



 west virginia department of environmental protection

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

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

Monday, February 25, 2019
 WELL WORK PERMIT
 Horizontal / New Drill

CUNNINGHAM ENERGY LLC
 3230 PENNSYLVANIA AVENUE

CHARLESTON, WV 25304

Re: Permit approval for HAYS 4H
 47-039-06391-00-00

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: HAYS 4H
 Farm Name: CUNNINGHAM ENERGY, LLC
 U.S. WELL NUMBER: 47-039-06391-00-00
 Horizontal New Drill
 Date Issued: 2/22/2019

PERMIT CONDITIONSCTB
2/22/19

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 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. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

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
Operator ID: 494508594 County: KANAWHA District: BIG SANDY Quadrangle: BLUE CREEK 7.5

2) Operator's Well Number: HAYS 4H 3) Elevation: 872'

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

5) Proposed Target Formation(s): WEIR Proposed Target Depth: 2,000

6) Proposed Total Depth: 2000TVD/6080 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 SHALLOW HORIZONTAL WELL. WE PLAN TO RUN THE WEATHERFORD WET SHOE SYSTEM AND PERFORATE.

Handwritten signature and date: 2-8-19

13) CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor	20"	LS	65LBS	30'	30'	CTS
Fresh Water	13 3/8"	LS	43.6 LBS	400'	400'	CTS
Coal						
Intermediate	9 5/8"	AT-50	26 LBS.	1900'	1900'	CTS
Production	5 1/2"	P-110	20 LBS	6,080'	6,080'	CTS
Tubing						
Liners						

Packers: Kind: _____
Sizes: _____
Depths Set _____

WW-2A
(Rev. 6-14)

1). Date: DECEMBER 20, 2018
2.) Operator's Well Number HAYS #4H
State 47- County KANAWHA Permit -
3.) API Well No.: 039

**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 CUNNINGHAM ENERGY, LLC Address 3230 PENNSYLVANIA AVE CHARLESTON, WV 25302 (b) Name _____ Address _____ (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 Address TERRY URBAN P.O. BOX 1207 CLENDENIN, WV 25045 Telephone 304-549-5915

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

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)
- 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.

RECEIVED
Office of Oil and Gas
DEC 21 2018
WV Department of Environmental Protection



Well Operator CUNNINGHAM ENERGY, LLC
By: RYAN E. M. CUNNINGHAM
Its: MEMBER
Address: 3230 PENNSYLVANIA AVENUE CHARLESTON, WV 25302
Telephone: 304-344-9291
Email: RYAN.CUNNINGHAM@CUNNINGHAMENERGY.COM

Subscribed and sworn before me this 20th day of DECEMBER, 2018

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

03/01/2019

WW-2A Surface Waiver (4/16)

SURFACE OWNER WAIVER

County KANAWHA

Operator Cunningham Energy LLC
Operator well number 494508594

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, WW-9, 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.

Signature Date

Company Name Cunningham Energy LLC
By Ryan J. E. M. Cunningham
Office of Oil and Gas Date

Print Name

DEC 21 2018
Signature Date 12/20/18
WV Department of Environmental Protection

WW-2A Coal Waiver

COAL OPERATOR, OWNER, OR LESSEE WAIVER

County KANAWHA

Operator CUNNINGHAM ENERGY, LLC

Operator's Well Number HAYS #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.

Signature Date

Company Name CUNNINGHAM ENERGY, LL
By RYAN E. M. CUNNINGHAM
Its _____ Date _____

Signature Date

RECEIVED
Office of Oil and Gas
DEC 21 2018
WV Department of
Environmental Protection

WW-2A1
(Rev. 1/11)

Operator's Well Number HAYS #4H

**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
H & L Trust	CUNNINGHAM ENERGY, LLC	1/8	264 - 298


**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

DEC 21 2018

WV Department of
Environmental Protection

03/01/2019

WW-2B1
(5-12)Well No. HAYS #4HWest 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.

RECEIVED
Office of Oil and Gas

DEC 21 2018

WV Department of
Environmental Protection

HUPP Surveying & Mapping

P.O. BOX 647

GRANTSVILLE, WV 26147

(304) 354-7035

FAX: (304) 354-6548

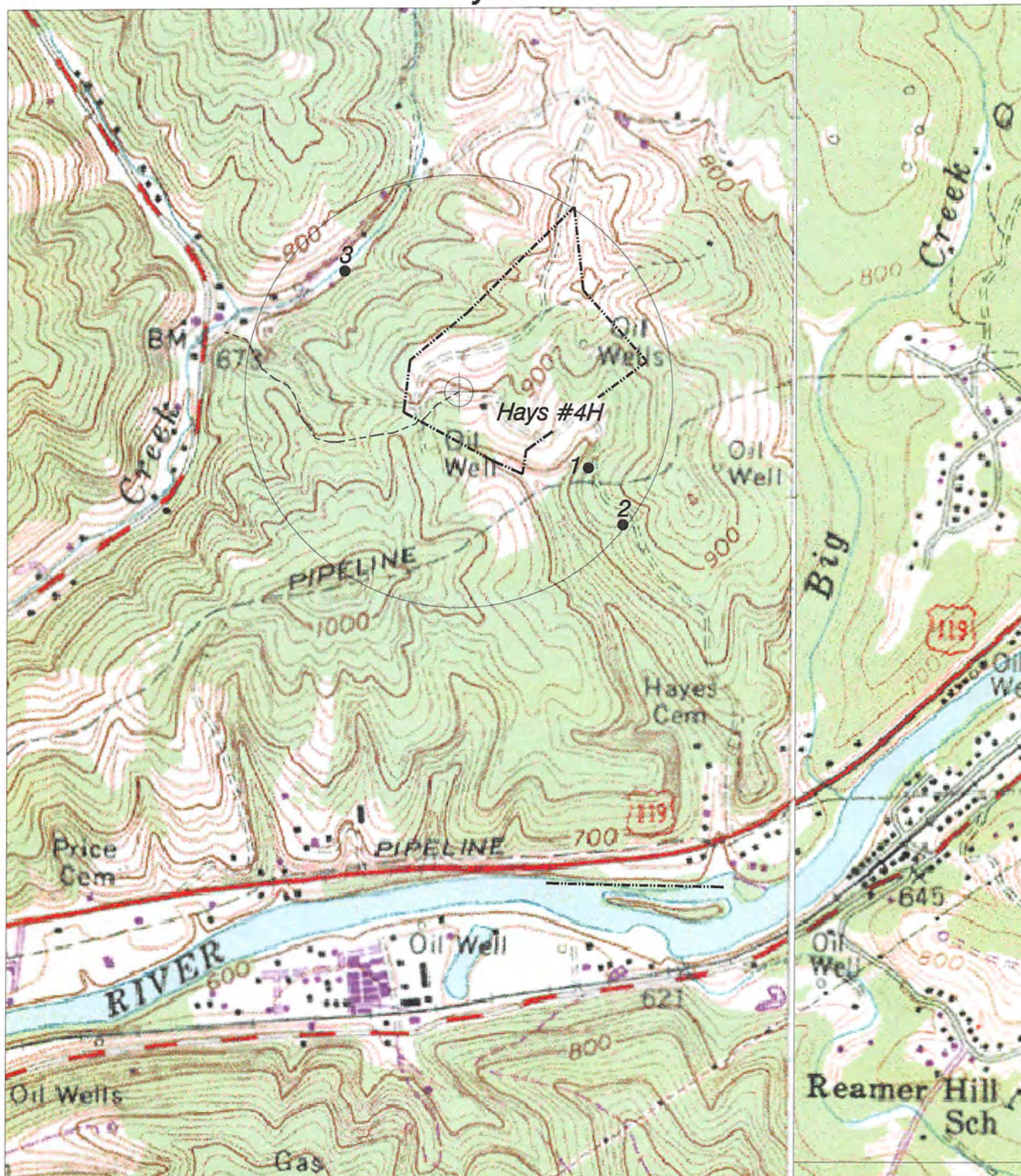
January 30, 2019

RE: Water Samples for Hays #4H

There appears to be three (3) potable water source within 1,500' of Hays #4H, therefore tests should be offered and samples taken as required.

1. Veronica Loss
677 Wolverton Mtn. Rd.
Clendenin, WV 25045
Tax Map 18 Parcel 149
2. Betty & William White
548 Wolverton Mnt. Rd.
Clendenin, WV 25045
Tax Map 18 Parcels 149.1 & 150
3. David & Thelma Strickland
166 White Hollow Rd
Elkview, WV 25071
Tax Map 18 Parcel 134

Cunningham Energy, LLC. Hays #4H



NORTH

HUPP Surveying & Mapping

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

1" = 1000'
Blue Creek Quad

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

03/01/2019

WW-9
(5/16)

API Number 47 - 039
Operator's Well No. HAYS #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 494508594

Watershed (HUC 10) ELK RIVER Quadrangle BLUE CREEK 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: _____

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

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: Yes, we will utilize a closed loop tank system.

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. LANDFILL

-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 _____

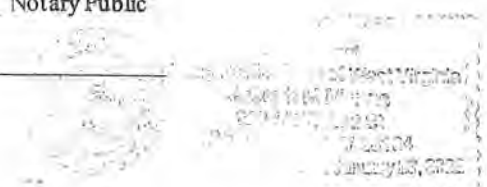
Company Official (Typed Name) RYAN E. M. CUNNINGHAM

Company Official Title PRESIDENT

Subscribed and sworn before me this 20th day of December, 20 18

Notary Public

My commission expires January 23, 2022



Proposed Revegetation Treatment: Acres Disturbed 2.95 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
KY - 31	40
ALSIKE CLOVER	5
ANNUAL RYE	15

Seed Type	lbs/acre
ORCHID GRASS	15
ALSIKE CLOVER	5

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: _____

Comments: _____

SEE - WW9
1H

Title: Angela Miller

Date: 2-8-19

Field Reviewed? Yes

No

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

Operator Name: CUNNINGHAM ENERGY, LLC
Watershed (HUC 10): ELK RIVER Quad: BLUE CREEK 7.5'
Farm Name: HAYS HEIRS, ET. AL.

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

NO PIT.

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

NO PIT.

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

NO PIT.

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

NO PIT.

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

WW-9- GPP
Rev. 5/16

Page _____ of _____
API Number 47 - 039 - _____
Operator's Well No. HAYS #4H _____

NO PIT.

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

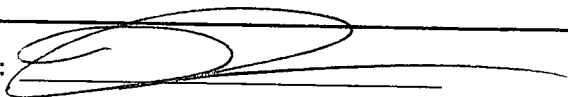
NO PIT.

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.

NO PIT.

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

NO PIT.

Signature: 

Date: 12/20/18

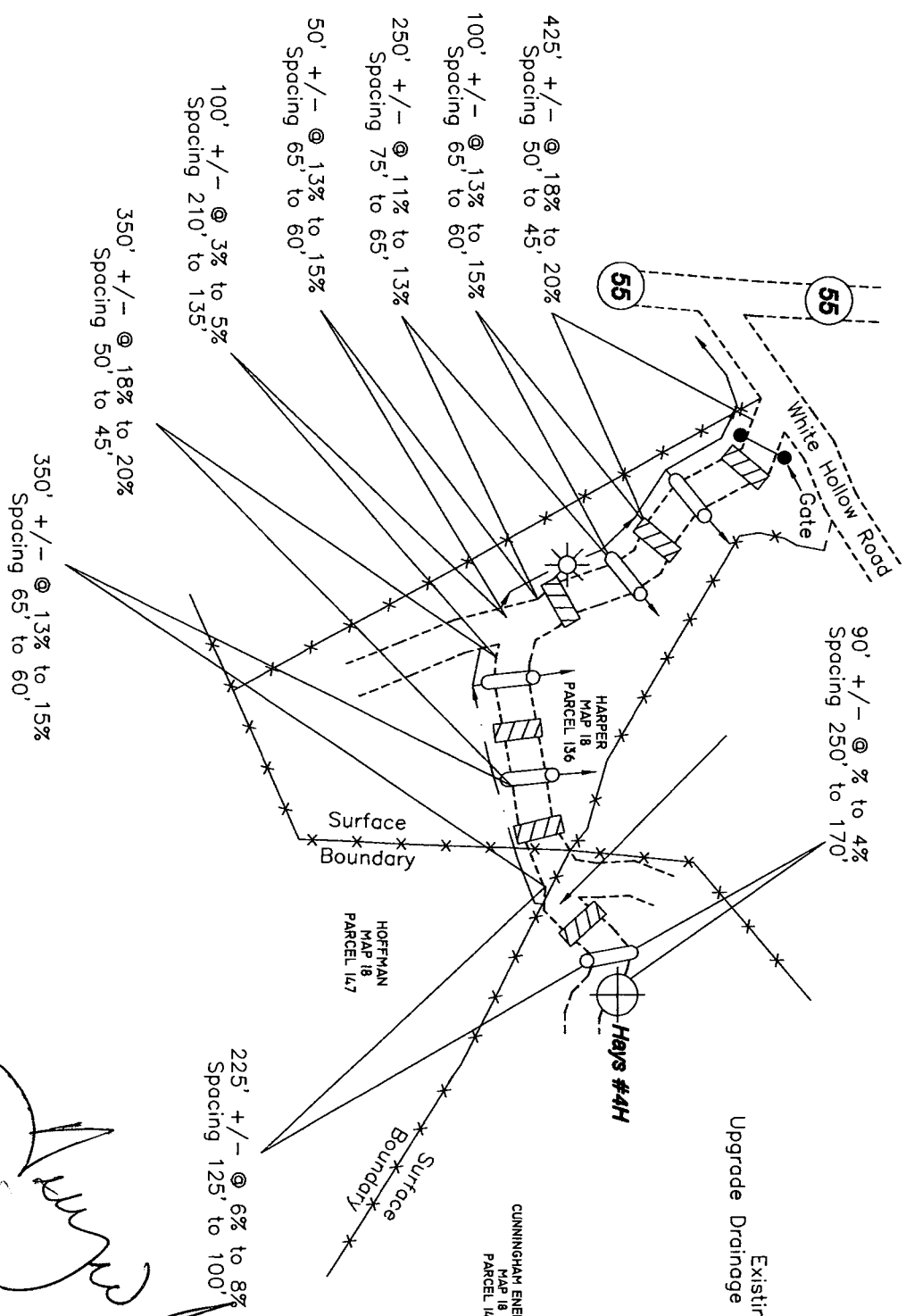
03/01/2019

Form W-9

CUNNINGHAM ENERGY, LLC.

Page 1 of 2

Drawing Not To Scale NORTH



Existing Access.
Upgrade Drainage Devices Where Needed.

CUNNINGHAM ENERGY, LLC.
MAP 18
PARCEL 148

[Handwritten Signature]

○ Install Minimum 12" Culvert

ALL ROADS SHOWN HEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH DEPT. OF TRANSPORTATION, WV DOT REGULATIONS. SEPARATE PERMITS MAY BE REQUIRED BY THE DOT. REMOVE BUSHES, TREES AND APPROPRIATE GEOTECH. BARRIERS ARE TO BE CONSTRUCTED AT ALL CULVERT AND CROSS DRAIN PILETS AND OUTLETS AS REQUIRED IN THE "V" DEPT. OF TRANSPORTATION FIELD CONDITIONS CHECK SHEETS AND REPAIR AND MAINTENANCE MANUAL. THESE SHALL BE EVALUATED AND UTILIZED FIRST. CONTRACTORS ARE RESPONSIBLE FOR NOTIFYING TO THE OPERATOR AND INSPECTOR PRIOR TO ANY DEVIATION FROM THIS PLAN. CONTRACTOR/COMPANY ARE RESPONSIBLE FOR LOCATING UTILITIES WHETHER SHOWN ON THIS PLAN OR NOT. TEMPORARILY FILL 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

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

Drafted BY:

DB

Date Drafted:

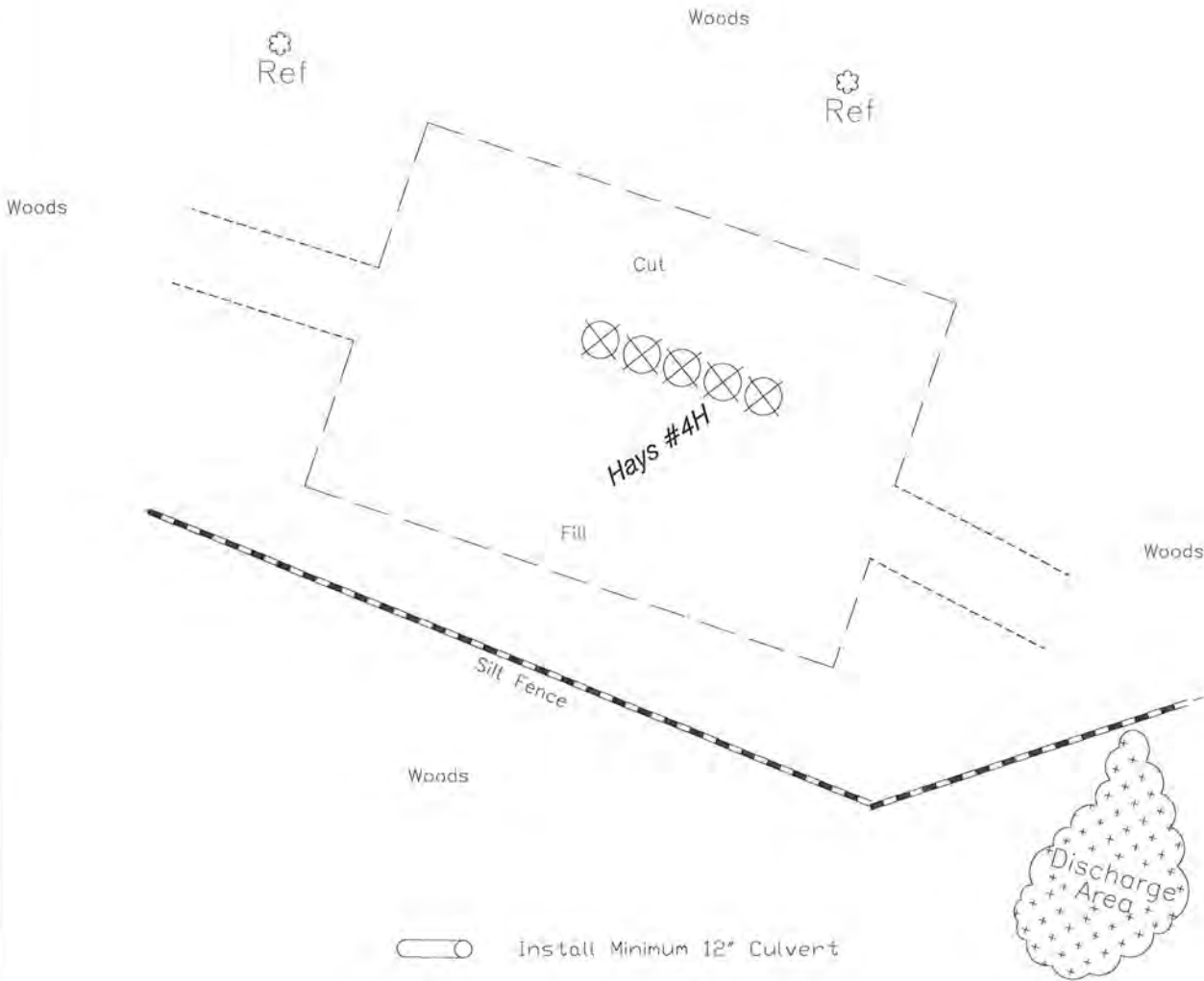
01/30/19

Job Number:

W20182637

HAYS #4H

CUNNINGHAM ENERGY, LLC. HAYS #4H



Drawing Not To Scale NORTH

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 D.D.T. REGULATIONS. SEPARATE PERMITS MAY BE REQUIRED BY THE D.D.T.

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.

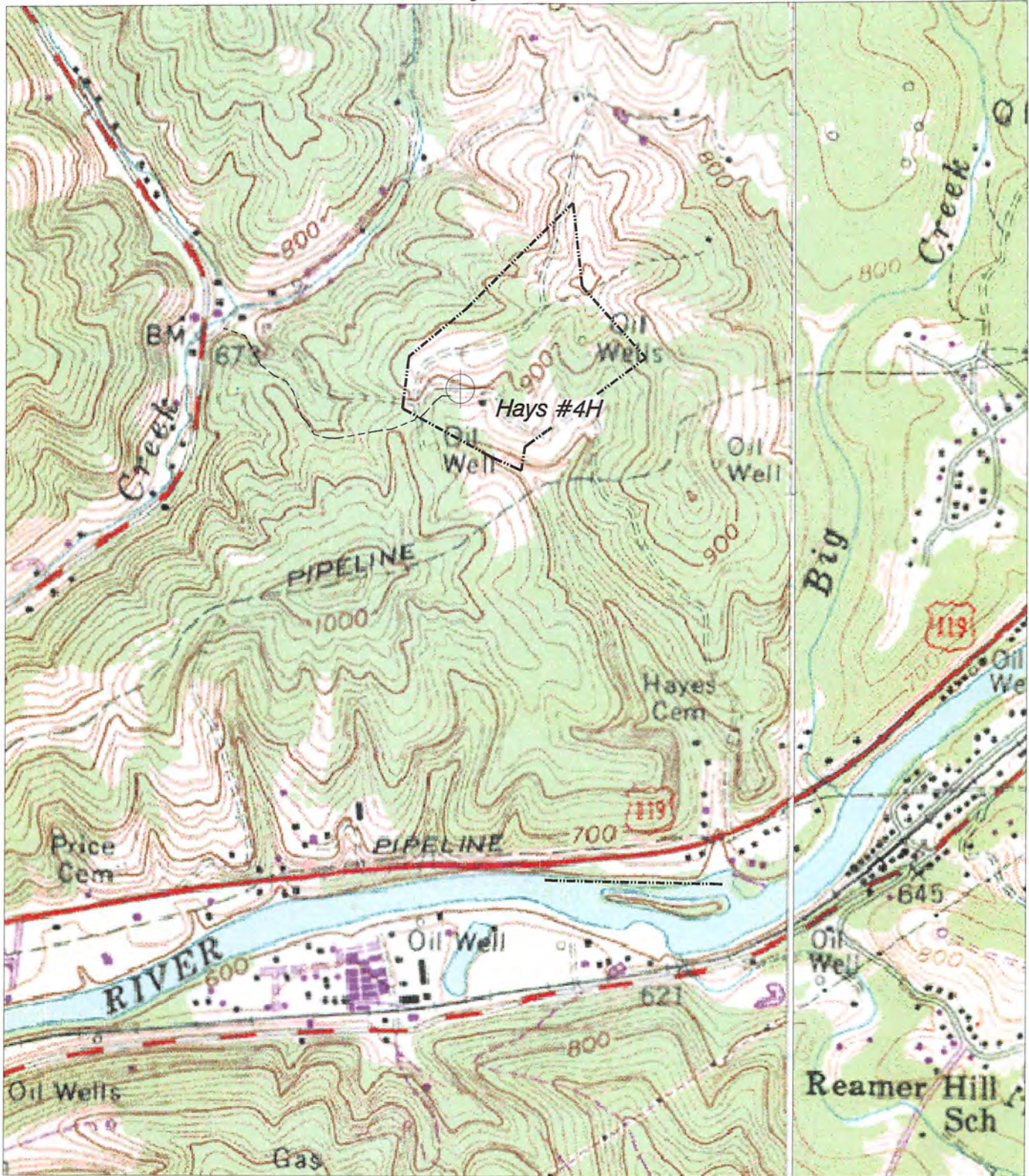
TEMPORARILY SEED AND MULCH ALL SLOPES AFTER CONSTRUCTION OF LOCATION.

CUT AND STACK ALL TIMBER ABOVE 6-INCHES IN DIAMETER AND THICKER.

STACK BRUSH BELOW LOCATION FOR SEDIMENT CONTROL.

HUPP Surveying & Mapping P.O. BOX 647 GRANTSVILLE, WV 26147 PH:(304)354-7035 E-MAIL: hupp@frontiernet.net	Drafted BY:	Date Drafted:	Job Number:
	DB	01/30/19	W20182637

Cunningham Energy, LLC. Hays #4H



NORTH

HUPP Surveying & Mapping

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

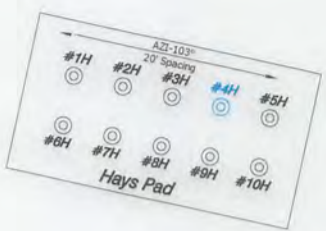
1" = 1000'
Blue Creek Quad

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

HAYS #4H

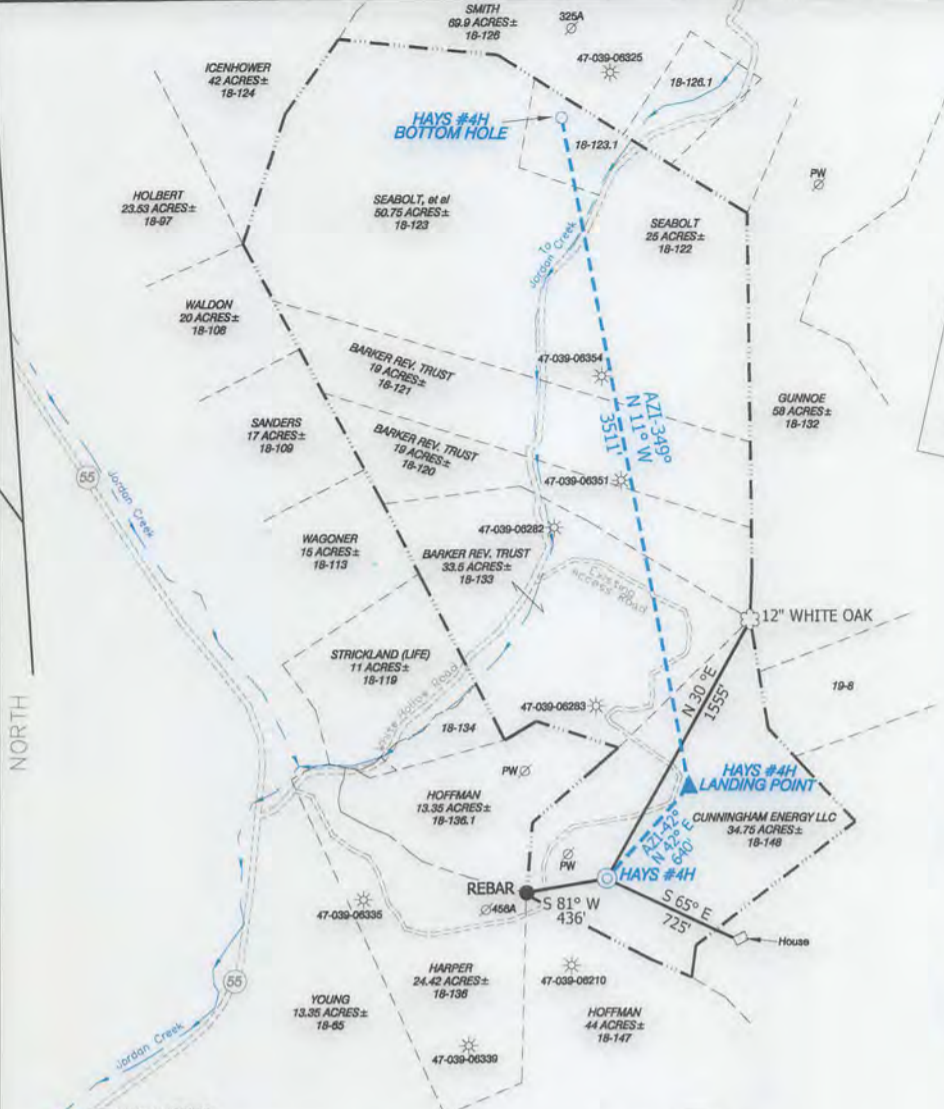
HAYS #4H SURFACE HOLE		
WV STATE PLANE COORDINATES	L & L DECIMAL	UTM (NAD 83) ZONE 17
SOUTH ZONE -NAD 27	NAD 27	METERS
(N) 540720	38.48434	4269636
(E) 1890373	81.38298	468611

03/01/2019



HAYS #4H LANDING POINT		
STATE PLANE COORDINATES	L & L DECIMAL	UTM (NAD 83) ZONE 17
SOUTH ZONE -NAD 27	NAD 27	METERS
(N) 541196	38.48565	4259781
(E) 1890801	81.38149	466742

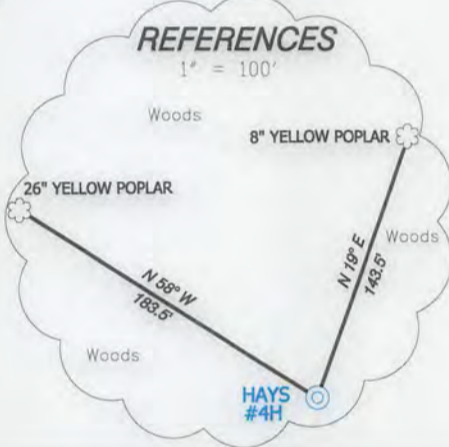
HAYS #4H BOTTOM HOLE		
STATE PLANE COORDINATES	L & L DECIMAL	UTM (NAD 83) ZONE 17
SOUTH ZONE -NAD 27	NAD 27	METERS
(N) 544646	38.49512	4260532
(E) 1890149	81.38382	468543



LINE LEGEND

LEASE BOUNDARY	---
SURFACE BOUNDARY	----
CREEK/STREAM	~~~~~
ROADS	=====
PROPOSED LATERAL SURVEYED LINE	-----

- NOTES ON SURVEY**
- 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 NOVEMBER, 2018 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 JANUARY 30, 2019
 OPERATORS WELL NO. HAYS #4H
 API WELL NO. 47-039-06391H
 STATE COUNTY PERMIT

P.S. 834

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

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. W2637 (BK 92-78)
 PROVEN SOURCE OF ELEVATION DGPS (SUBMETER GRADE) 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 883' WATERSHED ELK RIVER
 DISTRICT BIG SANDY COUNTY KANAWHA QUADRANGLE BLUE CREEK 7.5'
 SURFACE OWNER CUNNINGHAM ENERGY, LLC ACREAGE 34.75±
 ROYALTY OWNER HAYS HEIRS, et al LEASE ACREAGE 162.0±
 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-2000' MD-6150'

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

LONGITUDE 81°22'30"
 LAT. 38°29'03.6"
 COUNTY NAME
 PERMIT