

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

August 01, 2014

WELL WORK PERMIT Horizontal Well

This permit, API Well Number: 47-1502898, 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 #7H

Farm Name: CONNER, CHESSIE, .. ET AL

API Well Number: 47-1502898

Permit Type: Horizontal Well

Date Issued: 08/01/2014

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. This permit is being conditioned to address the possibility of flooding in the area of this well. Any tanks stored on this location must be securely anchored in cement to prevent the loss of tanks should a flood occur. In addition, cages must be placed around the well head to prevent debris from damaging the well head.

WW - 2B (Rev. 8/10) #19269

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

1) Well Operat	or: CUN	NINGHA	M ENERGY, LL	C 494508594	CLAY - 15	UNION - 5	ELKHURST 7.5
	=			Operator ID	County	District	Quadrangle
2) Operator's V	Vell Num	ber: J.S.	COCHRAN 7H		3) Elevation:	1,215'	
4) Well Type: (a) Oil>	or G	as X				
(1	b) If Gas:	Produ	uction X / Un	derground St	orage	_	
		Dee	p/ S	Shallow X	LY		
5) Proposed Ta 6) Proposed To 7) Approximate 8) Approximate	otal Depth fresh wa	n: 5,143' ater strat		Formation at	Proposed Ta	rget Depth: 2 al Depth: NJ	100' TVD
9) Approximate	coal sea	am depth	s: NO COAL L	ISTED ON TI	TLE		
10) Approximat	te void de	epths,(co	al, Karst, other):	NONE			
11) Does land	contain c	oal seam	s tributary to ac	tive mine?	NONE		
PRILL AND STI	MULATE	ANEW	nd fracturing meth SHALLOW HOR	RIZONTAL W	ELL. WE PLA	AN TO RUN T	THE PACKER
			HE LATERAL DO				CEMENT TO
13////	SPECIFIC	CA	ASING AND TU		RAM	RECE Office of C	EIVEC Oil and Gas
47	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu.	The state of the s
Conductor	13"	LS	43.6 LBS	30	30	MANATER	artment of
Fresh Water	9 5/8"	LS	26 LBS	400'	400'	Environmen	ntal Protection
Coal				2050	2050		
Intermediate	7"	J-55	20 LBS	1775	_1775	CTS	
Production	4 1/2"	N-80	11.6 LBS	5143'	5143'	PACKERS	PLUS
Tubing							
Liners							
Packers: Kind Size Dep							



Cochran #7H Frac Design

- 15 Stages (every 200' in the lateral)
- 300 bbl Water/Stage
- 25,000 lbs Sand/Stage
- 30 bbl/Minute Downhole Rate

Received

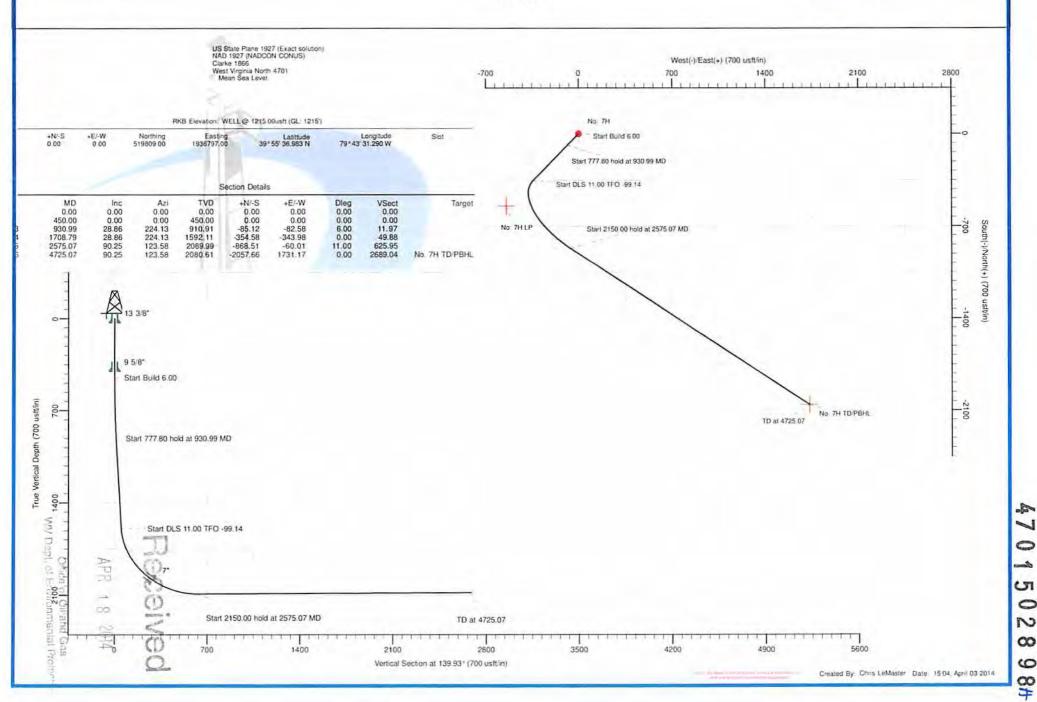
APR 1.8 2014

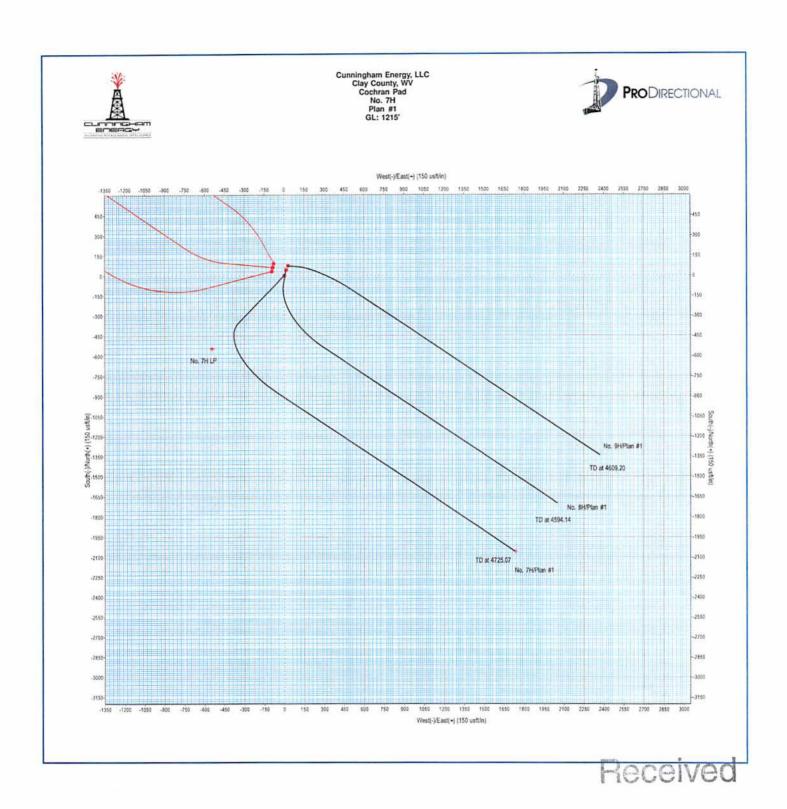
Office of Oil and Gas
WV Dept. of Environmental Protection



Cunningham Energy, LLC Clay County, WV Cochran Pad No. 7H Plan #1 GL: 1215'







APR 1 8 2014



RECEIVED
Office of Oil and Gas

MAY 2 2 2014

WV Department of Environmental Protection

WW-2	2A
(Rev.	6-07)

1). Date: MARCH 11, 2014

2.) Operator's Well Number

State County Permit

J.S. COCHRAN #7H

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 Ow (a) Name	vner(s) to be served CHESSIE CONNER, E		5) (a) Coal Operator Name
Address	1412 SATTES CIRCLE		Address
	NITRO, WV 25143		
(b) Name	(iii)ie, iii zeiio		(b) Coal Owner(s) with Declaration
Address			Name
Address	-		Address
			Address
(c) Name			Name
Address			Address
Address			Address
6) Inspector	ED GAINER		(c) Coal Lessee with Declaration
Address			Name
Address	P.O. BOX 821		
Talanhana	SPENCER, WV 25276		Address
Telephone	304-389-7582		
2. 2. 2. 2. 2. 2.			MED ABOVE TAKE NOTICE THAT:
OR Included is the	ne lease or leases or	other continuing	contract or contracts by which I hold the right to extract oil and gas
I have re issued under this I certify this application footaining the info	Personal Servi Certified Mail (I Publication (No ad and understand C application. under penalty of law orm and all attachmen armation, I believe tha	ce (Affidavit attar Postmarked posi- otice of Publication Chapter 22-6 and that I have persents, and that bast the information	stal receipt attached) on attached) d 35 CSR 4, and I agree to the terms and conditions of any permit sonally examined and am familiar with the information submitted on assed on my inquiry of those individuals immediately responsible for n is true, accurate and complete, s for submitting false information, including the possibility of fine and
mmm	OFFICIAL SEAL	By:	RYAN E. M. CUNNINGHAM
	NOTARY PUBLIC ATE OF WEST VIRGINIA	Its:	PRESIDENT PRESIDENT
E STATE OF DE	ANIELLE N. BAYS	Address	3230 PENNSYLVANIA AVENUE
1200 Pennsylv	unningham Energy, LLC vania Avenue, Charleston, WV 25302	71041000	CHARLESTON, WV 25302
My Comm	rania Avenue, Charleston, WV 25302 ission Expires February 10, 2015	Telephone	304-344-9291
Subscribed and s	sworn before me this	151 day of	MARCH Papal , 2014
Dane	n. 131-		Notary Public
My Commission I		10, 2015	A131 18 4019
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

THE RESERVE OF THE PERSON NAMED IN	ion visit our website at	www.usps.coms
OFF	ICIAL	USE
Postage	s 161	
Certified Fee	330	Postmerk
Return Receipt Fee indorsement Required)	270	Here
Restricted Delivery Fee Endorsement Required)		
Total Postage & Fees	\$ 761	7.14
Sent To	Chessie Conn	er et al

Received

APR + 0 2014

Office of Oil and Gas WV Dept. ut Environmental ProteTo Whom It May Concern:

I, Peggy Conner, heir to the Chessie Conner Estate, do hereby authorize Jean Miller as my Agent in any and all business, decisions and other legal matters pertaining to the real estate located in Union District, Clay County WV better described as Tax Map 17 Parcel 54 and any other lands that Cunningham Energy operates.

Peggy Conner

WITNESS the due execution hereof, this 16 day of January, 2014.

Witness

RECEIVED
Office of Oil and Gas

JUL 28 2014

WV Department of Environmental Protection

		SURFACE OWN	NER WAIVER	
County	CLAY	Operat Operat	or or well number	J.S. COCHRAN 7H
	INSTRUCTIONS T	O SURFACE OW	NERS NAMED ON	PAGE WW2-A
appeared on be the only permits are	e tract is owned by more than the Sheriff's tax ticket on the la owner who will actually receiv valid for 24 months. If you do re nmediately if you know who it is	three persons, the and or because you e these materials. not own any interes a. Also, please noti ARE NOT REQUIR!	n these materials was actually occupy the set of the country of the surface trace trace trace to the well operator of the well operator of the country of the well operator of the country of the well operator of the country of the c	OMMENT
	NV 25304			
Time Limits operator files be filed in pe be s ure of t handling. If the planned well operator from the app The 1) 2) 3) I	and methods for filing common and methods for filing common and ship and an arrectived in the mail by the date. Check with your possion have been contacted by the work described in these material aments must be in writing. Ye's name and well number and to lication. You may add other do Chief has the power to deny or the proposed well work will contain and sediment of compage would occur to publicly	the Chief's office to stmaster to ensure ewell operator and als, then the permit four comments muthe approximate locuments, such as a condition a well we estitute a hazard to control plan is not a cowned lands or re	after the filing date to by the time stated all a dequate delivery you have signed a may be issued at an ist include your name cation of the proposisketches, maps or pork permit based on the safety of person dequate or effective sources;	ne, address and telephone number, the ed well site including district and county shotographs to support your comments, comments on the following grounds: as.
5) 1 If you	nore of the rules promulgated used want a copy of the permit opy from the Chief.	substantial violation ander Chapter 22, a as it is issued of	on of a previous pe and has failed to aba or a copy of the or	rmit or a substantial violation of one or ate or seek review of the violation", rder denying the permit, you should
I her Application for order on F or described the	eby state that I have read the increase with the increase within the increase with the increase within the increase with	TARY STATEMEN nstructions to surfa WW2-A, and attac a s oil a nd erosio	Illing. Contact the Contact the Contact the Contact the Contact that the contact that the contact the	I have received copies of a Notice and of pages 1 through including a work osed well work on my surface I and as
a parameter	a second on those materials.			ese materials And bayene objection to Environmental Protection
Que.	TION BY A NATURAL PERSO	N Date <i>5-9-14</i>	Company	CUTION BY A CORPORATION, ETC.
Jea	Signature n Miller	Date 5-7-17	Name By Its	Date
I	Print Name		Signat	ture Date

WW-2A1 (Rev. 1/11)

Operator's Well Number J.S. COCHRAN #7H

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 he reby a cknowledges 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 ac quired from the appropriate authority before the affected activity is initiated.

Well Operator: By:Its:

RYAN E.M. CUNNINGHAM CUNNINGHAM ENERGY, LLC

PRESIDENT

WW-2B1 (5-12) Well No. J.S. COCHRAN #7H

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.

SEE ATTACHMENT

Received

APR 1 8 2014

Marina of Oil and Car. Savijonmer 08/01/2014

HUPP Surveying & Mapping P.O. BOX 647

GRANTSVILLE, WV 26147

(304) 354-7035 hupp@frontiernet.net FAX: (304) 354-6548

February 12, 2014

RE: Water Samples for J.S. Cochran #7H

There appears to be one (1) potable water sources within 1,500' of J.S. Cochran #7H, therefore tests should be offered and samples taken as required.

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

Received

Office of Oil and Gar WV Dept. of Environme

For delivery information BOHONT WV 250	ition vis	it our website	at www.usps.com ₃
Postage	\$	\$0.49	0701
Certified Fee		\$3.30	29
Return Receipt Fee (Endorsement Required)		\$2.70	Postmark Here
Restricted Delivery Fee Endorsement Required)		\$0.00	3 3
Total Postage & Fees	\$	\$6.49	03/13/2014
Sent Ta		1	7.14

Received

APR 1 8 2014

Office of Oil and Gas WV Dept. of Environmental Factoria WW-9 (5/13)

	Page	of	
API Number 47 -015	-02898		
Operator's Well N	O. J.S. COCHE	EAN 7H	

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) 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 Will a pit be used for drill cuttings? Yes X 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 X No If so, what ml.? 30 MIL. Proposed Disposal Method For Treated Pit Wastes: Land Application Underground Injection (UIC Permit Number 2D0392210 - IF NEEDED Reuse (at API Number Off Site Disposal (Supply form WW-9 for disposal location) Other (Explain Cutton of the proposed well work? Yes No
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/ HAUL IF NEEDED RECEIVED
-If left in pit and plan to solidify what medium will be used? (coment, lime, sawdust) CEMENT of Oil and Gas
-Landfill or offsite name/permit number? CITY OF CHARLESTON LANDFILL MAY 2 2 2014
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 4 day of MAY , 20 14
My commission expires 05/12/2014 Notary Public State of West Vacinus DANIELLE N. BAYS

Form WW-9

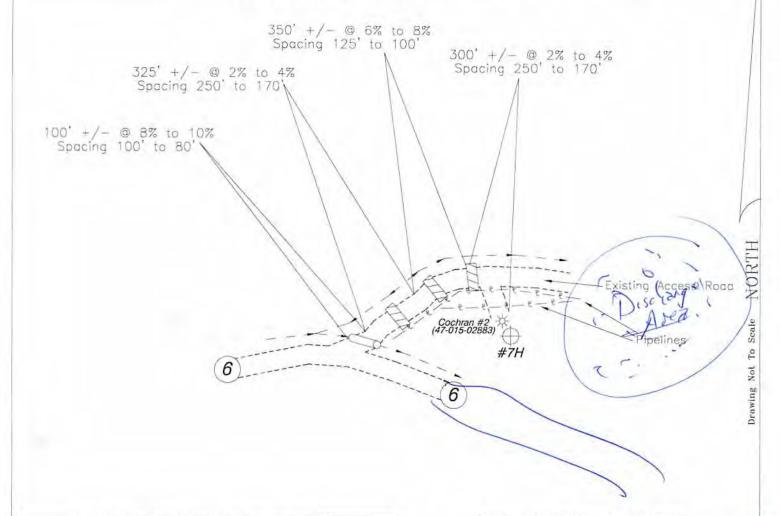
Field Reviewed?

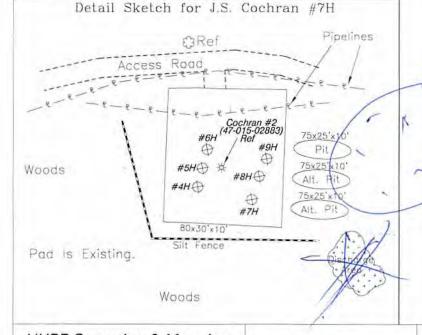
Proposed Revegetation Treatme	ent: Acres Disturbed	2.8 Preven	getation pH	
Lime 3	Tons/acre or to correct	0.5	Semion b.1	
	equivalent) 1/3 TON			
LIAV	equivalent)	_lbs/acre (500 lbs minimum)		
Mulch HAY - A	ТТ	ons/acre		
		Seed Mixtures		
Area			Area II	
Seed Type	lbs/acre	Seed Ty		lbs/acre
KY 31	40	ORCHID GRA	SS	15
ALSIKE CLOVER	5	ALSIKE CLOV	'ER	5
ANNUAL RYE	15			
Attach:				
Attach: Drawing(s) of road, location,pit Photocopied section of involved		I application.		
Drawing(s) of road, location,pit		d application.		
Drawing(s) of road, location,pit Photocopied section of involved Plan Approved by:		1 application.	Y	
Drawing(s) of road, location,pit Photocopied section of involved Plan Approved by: Comments:		3	n pla	ce et
Drawing(s) of road, location,pit Photocopied section of involved Plan Approved by: Comments:	17.5' topographic sheet.		n pla	ce et
Drawing(s) of road, location,pit Photocopied section of involved Plan Approved by: Comments:	Sediment			RECEIVED
Drawing(s) of road, location,pit Photocopied section of involved Plan Approved by: Comments:	Sediment			RECEIVED

Form W-9

CUNNINGHAM ENERGY, LLC. J.S. COCHRAN #7H

Page 1 of 1





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

Office of Oil and Gas

NLL ROADS SHOWN HENCON ARE EXISTING UNLESS DIHERVISE NOTED AND SHALL BE MADUTANED IN ACCORDANCE WITH DEP DIL AND GAS BMP MANUAL ENTRANCES AS COUNTY-STATE ROADS SHALL AN ENTRANCE AS COUNTY-STATE ROADS SHALL AN ENTRANCE PROPERTY OF THE MODIFICATION OF THE MODIFICATION

SEMENT BASINS, TRAPS AND APPROLETA TREATMENT THE PROPERTY OF CONSTRUCTED AT ALL CULVERT AND EAST OF CONSTRUCTED AT ALL CULVERT AND EAST OF CONSTRUCTIONS (ROCK DUTCHERS AND BEDROCK) MAY PROMISE! INLE! TRAPS SEING INSTALLED, WHEN THESE CONSITIONS EXIST, ADDITIONAL E

Install Minimum WAY COLD 2014

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

CONTRACTORS/COMPANY ARE RESPONSIBLE FOR LOCATING UTILITIES WHETHER SHOWN ON THIS FLAN OR NO!

TEMPORARILY SEED AND MULCH ALL SLOPES AFTER CONSTRUCTION OF LOCATION.

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

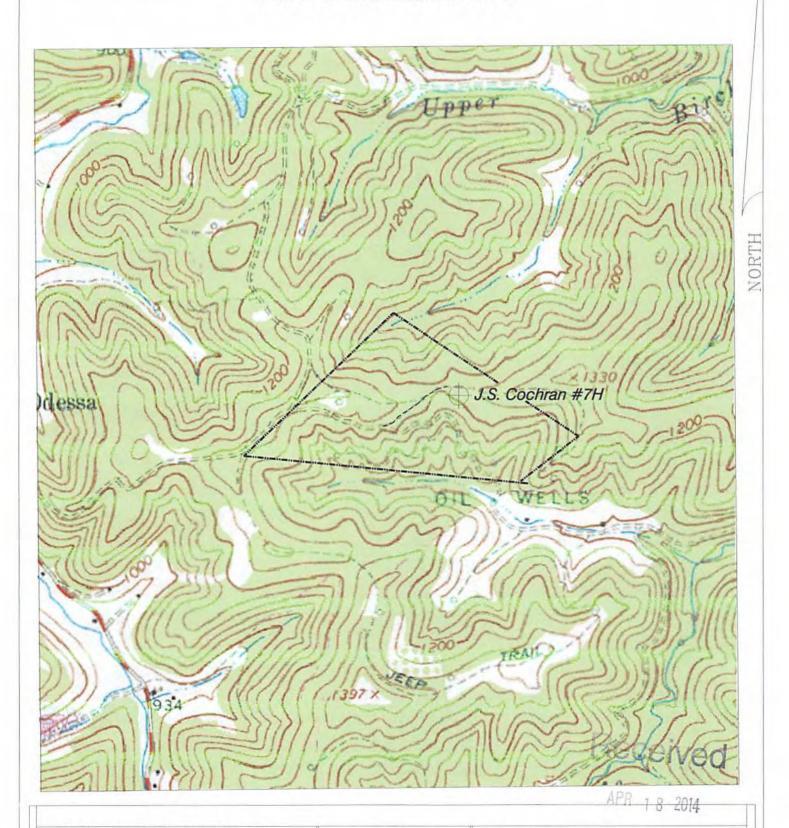
STACK BRUSH BELOW LOCATION FOR SEDIMENT CONTROL.

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	02/12/14	w20103/01/2014

Form W-9

CUNNINGHAM ENERGY J.S. Cochran #7H

Page 1 of 1



HUPP Surveying & Mapping

P.O. BOX 647 GRANTSVILLE, WV 26147 PH:(304)354-7035 E-MAIL: hupp@frontiernet.net 1" = 1000' Elkhurst Quad Cunninghamontano of and Gas 3230 Penns of Environmental Potection Charleston, WV 25302

08/01/2014

