEP Office of Oil and Gas

Addendum to Samples 6H, 7H, 8H, 9H

Mr. McLaughlin:

The following wells were identified for plugging and/or have already been plugged to prevent communication during the frac process on our planned horizontal wells

Cromwell #2 – 47-3904907

Stop #1 47-3906384

The following wells are producing wells at the same elevation which we will monitor during both the drilling and fracking process:

Cromwell 1A – 47-03906303

Cromwell 2A – 47-03906304

Samples 5 – 47-03906306

Crum 1A – 47-03906349

Crum 2A – 47-03906350

Mary Bird 1A – 47-03906345

Bird Dodd 1A – 47-03906321

Samples 4 – 47-03906305. This well is located near the origin points of all the horizontals to be drilled, however, the Samples 6H, 7H, 8H, and 9H will all be over 500' away from the Samples #4 vertical wellbore when the TVD reaches the Weir Sand. Therefore, we do not anticipate this well being a communication risk.

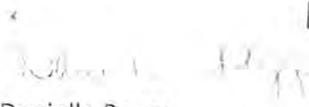
14

The following well is shown in this area as well however as per DEP records this well was never drilled:

5770 Farm Name: Fred Gardner API: 47-039-01277

We anticipate the treating pressures will be between 2400 – 3000 psi.

Sincerely,


Danielle Boggs
Cunningham Energy, LLC

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4703906381

Mr. Jeffrey McLaughlin
WV DEP Office of Oil and Gas

Addendum to Samples 6H, 7H, 8H, 9H

Dear Mr. McLaughlin:

As shown on Form W-9 the disposal pits for the Samples 6H, 7H, 8H and 9H crosses surface property of both Mr. Robert Huffman and Mr. L. Dale Ashley. We maintain leases on both pieces of property. The disposal pits are temporary in nature and will be reclaimed after completion of all the pad wells.

When constructing the disposal pits Cunningham Energy intends to separate the cut/fill dirt according to the surface property boundaries. When removed the cut/fill dirt from Mr. Huffman's property will be stored on his property for later use during the reclamation process and the same with Mr. Ashley's cut/fill dirt.

We will be notifying both parties of our intentions via the permit package which will contain this letter.

Should you have any questions, please feel free to contact us at (304) 344-9291.

Best Regards,

Ryan Cunningham

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

1) Well Operator: CUNNINGHAM ENERGY, LLC

494508594	KANAWHA	BIG SANDY	CLIO 7.5'
Operator ID	County	District	Quadrangle

2) Operator's Well Number: SAMPLES 8H 3) Elevation: 945'

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

5) Proposed Target Formation(s): WEIR Proposed Target Depth: 2,150'

6) Proposed Total Depth: 2,000 TVD/6,380 MD Feet Formation at Proposed Total Depth: WEIR

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. WE PLAN TO RUN THE WEATHERFORD WET SHOE SYSTEM AND PERFORATE. See addendum.

13) CASING AND TUBING PROGRAM

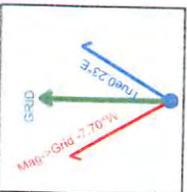
TYPE	SPECIFICATIONS			FOOTAGE	INTERVALS	CEMENT
	Size	Grade	Weight per ft			
Conductor	13 3/8"	LS	43.6 LBS	30'	30'	CTS
Fresh Water	10 3/4"	J-55	40.5 LBS	400'	400'	CTS
Coal						
Intermediate	8 5/8"	J-55	24 LBS	1900'	1900'	CTS
Production	5 1/2"	P-110	20 LBS	6,380'	6,380'	CTS
Tubing						
Liners						

[Signature]
9-1-16

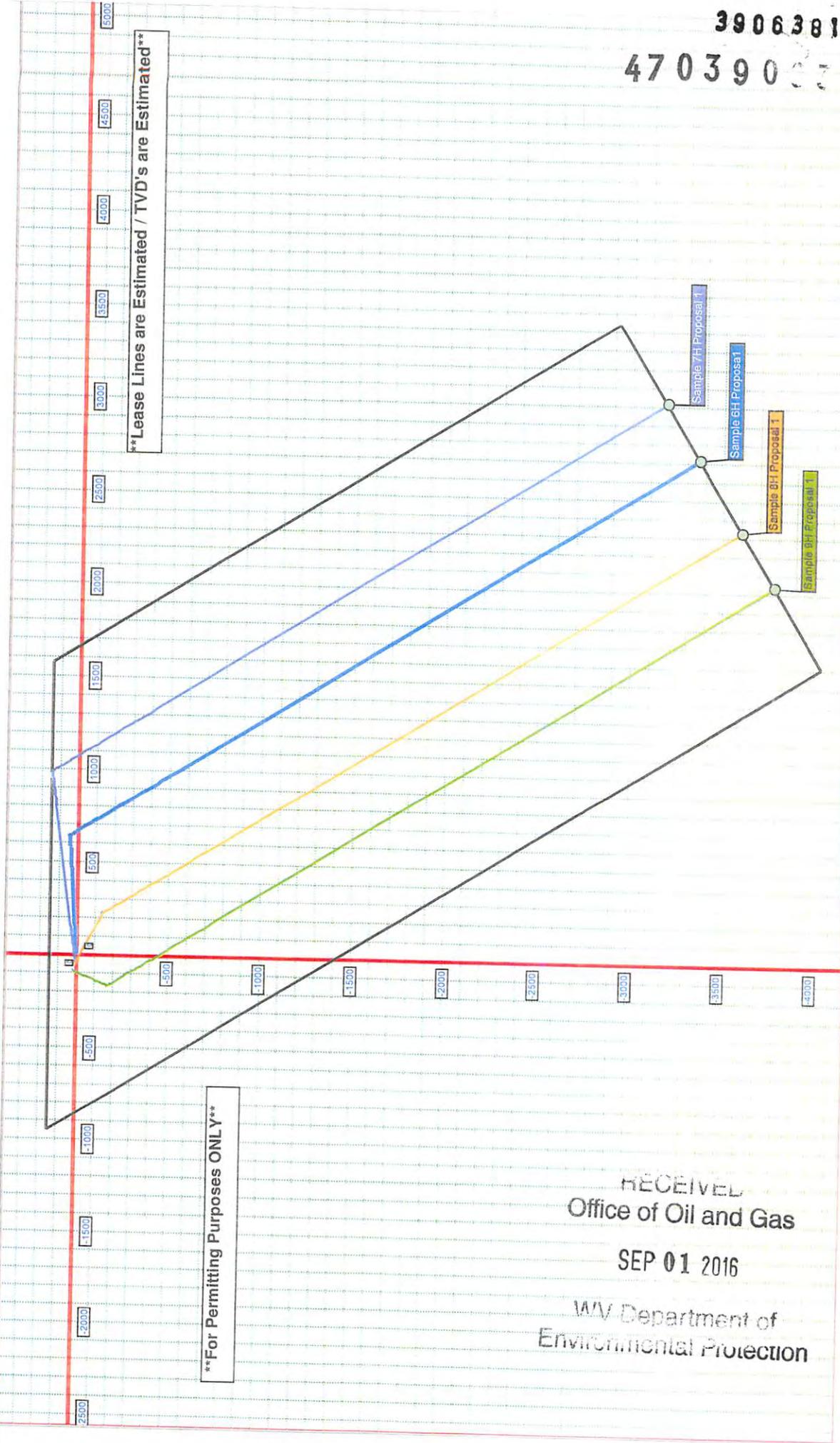
Packers: Kind: See Inspector Addendum
 Sizes: _____
 Depths Set _____

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Job Number: Sample PAD Spider
 Company: Cunningham Energy
 Lease/Well: Sample PAD
 Location: Southern
 Rig Name:
 State/County: West Virginia/Kanawha
 Country: USA
 API Number:



Elevation (To MSL): 945.00 ft
 RKB: 9.00 ft
 Projection System: US State Plane 1927 (Exact solution)
 Projection Group: West Virginia South 4702
 Projection Datum: CLARKE 1866
 Magnetic Declination: -7.93
 Grid Convergence: -0.22619 W
 Date: Tuesday, May 12, 2015



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 470390



4703900381

WEATHERFORD WET SHOE SYSTEM

A method for cementing casing into a wellbore, which method comprises the steps of: (a) providing float equipment into said casing at or adjacent the downstream extremity thereof; (b) inserting a bottom plug into said casing and pumping it down said casing with cement, and (c) inserting a top plug into said casing above said cement and pumping it down said casing, characterized by (d) providing a plug seat upstream of said float equipment, said bottom plug being shaped and configured so that it will pass said plug seat and land on said float equipment and said top plug being shaped and configured so that it will land on said plug seat.

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Samples 6H, 7H, 8H and 9H Proposed Frac Design

- +/- 20 Stages
- 3,000 barrels per stage
- 50,000 lbs. Sand/Stage
- 50 bbl/Minute Downhole Rate

Areas adjacent to existing wells will not be fracked to avoid well-to-well communication.

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4703908381

WW-2A
(Rev. 6-14)

1.) Date: AUGUST 22, 2016
2.) Operator's Well Number SAMPLES 8H
State County Permit
3.) API Well No.: 47- 037 -

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

4) Surface Owner(s) to be served:
(a) Name ROBERT HUFFMAN ✓
Address P.O. BOX 796
CLENDENIN, WV 25045
(b) Name L. DALE ASHLEY ✓
Address 43 DOCTORS CREEK RD.
CLENDENIN, WV 25045
(c) Name _____
Address _____
5) (a) Coal Operator
Name _____
Address _____
(b) Coal Owner(s) with Declaration
Name _____
Address _____
(c) Coal Lessee with Declaration
Name _____
Address _____
6) Inspector TERRY URBAN
Address P.O. BOX 1207
CLENDENIN, WV 25045
Telephone 304-549-5915

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

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

OR

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

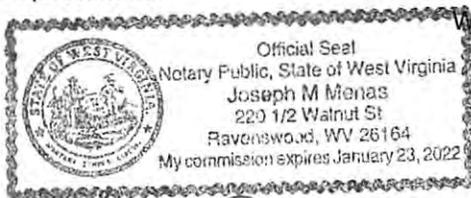
I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through ___ on the above named parties by:

- Personal Service (Affidavit attached)
- 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
Its: MEMBER
Address: 3230 PENNSYLVANIA AVENUE
CHARLESTON, WV 25302
Telephone: 304-344-9291
Email: rvan.cunningham@cunninghamenergy.com

Subscribed and sworn before me this 23 day of August, 2016

Notary Public

My Commission Expires January 23, 2022

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

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Affidavit of Personal Service

SEP 09 2016

State Of West Virginia
County Of Kanawha

WV Department of
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The undersigned, being first duly sworn, says that the undersigned served a true and complete copy of all sides of--

- (1) Notice on Form WW-2 (A) ✓ / WW-3 (A) ___ / WW-4 (A) ___ / WW-5 (A) ___ / WW-6 (A) ___
- (2) Application on Form WW-2 (B) ✓ / WW-3 (B) ___ / WW-4 (B) ___ / WW-5 (B) ___ / WW-6 (B) ___
- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. SAMPLES 8H located in BIG SANDY District, KANAWHA County, West Virginia, upon the person or organization named--

L. DALE ASHLEY

--by delivering the same in KANAWHA County, State of WEST VIRGINIA on the 9th day of SEPTEMBER, 2016 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him ✓ / her ___ / or, because he ___ / she ___ / refused to take it when offered it, by leaving it in his ___ / her ___ / presence.

Handing it to a member of his or her family above the age of 16 years named _____ who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

Handing it to _____, a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

For a limited partnership:

Handing it to the general partner, named _____, or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

For a corporation:

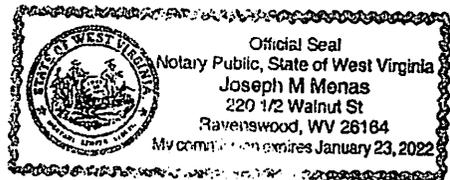
Handing it to the corporation's employee ___ / officer ___ / director ___ / attorney in fact ___ / named _____

[Signature]
(Signature of person executing service)

Taken, subscribed and sworn before me this 9th day of September 2016.
My commission expires January 23, 2022

[Signature]
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)



**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
SOPHIA SAMPLES, ET AL	CUNNINGHAM ENERGY, LLC	1/8	259 - 420

**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:

CUNNINGHAM ENERGY, LLC
PRESIDENT

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SEP 4 2016
WV Department of Environmental Protection

4703906381

WW-2B1
(5-12)

Well No. SAMPLES 8H

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 CUNNINGHAM 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.

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

March 11, 2015

RE: Water Samples for Samples #8H

There appears to be fifteen (15) potable water sources within 2,000' of Samples #8H, therefore tests should be offered and samples taken as required.

1. C F & Janis Smith /
47 Doctors Creek Rd.
Clendenin, WV 25045
Tax Map 12 Parcel 63
2. Leslie Ashley, et al /
43 Doctors Creek Rd.
Clendenin, WV 25045
Tax Map 12 Parcels 58, 60 & 64
3. Donald Snodgrass /
30100 Six Mile Rd.
Livonia, MI 48152
Tax Map 12A Parcel 39 & 45
4. Jack Bird /
30 Doctors Creek Rd.
Clendenin, WV 25045
Tax Map 12A Parcel 42
5. Karen Nichols /
28 Doctors Creek Rd.
Clendenin, WV 25045
Tax Map 12A Parcel 43
6. Hobert Dye /
28 Doctors Creek Rd.
Clendenin, WV 25045
Tax Map 12A Parcel 44
7. Marvin Samples /
7 Doctors Creek Rd.
Clendenin, WV 25045
Tax Map 12 Parcels 53, 55, 64 & 67

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8. James & Eula Huffman
P.O. Box 796
Clendenin, WV 25045
Tax Map 12 Parcel 62
9. Brenda Dye
P.O. Box 248
Clendenin, WV 25045
Tax Map 12 Parcel 61
10. David & Pamela Huffman
1619 Doctors Creek Rd.
Clendenin, WV 25045
Tax Map 12 Parcel 61.1
11. Ronald & Christy Flores
40 Doctors Creek Rd.
Clendenin, WV 25045
Tax Map 12 Parcel 46
12. Jeffrey Taylor
1810 Doctors Creek Rd.
Clendenin, WV 25045
Tax Map 12 Parcel 46.2
13. Billy & Rita Huffman
52 Doctors Creek Rd.
Clendenin, WV 25045
Tax Map 12 Parcel 46.1
14. Dorman Skeens
9 Doctors Creek Rd.
Clendenin, WV 25045
Tax Map 12 Parcel 67.1
15. Robert Huffman
P.O. Box 796
Clendenin, WV 25045
Tax Map 12 Parcel 67.2

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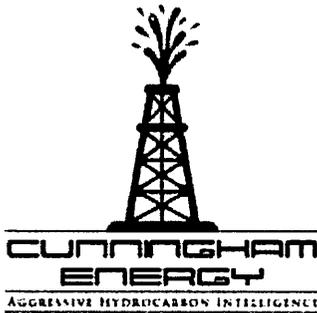
Westbrook, Joshua P

From: dani.bays@cunninghamenergy.com
Sent: Wednesday, October 05, 2016 2:26 PM
To: Westbrook, Joshua P
Subject: Water Testing Requests

David and Pam Huffman	1619 Doctors Creek Rd	Clendenin	WV	25045	304.548.7782
Jeff Bird (Jack-deceased)	4068 indian Creek Rd	Elkview	WV	250071	304.545.0448

Thank you,
Danielle N. Boggs
 Cunningham Energy
 3230 Pennsylvania Ave
 Charleston, WV 25302
 Direct: (304) 344-9291
 Cell: (304) 553-5850
 Fax: (304) 344-9290
www.cunninghamenergy.com

Water Sample Requests
 CTPW

**NOTICE OF CONFIDENTIALITY**

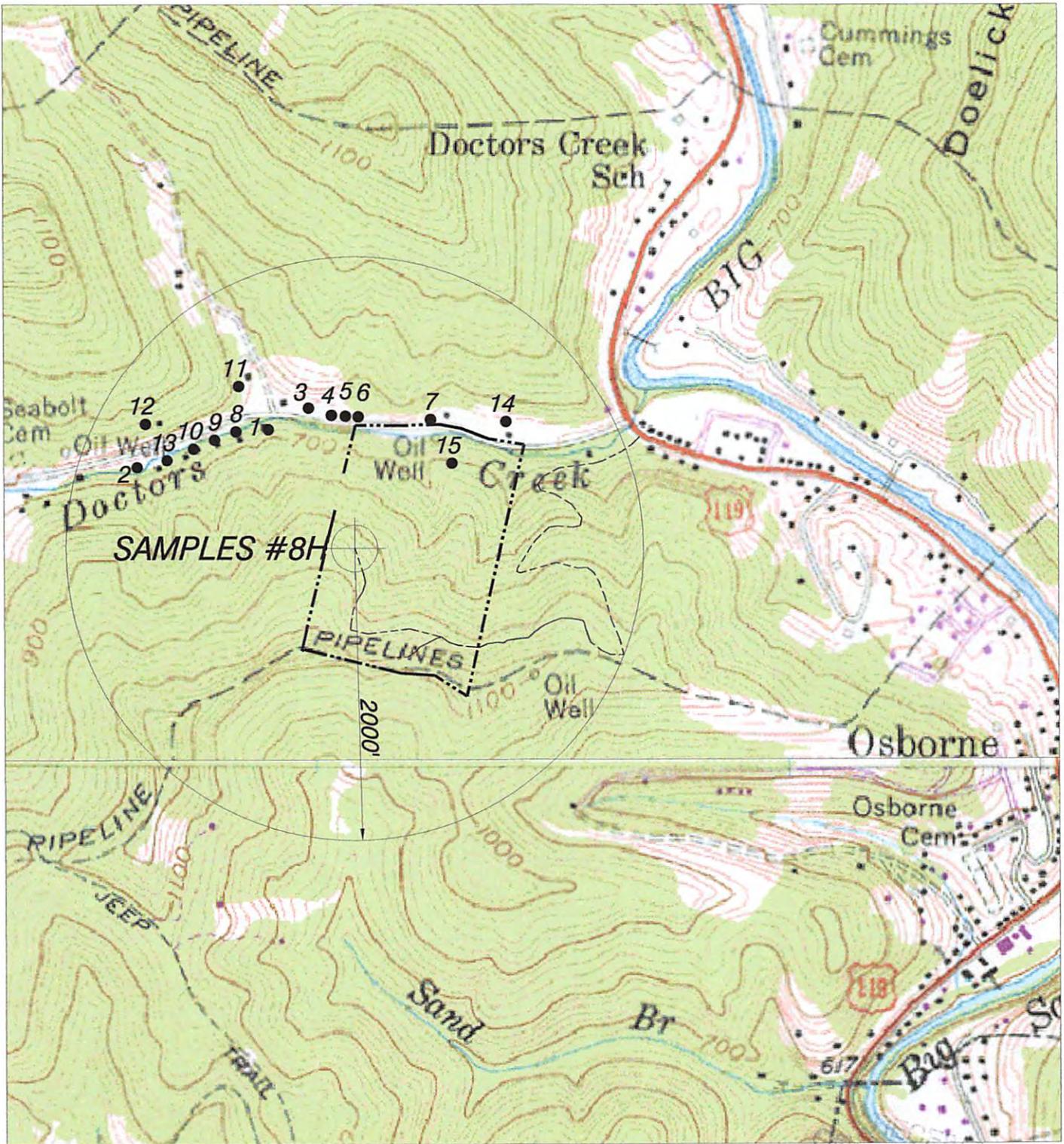
This e-mail message and its attachments (if any) are intended solely for the use of the addressees hereof. In addition, this message and the attachments (if any) may contain information that is confidential, privileged and exempt from disclosure under applicable law. If you are not the intended recipient of this message, you are prohibited from reading, disclosing, reproducing, distributing, disseminating or otherwise using this transmission. Delivery of this message to any other person than the intended recipient is not intended to waive any right or privilege. If you have received this message in error, please promptly notify the sender by reply e-mail and immediately delete this message from your system.

Disclaimer: Sender is not a United States Securities Dealer or Broker or United States Investment Adviser. This email letter and any and all attachments and related documents are never considered to be a solicitation for any purpose in any form or content. Upon receipt of these documents you, as the Recipient, hereby acknowledge this Warning and Disclaimer. These Confidential communications are protected under Gramm-Leach-Bliley Act 15 USC, Subchapter 1, sections 6801-6809 and other laws addressing the disclosure of Non-Public Personal Information. All information is subject to change without notice.

CUNNINGHAM ENERGY SAMPLES #8H Water



CUNNINGHAM ENERGY SAMPLES #8H Water



NORTH

HUPP Surveying & Mapping

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

1" = 1000'
CLIO Quad

CUNNINGHAM ENERGY
3230 PENNSYLVANIA AVE.
CHARLESTON, WV 25302

RECEIVED
Office of Oil and Gas
SEP 11 2010
Department of Environmental Protection

API Number 47 - 039 -
Operator's Well No. SAMPLES 8H

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 494508594

Watershed (HUC 10) DOCTOR'S CREEK Quadrangle CLIO 7.5'

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

Will a pit be used? Yes No

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

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number 2D0392210)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

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

Drilling medium anticipated for this well (vertical and horizontal)? 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/HAUL IF NEEDED

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

-Landfill or offsite name/permit number? CITY OF CHARLESTON LANDFILL

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

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

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

RECEIVED
Office of Oil and Gas

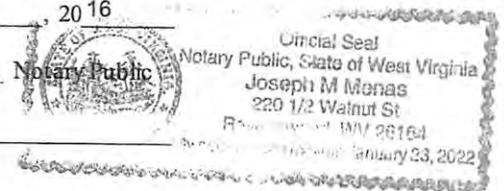
SEP 01 2016

WV Department of
Environmental Protection

Subscribed and sworn before me this 31 st day of AUGUST

[Signature]

My commission expires 08/31/2016 January 23, 2022



Operator's Well No. SAMPLES 8H

Proposed Revegetation Treatment: Acres Disturbed 2.75 Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-10-10

Fertilizer amount 1/3 TON lbs/acre

Mulch HAY - 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY - 31	40	ORCHID GRASS	15
ALSIKE CLOVER	5	ALSIKE CLOVER	5
ANNUAL RYE	15		

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: _____

[Handwritten Signature]

Comments: _____

SEE Inspector Addendum

RECEIVED
Office of Oil and Gas

SEP 01 2016

WV Department of
Environmental Protection

Title: _____

[Handwritten Signature]

Date: _____

9-1-16

Field Reviewed? Yes

No

1660000

WW-9- GPP
Rev. 5/16

Page 1 of 2
API Number 47 - 039 -
Operator's Well No. SAMPLES 8H

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

Operator Name: CUNNINGHAM ENERGY, LLC
Watershed (HUC 10): DOCTORS CREEK Quad: CLIO 7.5
Farm Name: ROBERT HUFFMAN

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

Prior to discharge of fluid from a drilling pit, the fluid will be circulated by placing a pump with suction in one end of the pit and the fluid discharged into the other end of the pit, lime will be added as necessary to the discharge end of the pit, and the fluid circulated for turnover of two pit volumes. Field samples will be taken of the pit fluid to determine pre-discharge parameters respective to WVDEP - OOG regulations; and, any visable free floating oil other than trace amounts that may be present will be removed from the suction/discharge area of the pit. Samples will be taken at varous points of the discharge for testing.

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

Drilling pits will be lined with a minimum of 30 mil thickness synthetic liner. Drill cuttings disposal will be in conformance with the Fluids/Cuttings Disposal & Reclamation Plan (Form WW-9) as submitted within the application for this well. Land application of treated drilling pit wastewaters will conform with the applicable procedures specified within the WVDEP OOG's General Water Pollution Control Permit No. GP-WV-1-88.

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

Doctor's Creek is the closest water body this well will be approximately 1/2 mile from this water body. The closest WV Groundwater Public Water Supply Intake is Carbide Rec. Club, Blue Creek Well, Well #1 and the closest WV Surface Water Downstream Public Water Supply Intake is WVAWC Kan. Valley Dist. WVAWC Kan. Valley Primary Elk River.

4. Summarize all activities at your facility that are already regulated for groundwater protection.

Well drilling, associated casing installation and cementing, well stimulation, and other typical activities as may be encountered during the exploratory, developmental, maintenance/reworking, treatment operations and closure phases of this well are already regulated in the well work permit and provide groundwater protection measures.

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

RECEIVED
Office of Oil and Gas
SEP 01 2016
WV Department of Environmental Protection

No existing groundwater quality data is known to currently be available for this site. Cunningham Energy, LLC has provided a written request to the respective surface owner/occupant seeking permission to perform water well/spring analytical testing. We will perform all requested testing by these surface owner/occupants.

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

No waste material originating from this well site will be used for either deicing purposes or as fill material upon the property. Land application of drilling pit fluid may, however, be conducted in conformance with the applicable procedures specified within the WVDEP, OOG's General Water Pollution Control Permit No. GP-WV-1-88. Additionally, drill cuttings may remain in place in conformance with the Fluids/Cuttings Disposal and Reclamation Plan as submitted within the approved application for this well.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

The groundwater protection instruction and training for employees will include required reading of this Groundwater Protection Plan (GPP). The GPP will also be discussed in employee meetings. New employees will be required to review the GPP.

8. Provide provisions and frequency for inspections of all GPP elements and equipment.

The well operator will perform quarterly self-inspections of respective equipment and all GPP elements.

Signature: _____

Date: _____


8/22/16

No existing groundwater quality data is known to currently be available for this site. Cunningham Energy, LLC has provided a written request to the respective surface owner/occupant seeking permission to perform water well/spring analytical testing. We will perform all requested testing by these surface owner/occupants.

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

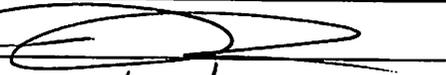
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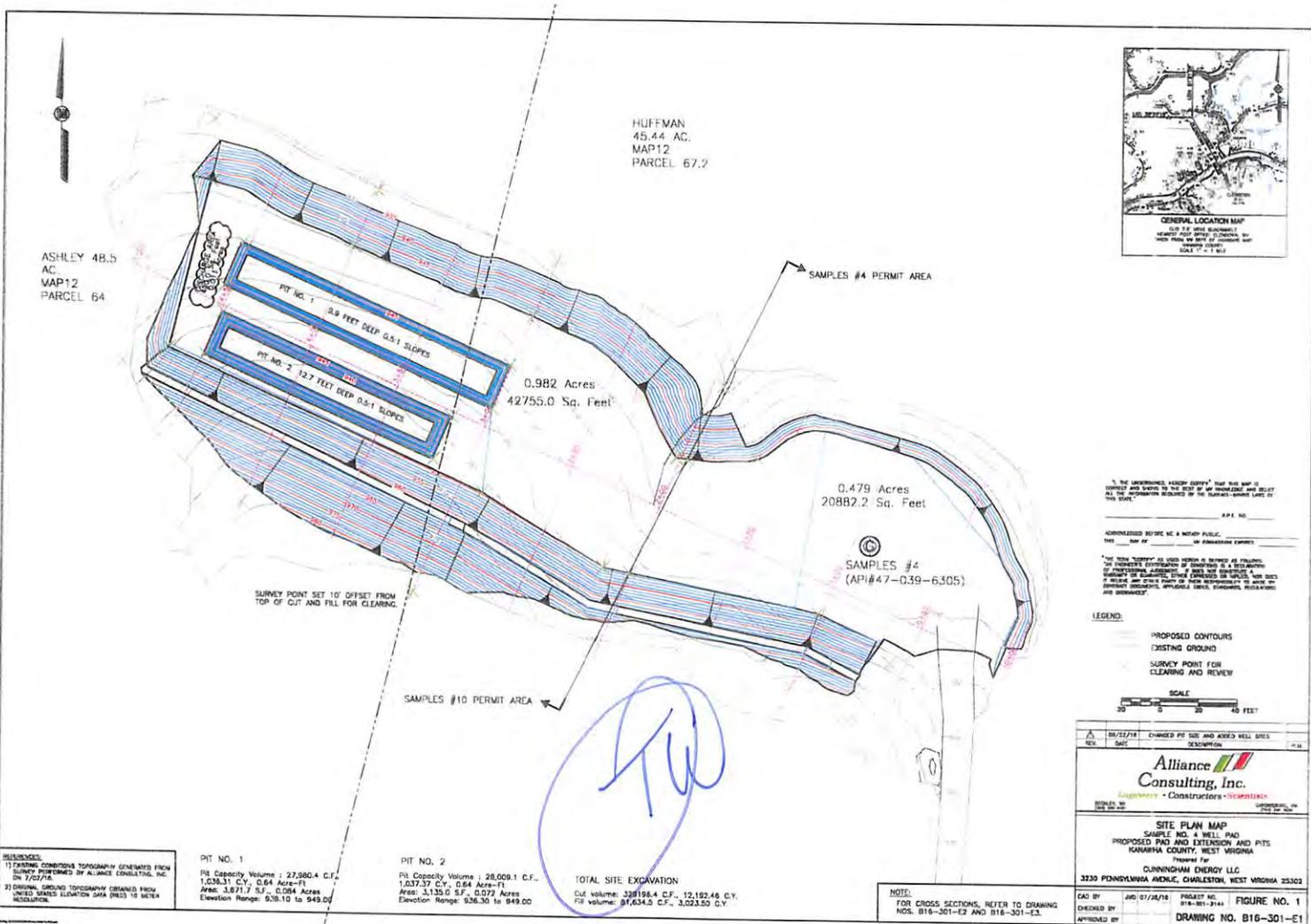
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8. Provide provisions and frequency for inspections of all GPP elements and equipment.

The well operator will perform quarterly self-inspections of respective equipment and all GPP elements.

Signature: 

Date: 8/22/16



"I, THE UNDERSIGNED, ENGINEER HEREBY CERTIFY THAT THIS MAP IS CORRECT AND ACCORDS TO THE BEST OF MY KNOWLEDGE AND BELIEF ALL THE INFORMATION REQUIRED BY THE STATUTE APPLICABLE TO THIS MAP."

DATE OF SURVEY: 08/12/18

ENGINEER: [Signature]

LEGEND:

- PROPOSED CONTOURS
- EXISTING GROUND
- SURVEY POINT FOR CLEARING AND REVIEW

SCALE: 1" = 40 FEET

REV.	DATE	DESCRIPTION
1	08/12/18	CHANGED PIT SIZE AND ADDED WELL SITES

Alliance Consulting, Inc.
Engineers • Constructors • Scientists

SITE PLAN MAP
SAMPLE NO. 4 WELL PAD
PROPOSED PAD AND EXTENSION AND PITS
KANAWHA COUNTY, WEST VIRGINIA

Prepared For:
CUNNINGHAM ENERGY LLC
3330 PINNACLES AVENUE, CHARLESTON, WEST VIRGINIA 25302

NOTE:
FOR CROSS SECTIONS, REFER TO DRAWING NOS. B16-301-E2 AND B16-301-E3.

CAD BY: [Name] PROJECT NO: 018-301-2144
CHECKED BY: [Name]
APPROVED BY: [Name] DRAWING NO. B16-301-E1

SEQUENCES:
1) EXISTING CONTOURS TOPOGRAPHY GENERATED FROM SURVEY PERFORMED BY ALLIANCE CONSULTING, INC. ON 7/27/16.
2) EXISTING GROUND TOPOGRAPHY DERIVED FROM UNITED STATES ELEVATION DATA (USGS) 10 METER RESOLUTION.

PIT NO. 1
Pit Capacity Volume: 27,980.4 C.F.,
1,036.31 C.Y., 0.84 Acres-ft
Area: 3,871.7 S.F., 0.084 Acres
Elevation Range: 836.10 to 949.02

PIT NO. 2
Pit Capacity Volume: 28,009.1 C.F.,
1,037.37 C.Y., 0.84 Acres-ft
Area: 3,135.0 S.F., 0.072 Acres
Elevation Range: 836.30 to 949.00

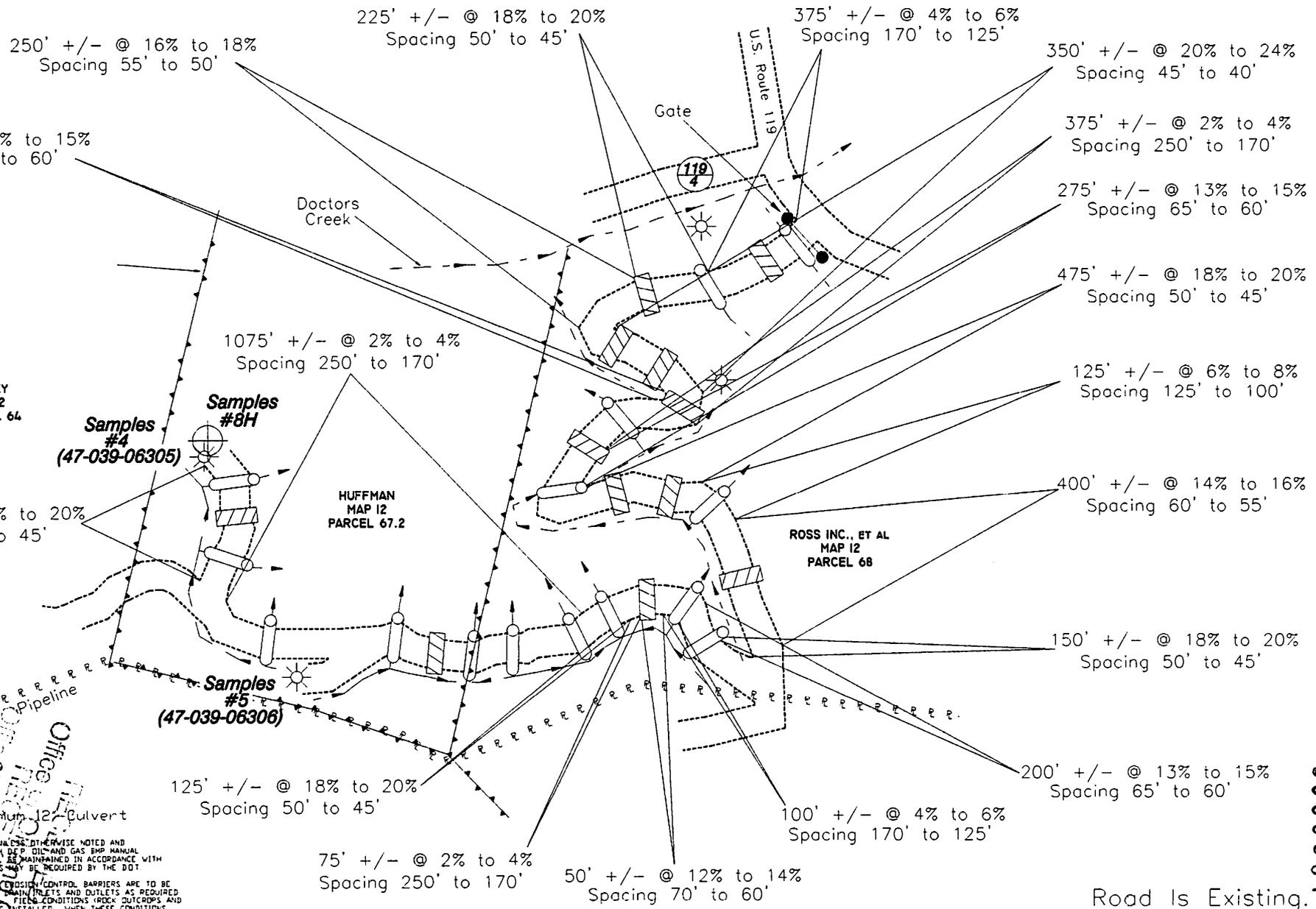
TOTAL SITE EXCAVATION
Cut Volume: 328198.4 C.F., 12,192.46 C.Y.
Fill Volume: 91,634.2 C.F., 3,023.50 C.Y.

CUNNINGHAM ENERGY, LLC. SAMPLES #8H

Form W-9

Page 1 of 2

Drawing Not To Scale



WV DEPARTMENT OF ENVIRONMENTAL PROTECTION
 WV DEPARTMENT OF HIGHWAYS
 WV DEPARTMENT OF TREASURY
 WV DEPARTMENT OF SOCIAL SERVICES
 WV DEPARTMENT OF HEALTH
 WV DEPARTMENT OF EDUCATION
 WV DEPARTMENT OF LABOR
 WV DEPARTMENT OF CORRECTIONS
 WV DEPARTMENT OF JUSTICE
 WV DEPARTMENT OF NATURAL RESOURCES
 WV DEPARTMENT OF TRANSPORTATION
 WV DEPARTMENT OF AGRICULTURE
 WV DEPARTMENT OF COMMUNITY DEVELOPMENT
 WV DEPARTMENT OF ECONOMIC DEVELOPMENT
 WV DEPARTMENT OF ENERGY
 WV DEPARTMENT OF FINANCE
 WV DEPARTMENT OF GEOGRAPHIC INFORMATION SYSTEMS
 WV DEPARTMENT OF HEALTH SERVICES
 WV DEPARTMENT OF HUMAN SERVICES
 WV DEPARTMENT OF LABOR RELATIONS
 WV DEPARTMENT OF LEGAL SERVICES
 WV DEPARTMENT OF POLICE
 WV DEPARTMENT OF PUBLIC SAFETY
 WV DEPARTMENT OF REVENUE
 WV DEPARTMENT OF SOCIAL SECURITY
 WV DEPARTMENT OF STATE
 WV DEPARTMENT OF TECHNOLOGY
 WV DEPARTMENT OF TOURISM
 WV DEPARTMENT OF WORKERS COMPENSATION
 WV DEPARTMENT OF YOUTH SERVICES
 WV DEPARTMENT OF ZONING
 WV DEPARTMENT OF PROFESSIONAL REGULATION
 WV DEPARTMENT OF PUBLIC WORKS
 WV DEPARTMENT OF SENIOR SERVICES
 WV DEPARTMENT OF TRAVEL
 WV DEPARTMENT OF UTILITIES
 WV DEPARTMENT OF VETERANS AFFAIRS
 WV DEPARTMENT OF WORKERS COMPENSATION
 WV DEPARTMENT OF YOUTH SERVICES
 WV DEPARTMENT OF ZONING
 WV DEPARTMENT OF PROFESSIONAL REGULATION
 WV DEPARTMENT OF PUBLIC WORKS
 WV DEPARTMENT OF SENIOR SERVICES
 WV DEPARTMENT OF TRAVEL
 WV DEPARTMENT OF UTILITIES
 WV DEPARTMENT OF VETERANS AFFAIRS

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

SEDIMENT BASINS, TRAPS AND APPROPRIATE EROSION CONTROL BARRIERS ARE TO BE CONSTRUCTED AT ALL CULVERTS 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.

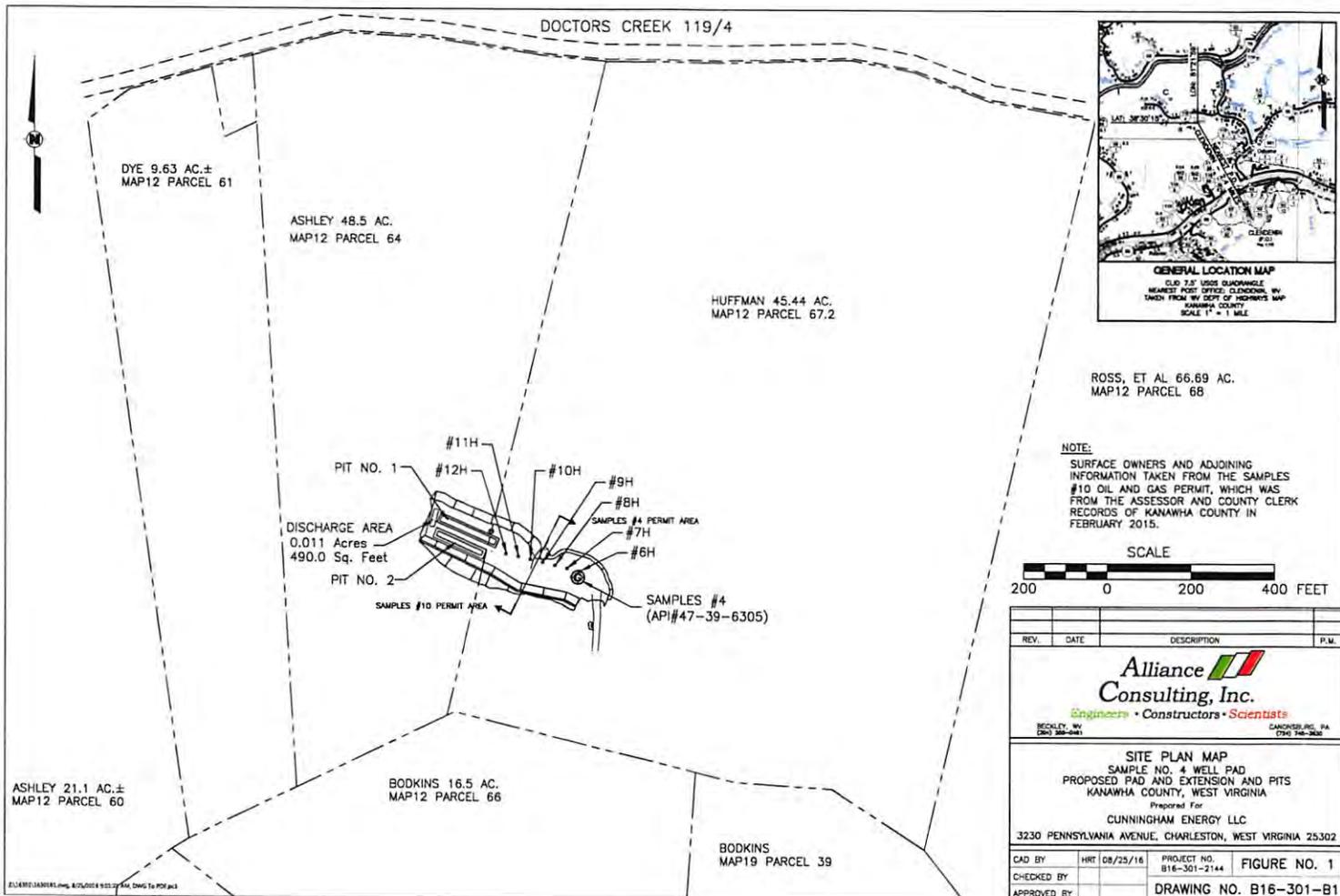
TEMPORARILY SEED AND MULCH ALL SLOPES AFTER CONSTRUCTION OF LOCATION CUT AND STACK ALL TIMBER ABOVE 6-INCHES IN DIAMETER AND THICKER STACK BRUSH BELOW LOCATION FOR SEDIMENT CONTROL.

3906381

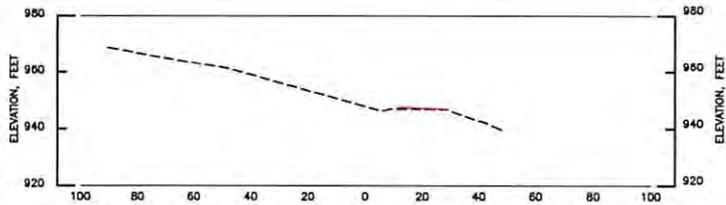
Road Is Existing.

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

Drafted BY:	Date Drafted:	Job Number:
DB	03/11/15	W20112041

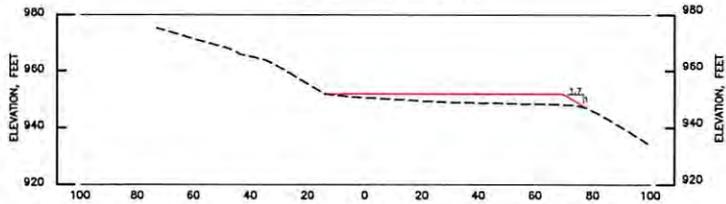


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Office of Oil and Gas
SEP 01 2016
WV Department of
Environmental Protection



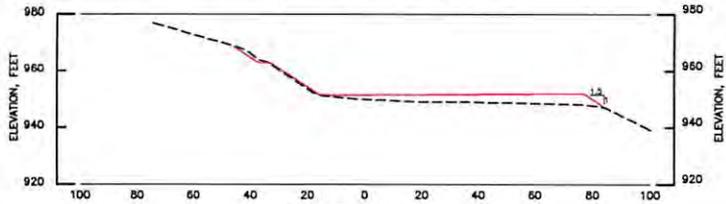
SECTION 0+00

SCALE
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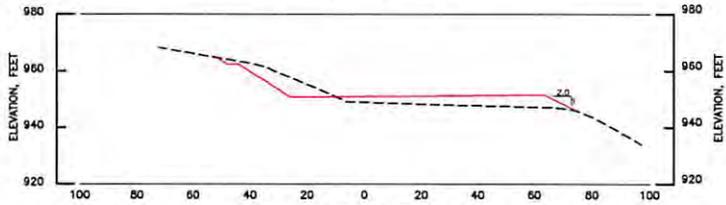
SECTION 0+50

SCALE
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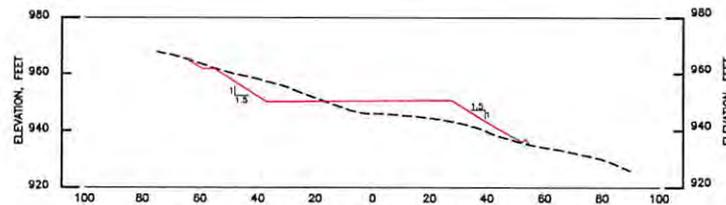
SECTION 1+00

SCALE
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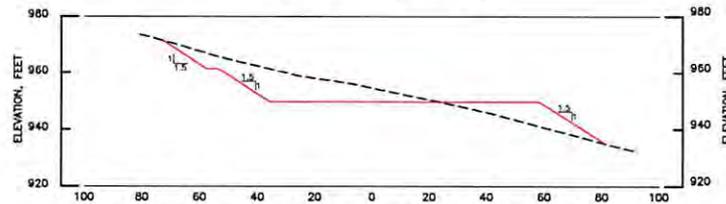
SECTION 1+50

SCALE
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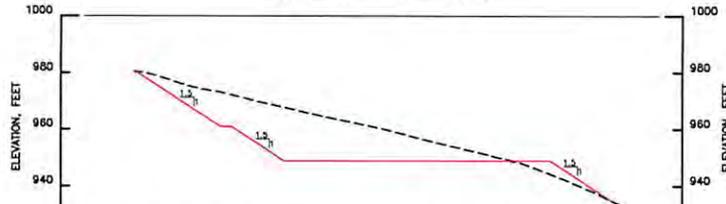
SECTION 2+00

SCALE
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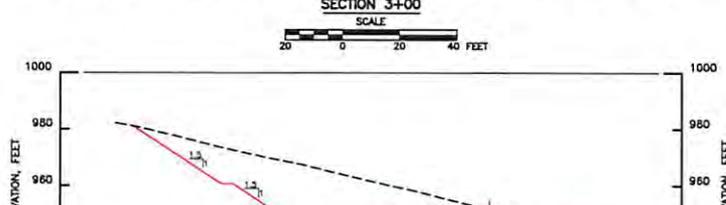
SECTION 2+50

SCALE
20 0 20 40 FEET



SECTION 3+00

SCALE
20 0 20 40 FEET



SECTION 3+25

SCALE
20 0 20 40 FEET

NOTE:

FOR PLAN VIEW OF BASELINE CROSS SECTIONS, REFER TO DRAWING NO. B16-301-E1.

"I, THE UNDERSIGNED, HEREBY CERTIFY" THAT THIS MAP IS CORRECT AND SHOWS TO THE BEST OF MY KNOWLEDGE AND BELIEF ALL THE INFORMATION REQUIRED BY THE SURFACE-MINING LAWS OF THIS STATE.

R.P.E. NO. _____
ACKNOWLEDGED BEFORE ME A NOTARY PUBLIC,
THIS DAY OF _____ MY COMMISSION EXPIRES _____

"THE TERM 'DESIGNER' AS USED HEREON IS DEFINED AS FOLLOWS: AN ENGINEER'S CERTIFICATION OF CONDITIONS IS A DECLARATION OF PROFESSIONAL JUDGEMENT. IT DOES NOT CONSTITUTE WARRANTY OR GUARANTEE, EITHER EXPRESSED OR IMPLIED, NOR DOES IT RELIEVE ANY OTHER PARTY OF THEIR RESPONSIBILITY TO ABIDE BY CONTRACT DOCUMENTS, APPLICABLE CODES, TECHNICAL REGULATIONS AND ORDINANCES."

LEGEND:

- EXISTING GROUND
- PROPOSED GROUND

SCALE
20 0 20 40 FEET

REV.	DATE	DESCRIPTION	P.M.
1	10/03/16	CHANGED PIT SIZE	

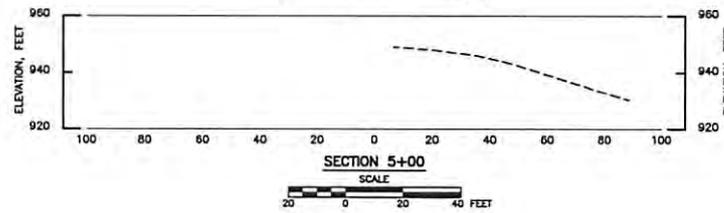
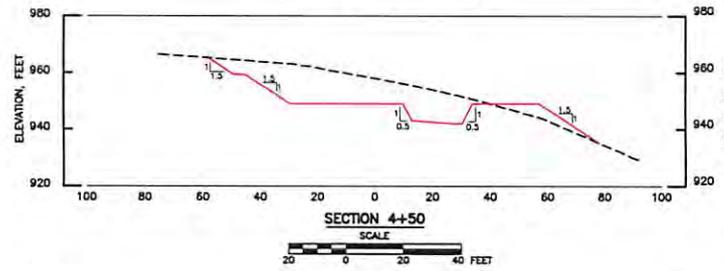
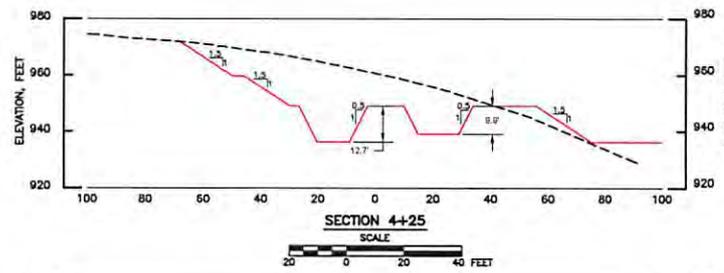
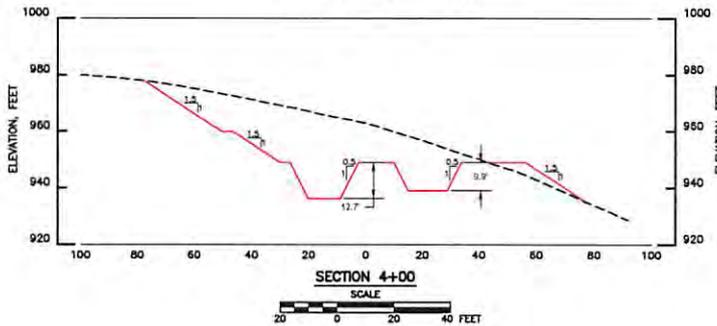
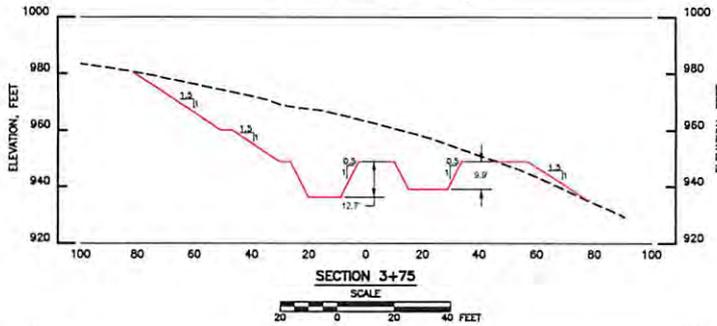
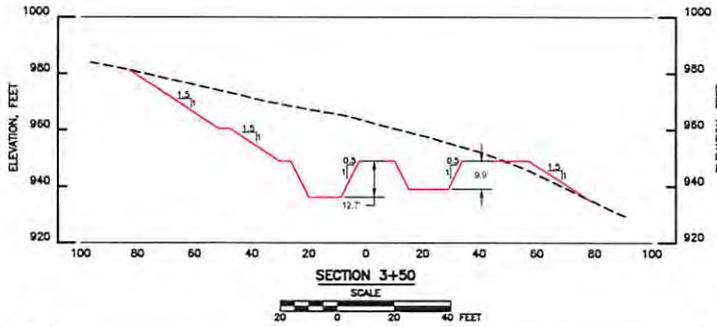
Alliance Consulting, Inc.
Engineers • Constructors • Scientists

SEELYEVILLE, MO (314) 285-1000 OAKCROFT, VA (703) 744-2600

BASELINE CROSS SECTIONS STATION 0+00 THROUGH 3+25
SAMPLE NO. 4 WELL PAD
PROPOSED PAD AND EXTENSION AND PITS
CLAY COUNTY, WEST VIRGINIA
Prepared For
CUNNINGHAM ENERGY LLC
1212 STAUNTON ROAD, CHARLESTON, WEST VIRGINIA 25314

CAD BY	JWG 07/28/16	PROJECT NO.	B16-301-2144	FIGURE NO.	2
CHECKED BY					
APPROVED BY					
			DRAWING NO. B16-301-E2		

3506381



"I, THE UNDERSIGNED, HEREBY CERTIFY" THAT THIS MAP IS CORRECT AND SHOWS TO THE BEST OF MY KNOWLEDGE AND BELIEF ALL THE INFORMATION REQUIRED BY THE SURFACE-MINING LAWS OF THIS STATE.

R.P.E. NO. _____
ACKNOWLEDGES BEFORE ME A NOTARY PUBLIC,
THIS ____ DAY OF _____, MY COMMISSION EXPIRES _____

"THE TERM 'CERTIFY' AS USED HEREIN IS DEFINED AS FOLLOWS: AN ENGINEER'S CERTIFICATION OF CONDITIONS IS A DECLARATION OF PROFESSIONAL JUDGMENT. IT DOES NOT CONSTITUTE WARRANTY OR GUARANTEE, EITHER EXPRESSED OR IMPLIED, AND DOES NOT RELIEVE ANY OTHER PARTY OF THEIR RESPONSIBILITY TO ABIDE BY CONTRACT DOCUMENTS, APPLICABLE CODES, STANDARDS, REGULATIONS AND ORDINANCES."

LEGEND:
--- EXISTING GROUND
--- PROPOSED GROUND



REV.	DATE	DESCRIPTION	P.M.
1	10/03/16	CHANGED PIT SIZE	

Alliance Consulting, Inc.
Engineers • Constructors • Scientists

BICKLEY, WV ENGINEERING, PA
(304) 281-1811 (717) 744-2244

**BASELINE CROSS SECTIONS
3+50 THROUGH 5+00**
SAMPLE NO. 4 WELL PAD
PROPOSED PAD AND EXTENSION AND PITS
CLAY COUNTY, WEST VIRGINIA

Presented For:
CUNNINGHAM ENERGY LLC
1212 STAUNTON ROAD, CHARLESTON, WEST VIRGINIA 25314

CAD BY	JMG 07/28/16	PROJECT NO.	B16-301-2144	FIGURE NO. 3
CHECKED BY				
APPROVED BY				DRAWING NO. B16-301-E3

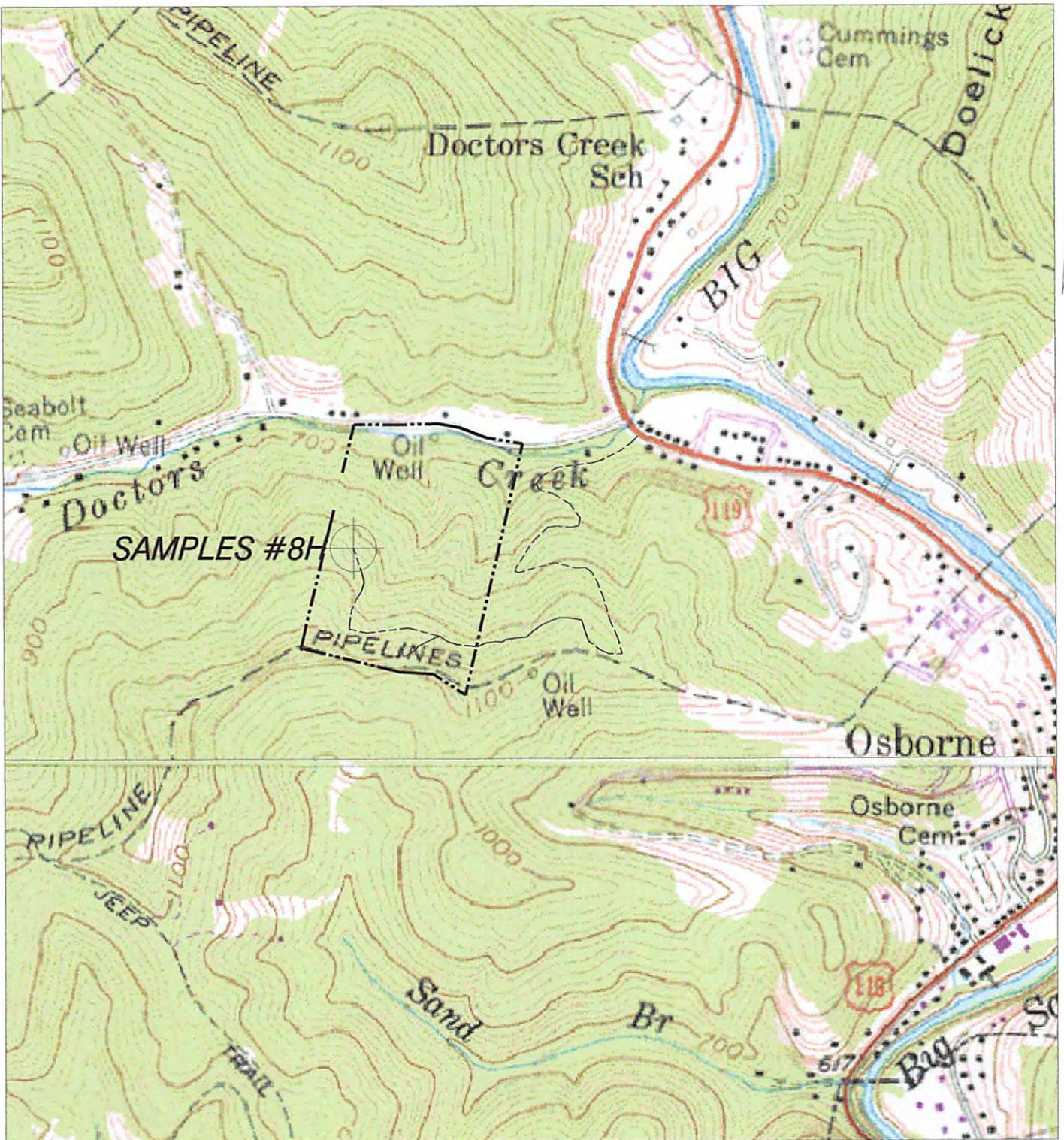
NOTE:
FOR PLAN VIEW OF BASELINE CROSS SECTIONS, REFER TO DRAWING NO. B16-301-E1.

3006381

CUNNINGHAM ENERGY, LLC.

Form W-9

SAMPLES #8H



NORTH

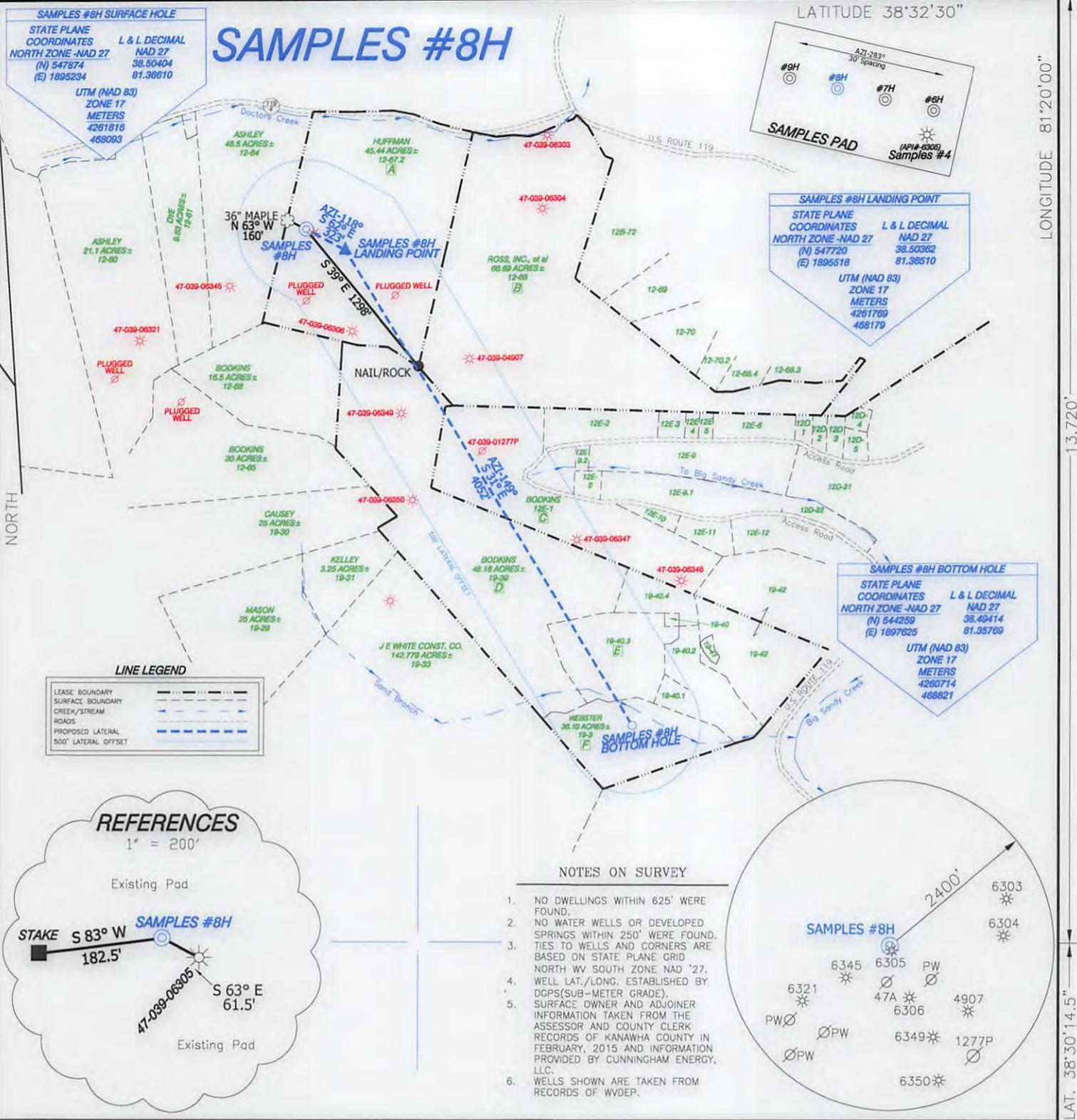
HUPP Surveying & Mapping

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

1" = 1000'
CLIO Quad

RECEIVED
Office of Oil and Gas
CUNNINGHAM ENERGY, LLC.
3230 PENNSYLVANIA AVE.
CHARLESTON, WV 25302
Environment Department of

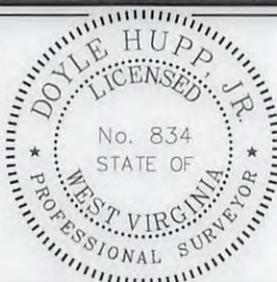
SAMPLES #8H



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 PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 834

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



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE MARCH 11, 20 15
 OPERATORS WELL NO. SAMPLES #8H
 API WELL NO. 47-039-06381H
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W2041 (BK74-38)
 PROVEN SOURCE OF ELEVATION DGPS (SUB-METER) SCALE 1" = 1000'

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

WELL TYPE : OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW
 LOCATION : ELEVATION 945' WATERSHED DOCTORS CREEK
 DISTRICT BIG SANDY COUNTY KANAWHA QUADRANGLE CLIO 7.5'
 SURFACE OWNER ROBERT HUFFMAN ACREAGE 45.44±
 ROYALTY OWNER SOPHIA SAMPLES, et al LEASE ACREAGE 418.74±
 PROPOSED WORK : LEASE NO. _____
 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 WEIR
 ESTIMATED DEPTH TVD- 2,000' MD-6,380'

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

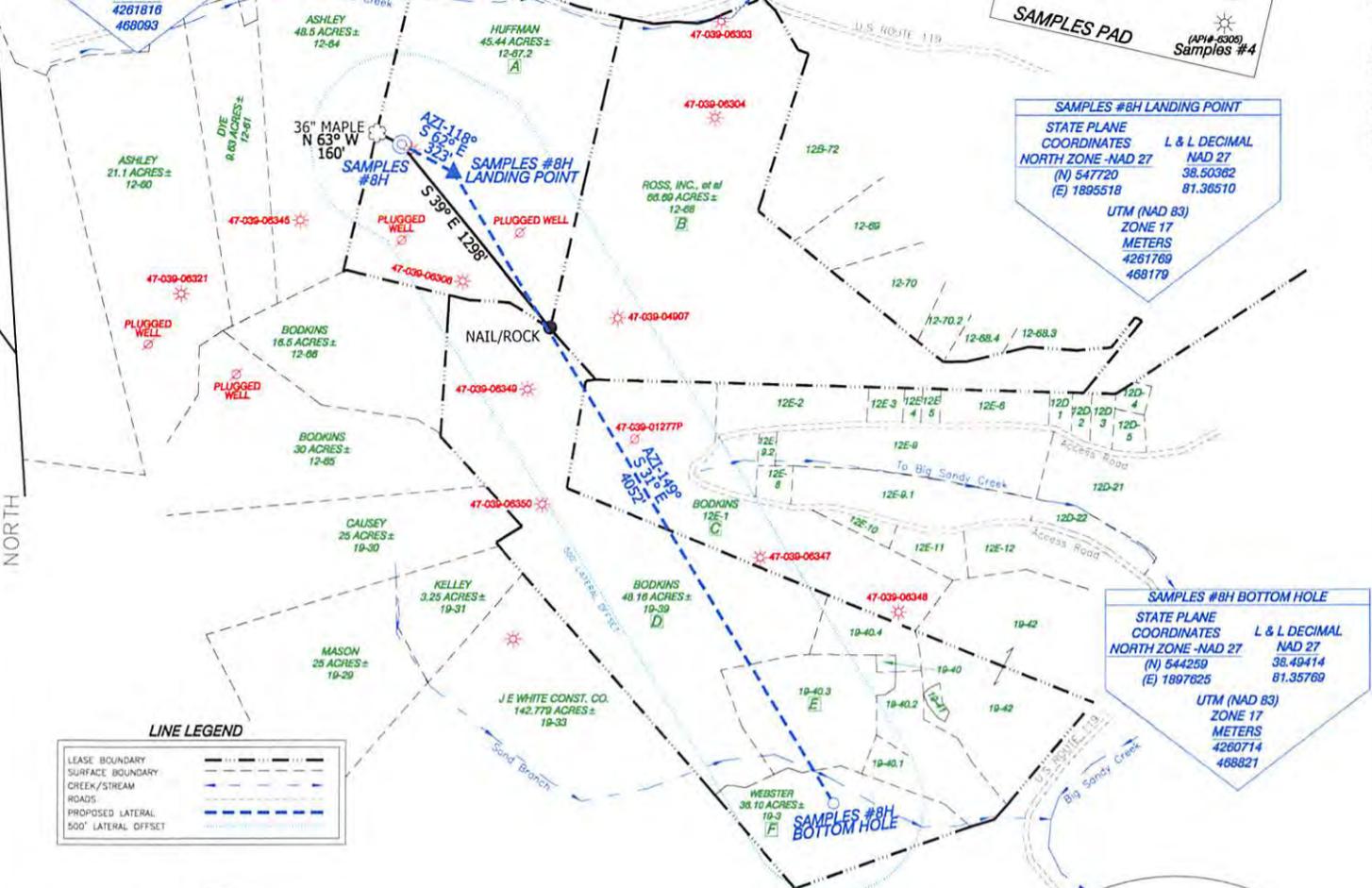
SAMPLES #8H

SAMPLES #8H SURFACE HOLE
 STATE PLANE COORDINATES NORTH ZONE -NAD 27
 (N) 547874 (E) 1895234
 L & L DECIMAL NAD 27
 38.50404 81.38610
 UTM (NAD 83) ZONE 17 METERS
 4261816 468093



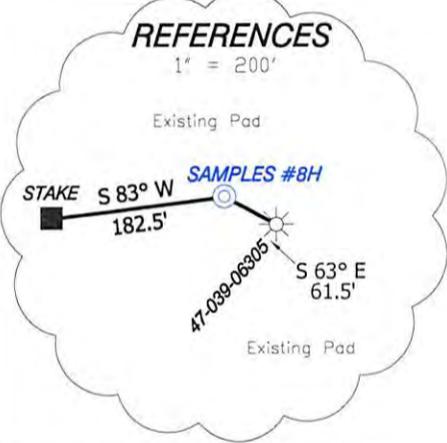
SAMPLES #8H LANDING POINT
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 (N) 547720 (E) 1895518
 L & L DECIMAL NAD 27
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 UTM (NAD 83) ZONE 17 METERS
 4261769 468179

SAMPLES #8H BOTTOM HOLE
 STATE PLANE COORDINATES NORTH ZONE -NAD 27
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 L & L DECIMAL NAD 27
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 UTM (NAD 83) ZONE 17 METERS
 4260714 468821

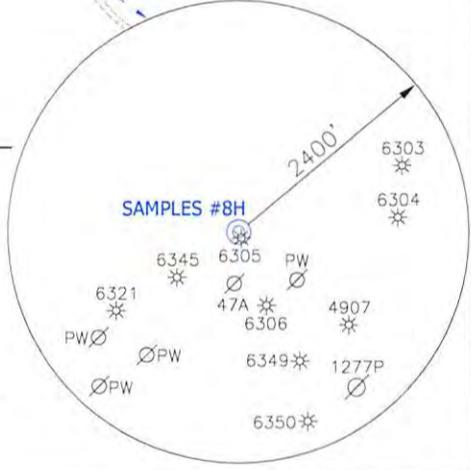


LINE LEGEND

LEASE BOUNDARY	---
SURFACE BOUNDARY	---
CREEK/STREAM	---
ROADS	---
PROPOSED LATERAL	---
500' LATERAL OFFSET	---



- 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 NORTH WV SOUTH ZONE NAD '27.
 - WELL LAT./LONG. ESTABLISHED BY DGPS(SUB-METER GRADE).
 - SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF KANAWHA COUNTY IN FEBRUARY, 2015 AND INFORMATION PROVIDED BY CUNNINGHAM ENERGY, LLC.
 - WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.



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 PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE MARCH 11, 20 15
 OPERATORS WELL NO. SAMPLES #8H
 API WELL NO. 47-039-06381H
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W2041 (BK74-38)
 PROVEN SOURCE OF ELEVATION DGPS (SUB-METER) SCALE 1" = 1000'

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

WELL TYPE : OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW
 LOCATION :
 ELEVATION 945' WATERSHED DOCTORS CREEK
 DISTRICT BIG SANDY COUNTY KANAWHA QUADRANGLE CLIO 7.5'
 SURFACE OWNER ROBERT HUFFMAN ACREAGE 45.44±
 ROYALTY OWNER SOPHIA SAMPLES, et al LEASE ACREAGE 418.74±
 PROPOSED WORK : LEASE NO.
 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 WEIR
 ESTIMATED DEPTH TVD- 2,000' MD-6,380'

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

SAMPLES #8H

SAMPLES #8H SURFACE HOLE
 STATE PLANE COORDINATES
 NORTH ZONE -NAD 27
 (N) 547874
 (E) 1895234

L & L DECIMAL
 NAD 27
 38.50404
 81.38610

UTM (NAD 83)
 ZONE 17
 METERS
 4261816
 489093



SAMPLES #8H LANDING POINT
 STATE PLANE COORDINATES
 NORTH ZONE -NAD 27
 (N) 547720
 (E) 1895518

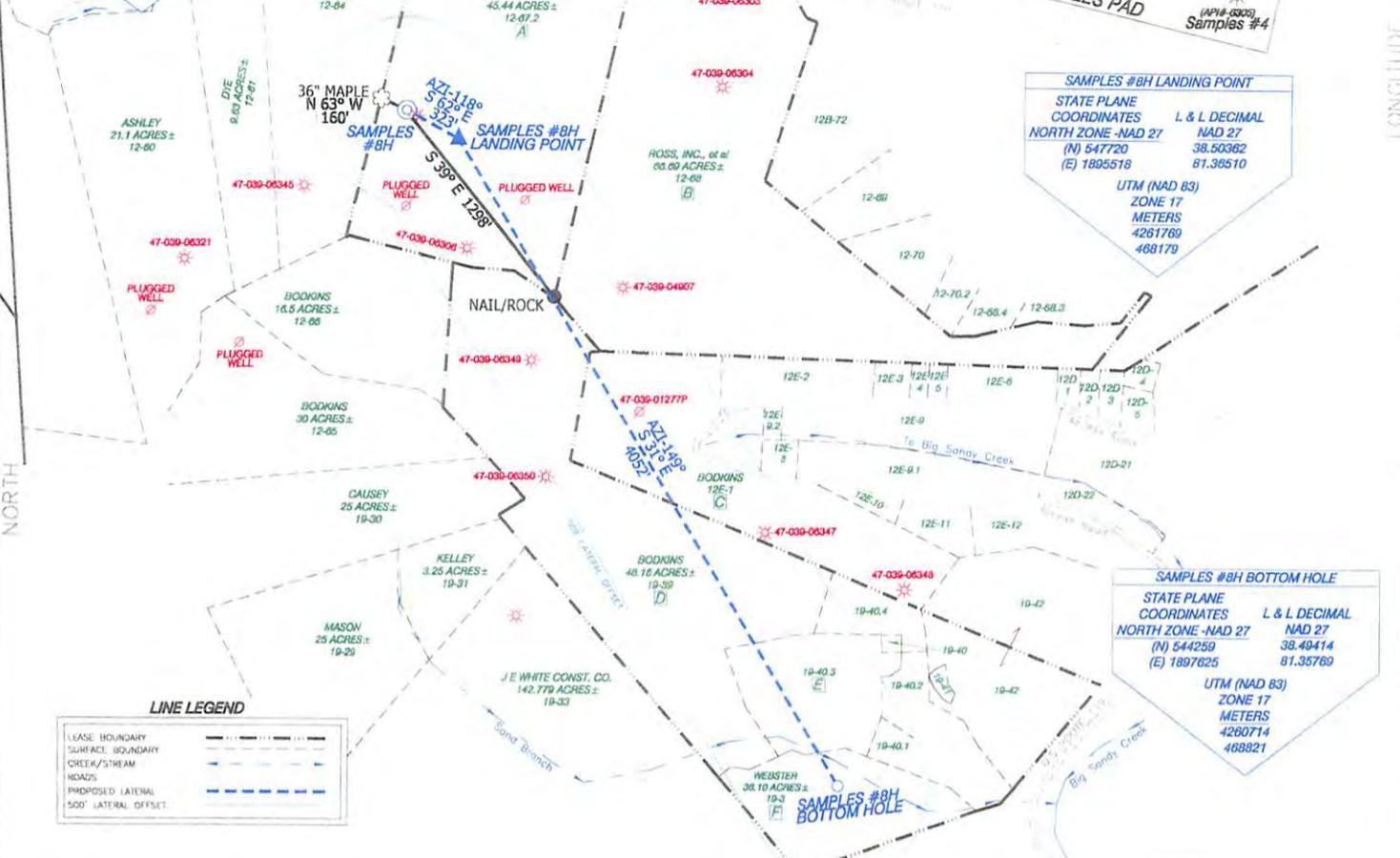
L & L DECIMAL
 NAD 27
 38.50362
 81.38510

UTM (NAD 83)
 ZONE 17
 METERS
 4261769
 468179

SAMPLES #8H BOTTOM HOLE
 STATE PLANE COORDINATES
 NORTH ZONE -NAD 27
 (N) 544259
 (E) 1897625

L & L DECIMAL
 NAD 27
 38.49414
 81.35769

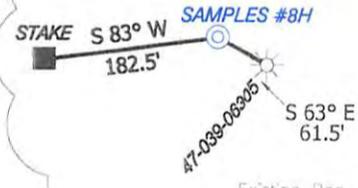
UTM (NAD 83)
 ZONE 17
 METERS
 4260714
 468821



REFERENCES

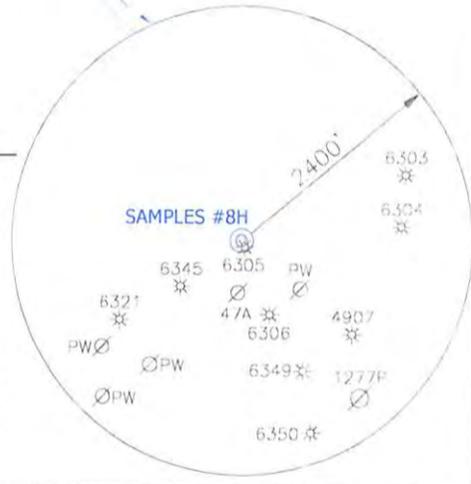
1" = 200'

Existing Pad



NOTES ON SURVEY

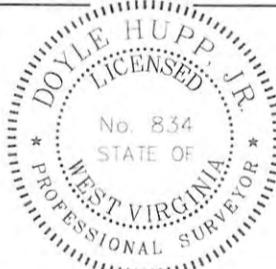
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P.S. 834

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



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