



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

Jim Justice , Governor
Austin Caperton , Cabinet Secretary
www.dep.wv.gov

Thursday, May 11, 2017
WELL WORK PERMIT
Vertical / Plugging

ENERGY CORPORATION OF AMERICA (A)
500 CORPORATE LANDING

CHARLESTON, WV 25311

Re: Permit approval for 624771
47-015-02644-00-00

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: 624771
Farm Name: CUTLIP, WOODROW
U.S. WELL NUMBER: 47-015-02644-00-00
Vertical / Plugging

Date Issued:

Promoting a healthy environment.

05/12/2017

1502644P

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. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. 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.
3. Well work activities shall not constitute a hazard to the safety of persons.
4. Before well work may start on the plugging of this well, the inspector must be notified forty-eight hours in advance of well work and a "PRE-SPUD" meeting must be held with the rig personnel, operator personnel and the Office of Oil and Gas inspector.

05/12/2017

15 02644P

WW-4B
Rev. 2/01

1) Date 3/14, 2017
2) Operator's
Well No. Dink #1
3) API Well No. 47-015 - 02644

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil ___ / Gas x / Liquid injection ___ / Waste disposal ___ /
(If "Gas, Production x or Underground storage ___) Deep x / Shallow ___

5) Location: Elevation 402.23 Watershed Moore Fork of Otter Creek
District Otter County Clay Quadrangle Strange Creek

6) Well Operator Energy Corporation of America 7) Designated Agent Donald C. Supcoe, III
Address 500 Corporate Landing Address 500 Corporate Landing
Charleston, WV 25311 Charleston, WV 25311

8) Oil and Gas Inspector to be notified Name Jeremy James
Address P.O. Box 36
Clendenin, WV 25045
9) Plugging Contractor Name Basic Energy Services
Address 30 West High St.
Waynesburg, PA 15370

10) Work Order: The work order for the manner of plugging this well is as follows:
See Attached Procedure

Before well work may start on the plugging of this well, the inspector must be notified forty-eight hours in advance of well work and a " PRE-SPUD " meeting must be held with the rig personnel, operator personnel and the Office of Oil and Gas inspector.

gmm 5/11/2017

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Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector  Date 3-31-17

05/12/2017



Energy Corporation of America

Well Preparation and Plugging Procedure

Well Name: Dink #1
API Number: 47-015-02644
County/State: Clay County, WV
Service Date: 2017
Inspector: Jeremy James 304-951-2596 Jeremy.E.James@wv.gov
GPS Coordinates: Northing: 4270727.6417, Easting: 500274.0131
Elevation: 1309'
KB: 20'

Section	Size	Weight/Grade	Depth	Capacity bbl/ft	Hole Size	TOC	CMNT
Conductor	20"		233'			CTS	
Surface	13.375"	61# J-55 ST&C	2,143'	.1521	17.5"	CTS	1550 sxs Class A
Intermediate	9.625"	168 jts 43.5# M95/P110 LT&C	6,958'	.0744	12.25"	6,107'	302 sxs Class A
Production	7"	250 jts 26# M95/P110	10,599'	.0383	8.5"	6,350'	530 sxs Class H
Open Hole	6.125"	N/A	12,263'	.0379	6.125"	N/A	N/A
Tubing	2.875"	6.5# J-55 EUE	7,715'	.0058	N/A	N/A	N/A
Production Tubing	1-1/2" AKA 1.9"	2.75# L-80 IG 10RD ID-1.610, OD-2.110	7,770'	.0025	N/A	N/A	N/A

ADDITIONAL WELLBORE INFO:

2 7/8" Tubing landed with a "Weatherford Arrowset II" packer.

Volumes:

Volume between 1-1/2" and 2-7/8" tubing: 0.0031bbl/ft
 Volume between 2-7/8" tubing and 7" casing: 0.0302-BBL/FT
 1 1/2" displacement: 0.0018bbl/ft
 12.25" Open Hole volume: 0.1458 BBL/FT
 7" displacement: 0.934bbl/100'

Current Status:

Well SI
 1,000+ ppm H₂S

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Procedure:

*All depths in this procedure measure from a KB height of 20 ft above ground level.

Site Preparation

Remove surface equipment and prepare site and road for rig and ancillary equipment.

MIRU

Move to site, rig up service rig, pump, H₂S services, and tubing; prep kill fluid.

Kill Well

Kill well by pumping down tubing. Fill 2-7/8" X 7" annulus with kill fluid.

Remove 1-1/2" Tubing

Remove upper portion of wellhead, attach master valve and stripping head. Unseat 1-1/2" tubing hanger and pull 1 1/2" tubing. Add kill fluid while pulling to ensure well stays static. Once tubing is removed, close lower master valve and RD the 1 1/2" tubing head.

Remove 2-7/8" Tubing

Install check valve into top of 2 7/8" hanger. Remove master valve. Install Pipe/Blind rams, and stripping head. Unseat and pull hanger. Remove check valve. Continue pulling to open bypass on packer. Continue pulling to unseat hanger. Pull all 2 7/8" tubing from well. Refill hole as necessary.

CBL, Pick up Pipe String

MIRU Wireline. Confirm location of perforations and run cement bond log on 7" casing (8,608'). Set CIBP above existing cement plug if possible. Pick up cementing string and TIH to TOC.

Cement + Gel

Pump minimum 100' cement plug using approximately 4.14bbbls of Latex CMNT from previous TOC or CIBP to approximately 8,500'. Pump gel from TOC (8,500') to 7,860' using 24.5 bbls gel. Pump 260' Latex CMNT plug across Newburg perforations estimated to be from 7,860' (50' below lowest perforation) to 7,600' using approximately 10 bbls of Latex CMNT.

Tag Plug, Cut 7" Casing

Wait on cement (WOC). Tag CMNT plug. Cut and separate 7" casing not more than 50 ft above TOC determined by bond log (preliminary estimate 6,350'). Circulate kill fluid to surface down 7" casing. Pull and lay down 7" casing (approximately 6,350') fill up 9 5/8" as necessary.

Gel & Cement

Pump gel from TOC (7,600') to 6,550' using approximately 40.2 bbls gel. CMNT from top of Onondaga to 50' above casing cut using approximately 11.4bbbls of Latex CMNT from 6,550' to ~6,300' (250').

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Run CBL to determine TOC

Run cement bond log from TOC (6,300 ft) to surface to determine TOC; Estimated from original CBL to be 6,107'.

Tag Plug, Cut 9" Casing

Tag CMNT plug. Cut 9" casing at TOC. Pull 150% of string weight to free casing. Remove and lay down casing. Fill hole as necessary to maintain a static wellbore.

* **Cement**

PU pipe string and TIH. Tag pervious CMNT plug.

Pump 450' CMNT plug from top of previous plug to 200' above 9" casing cut using approximately 31 bbls of Latex CMNT. (WOC)

GMM
5/11/17

Pump Gel and Cement

Tag CMNT Plug. Fill with Gel from 5900' (top of previous cement plug) to 4,950'

Pump 100' CMNT plug from 4,950 to 4,850' with 14.6 bbls Class A CMNT.

Pump Gel from 4,850' to 2,200' (386.4 bbl).

Pump 100' CMNT plug across 13" shoe. 2,200' to 2,100' with 14.9 bbl Class A CMNT. (WOC)

Pump Gel and Cement

Tag plug at 13" shoe.

Pump Gel from 2,100' to 1,350' (114 bbl)

Pump 150' CMNT plug (elevation plug) from 1,350' to 1,200' with 22.8 bbl Class A CMNT.

Pump Gel from 1,200' to 860' (51.7 bbl)

Pump 100' CMNT plug across coal zone from 860' to 760' with 15.2 bbl Class A CMNT.

Pump Gel from 760' to 100' (100.4 bbl)

Pump 100' surface CMNT plug from 100' to GL with 15.2 bbl Class A CMNT.

Install Monument

Install monument. Reclaim Site.

* MINIMUM OF 200' CEMENT PLUG ABOVE 9 5/8" CASING CUT.

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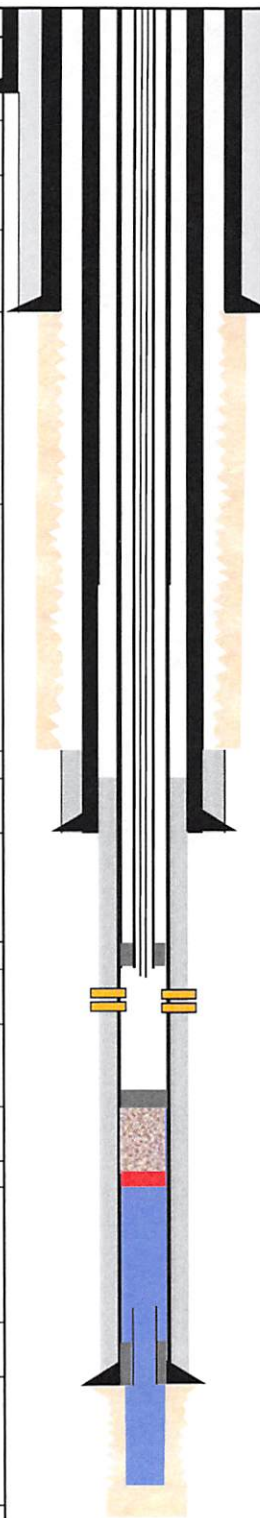


Energy Corporation of America

Dink #1

Casing and Cementing Details (Current)

Casing Size	Hole Size	Detailed Description
20" Conductor Casing	UNK	375' (CTS)
Coal	Coal	813'-816' Coal Zone
Brine Water	H2O	1,151' Brine water zone
Brine Water	H2O	1,667' Brine water zone
13 3/8" Surface Casing	17 1/2"	2,143', 48jts 61# J-55 ST&C, 1,550 sxs Class A CMNT (CTS)
Gas Zone	Gas	4,960' Gas zone
TOC (9 5/8")	TOC	TOC 6,107'
TOC (7")	TOC	TOC 6,350'
9 5/8" Intermediate Casing	12 1/4"	6,958', 168jts 43.5# P-110 LT&C, 302 sxs (64bbl) Class A CMNT
2 7/8" Production Tubing & Packer	2 7/8"	7,715', 2 7/8" J-55 6.5# EUE & Arrowset II packer
1 1/2" Velocity String	1 1/2"	7,770', 1 1/2" L-80 2.75# 10RD IJ
Perforations	Perfs.	9 holes 7,770'-7,778' & 5 holes 7,800'-7,804'
50' Cement Plug	Plug	2bbl (50') CMNT Plug, Type 1 TOC 8,608'
Sand Plug	Plug	Sand Plug to 8,658'
Wire Line Retrievable Bridge Plug	Plug	WLRBP 8,742'
Production Packer	Packer	Hole filled with Kill Weight Brine 10,540' Baker Production Packer, 2-3jts 2 7/8" Tubing
7" Production Casing	8 5/8"	10,599', 250jts 7" 26# P110 LT&C, 302 sxs (230bbl) Class H CMNT
6 1/8" Open Hole	6 1/8"	Hole filled with Kill Weight Brine 12,263' 6 1/8" Open Hole



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Energy Corporation of America
Dink #1
Casing and Cementing Details (Plugged)

Casing Size	Hole Size	Detailed Description
Plug	Plug	100' surface CMNT plug
20" Conductor Casing		375' (CTS)
Coal / Plug	Coal	813'-816' Coal Zone, 100' plug (860'-760')
Brine Water	H2O	1,151' Brine water zone
Plug	Plug	100' CMNT Plug 1350'-1,200'
Brine Water	H2O	1,667' Brine water zone
13 3/8" Surface Casing	17 1/2"	2,143', 61# J-55 1,550 sxs Class A CMNT (CTS)
Plug	Plug	100' CMNT Plug 2,200' to 2,100'
Plug	Plug	100' CMNT Plug 4,950' to 4,850'
Gas Zone	Gas Zone	4,960'
Plug	Plug	Latex CMNT plug from 6,550' to 5900'
TOC (9 5/8")	CUT	TOC 6,107'
TOC (7")	CUT	TOC 6,350'
9 5/8" Intermediate Casing Begin Deviated hole	12 1/4"	6,958', 43.5# P-110, 302 sxs (64bbl) Class A CMNT
Plug	Plug	Latex CMNT Plug from 7,860' to 7,600'
Perforations	Perfs.	9 holes 7,770'-7,778' & 5 holes 7,800'-7,804'
Plugs	Plug	CIBP + Latex CMNT Plug from 8,608' to 8,500'
50' Cement Plug	Plug	2bbl (50') CMNT Plug TOC 8,608'
Sand Plug	Plug	Sand Plug to 8,658'
Wire Line Retrievable Bridge Plug	Plug	WLRBP 8,742'
Production Packer	Packer	Hole filled with Kill Weight Brine 10,540' Baker Production Packer, 2-3/8" 2 7/8" Tubing
7" Production Casing	8 5/8"	10,599', 7" 26# P110, 302 sxs (230bbl) Class H CMNT
6 1/8" Open Hole	6 1/8"	Hole filled with Kill Weight Brine 12,263' 6 1/8" Unstimulated Open Hole

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Dink#1 Well Plugging Job – Safety Plan Overview

Purpose

The purpose of this plan is to provide general safety and emergency response guidelines to ECA employees, contractors, and emergency responders at the Dink Well plugging operation.

Scope

The rules and guidelines listed in this program apply to all employees, vendors, contractors, and visitors on site. This program is not intended to replace or supersede the safety policies and/or programs of contractors or vendors.

General Site Information

The Energy Corporation of America – Dink #1 Well – is a natural gas well that is known to contain hydrogen sulfide (H₂S) gas in concentrations of up to 1,000 ppm. The hazards and safety procedures associated with H₂S must be communicated to all personnel on-site.

Hydrogen Sulfide Hazards

The following chart shows the hazards associated with H₂S at various concentrations.

Concentration (ppm)	Symptoms/Effects
0.01-1.5	Odor Threshold. Odor becomes more offensive at 3-5 ppm.
2-5	Prolonged exposure may cause nausea, tearing of the eyes, headaches, and loss of sleep. Breathing problems occur in some asthma patients
20 (OSHA PEL)*	Fatigue, Loss of appetite, headache, irritability, dizziness.
50 – 100	Severe eye and respiratory irritation after 1 hour.
100 (IDLH)**	Loss of smell after 2-15 minutes. Altered breathing, drowsiness after 15 minutes. Death may occur after 48 hours.
500-700	Staggering, collapse in 5 minutes. Serious damage to the eyes in 30 minutes. Death in 30-60 minutes
1000	Nearly instant death

*OSHA PEL – Permissible Exposure Limit set by OSHA

**IDLH – Immediately Dangerous to Life and Health

Pre-Job Safety Meetings

ECA will oversee daily job safety meetings. These meetings will discuss H₂S hazards anticipated each day, appropriate muster points, and other hazards associated with the work.

Gas Monitoring

Stationary H₂S monitors will be installed throughout the site, and at the main muster point, throughout the duration of work. These alarms will be set to sound at 20ppm/H₂S. If levels are above or anticipated to be above 20 ppm then SCBA respirators will be utilized to protect employees and contractors. Personal gas detectors will be used by all personnel on site. These gas detectors must, at a minimum, measure H₂S, LEL, and O₂.

Muster Points

Multiple muster points will be set-up around the perimeter of the well pad. In the event of an emergency, employees will evacuate the well pad to the best available muster point. Wind-socks will be in place, and must be used to determine the best available muster point during a given emergency.

Personal Protective Equipment

This job will require the use of Flame Resistant Clothing (FRC), safety glasses, hard-toe boots, hard-hats, and gloves. Other PPE may be necessary and will be utilized if deemed necessary by the ECA Safety Coordinator. See ECA employee safety manual for a complete list of rules regarding PPE.

ECA CRISIS COMMUNICATIONS PLAN - Dink Well Plugging Job

	VP of Production	District Manager	Safety and Environmental Team Leader	Project Manager	Field Operations and Permitting Manager	Corporate Affairs Manager
SAFETY ISSUES						
Injury resulting in employee or contractor death or emergency transport to hospital	1	1	1	1	3	1
OSHA recordable event	3	1	1	1	3	3
ENVIRONMENTAL ISSUES						
Spill or chemical release that requires emergency response and/or could result in media inquiries	1	1	1	1	1	1
Agency inspection	3	3	1	1	1	-
Receipt of NOV	3	2	3	1	1	-
Citizen complaint	2	2	2	2	1	1

OPERATIONAL ISSUES

H2S levels above 20 ppm encountered (OSHA Ceiling PEL limit)	3	3	1	1	3	-
H2S Levels above 50 ppm encountered (OSHA Peak Limit - up to 10 minutes if no other exposure during shift)	3	3	1	1	3	-
H2S Levels above 100 ppm (NIOSH IDLH Level)	1	3	1	1	3	-

MEDIA INQUIRIES

All (notifications will be made by Ext Affairs to internal contacts as applicable based on subject matter) 3 3 - - - 1

Key Contacts

Name	Work	Cell	Email: @nrgenergy.com
Ryan Deaderick	304-925-6100	304-380-1292	rdeaderick@eca.com
Joe Farris	304-925-6100	304-552-1518	jfarris@eca.com
Wes Daubenspeck	304-925-6100	304-550-6219	wdaubenspeck@eca.com
Josh Goddard	304-925-6100	724-231-9695	jgoddard@eca.com
Don Suppoe III	304-925-6100	304-767-5178	dcsuppoe@eca.com
Jennifer Vieweg	304-925-6100	304-400-7304	jvieweg@eca.com

KEY
 1 - Immediately via telephone call by PM or designee
 2 - Next Day via telephone call by PM or designee
 3 - Normal email notice process

Dink Cutlipp #624771 WR35

STAGE ONE: Newburg Sand
9 holes (7770-7778), 5 holes (7800-7804)
❖ 40,000# 20/40 sand and 943-bbl 30# x-link gel

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Dink Cutlipp #624771 WR35

FORMATION, COLOR, HARD OR SOFT	TOP FEET	BOTTOM FEET	<u>REMARKS</u>
			Including indication of all fresh & salt water coal, oil & gas
Shale	4960	6400	Gas Show@4961' = 2/10 thru 2" w/H2O
Marcellus	6400	6516	
Onondaga	6516	6711	
Oriskany	6711	7068	
Salina Dolomite	7068	7766	
Newburg Sand	7766	8160	
Rose Hill	8160	8624	
Tuscarora Sand	8624	8770	
Queenston	8770	9444	
Martinsburg Shale	9444	10,826	
Trenton	10,826	10,974	
Black River Lime	10,974	11,476	
Van Wert	11,476	12,263	

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WR-35

DEEP

DATE: February 11, 2004

API: 47-015-02644

AP

State of West Virginia
 Division of Environmental Protection
 Section of Oil and Gas
 Well Operator's Report of Well Work

Farm name: Cutlip, Woodrow
 Location Elevation: 1309'
 District: Otter

Operator Well No: 624771
 Quadrangle: Strange Creek
 County: Clay

COLUMBIA NATURAL RESOURCES	Casing & Tubing	Used in drilling	Left in Well	Cement fill up Cu.Ft.
Address: P.O. Box 6070	30"	21'	21'	9 Yards ready-mix
Charleston, WV 25362	20"	375'	375'	854
Agent: Mike John	13 3/8"	2143'	2143'	1929
Inspector: Rich Campbell	9 5/8"	6960'	6960'	356
Date Permit Issued: 01/23/2002	7"	10,599	10,599	1265
Date Well work commenced: 01/23/2002	2 7/8"		10,532	2 7/8" x 7" Baker Reliant Packer Set at 10,532 ft
Date Well Work completed: 7/15/2002 **				
Verbal Plugging: *Plugged back orig. hole on 5/15/02				
Date Permission granted on:				
Rotary X Cable Rig				
Total Depth (feet): 11,851 original hole* 12,263 ft side track hole				
Fresh Water Depth (ft):				
Salt Water Depth (ft.): 1151, 1667				
Is coal being mined in area (No)				
Coal Depths (ft): 813-816				
*Original hole plugged back from 11,712 ft to 10,260 ft with 325 sacks Class H cement. KOP of side track was 10,615 ft.				

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**Operations of well was turned over to EAE Corporation for further uphole stimulations. Columbia Natural Resources will be submitting paperwork to transfer this well to EAE's operating bond.

Original Hole **OPEN FLOW DATA**

Producing formation: Trenton/Black River Pay zone depth (ft) from 10,599 to 11,851
 Gas: Initial open flow MCF/d Oil: Initial open flow Bbl/d
 Final open flow Show TSTM MCF/d Final open flow Bbl/d
 Time of open flow between initial and final tests Hours
 Static rock Pressure N/A psig (surface pressure) after N/A Hours

Side Track Hole

2nd producing formation: Trenton/Black River Pay zone depth (ft) from 10,599 to 12,263
 Gas: Initial open flow MCF/d Oil: Initial open flow Bbl/d
 Final open flow 15,000 MCF/d NATURAL Final open flow Bbl/d
 Time of open flow between initial and final tests 4 Hours
 Static rock Pressure 4450 psig (surface pressure) after 120 Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

WELL OPERATOR: COLUMBIA NATURAL RESOURCES, INC.

05/12/2017

By: *[Signature]* Date: 2-12-04

Strange Creek 1

**Columbia Natural Resources
Morris 824771
Otter District, Clay County, WV
47-015-02644
Original Hole**

Formation	Top (MD)	Base (MD)	Top (TVD)	Base (TVD)
Siltstone & shale	0	1584		
Salt Sand	1584	1666		
Siltstone & shale	1666	1858		
Maxon Sand	1858	1942		
Little Lime	1942	1976		
Pencil Cave	1976	2024		
Big Lime	2024	2118		
Injun Sand	2118	2158		
Pocono Shale	2158	2574		
Coffee Shale	2574	2596		
Berea Siltstone	2596	2599		
Devonian Shale	2599	3486		
Lower Huron	3486	5420		
Rhinestreet Shale	5420	6482		
Marcellus Shale	6482	6522		
Onondaga Lime	6522	6707		
Oriskany Sand	6707	6740		
Helderberg Lime	6740	7148		
Salina Dolomite & Shale	7148	7762		
Newburg Sand	7762	7778	7752	7767
McKenzie Limestone	7778	8130	7767	8116
Keefer Sandstone	8130	8158	8116	8144
Rose Hill Shale	8158	8650	8144	8632
Tuscarora Sandstone	8650	8778	8632	8756
Juniata Shale	8778	9428	8756	9376
Martinsburg Shale	9428	10856	9376	10724
Trenton Limestone	10856	11000	10724	10873
Black River Limestone	11000	11880 LTD	10873	11730 LTD

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**Columbia Natural Resources
Morris 824771-A
Otter District, Clay County, WV
47-015-02644
Kick Hole**

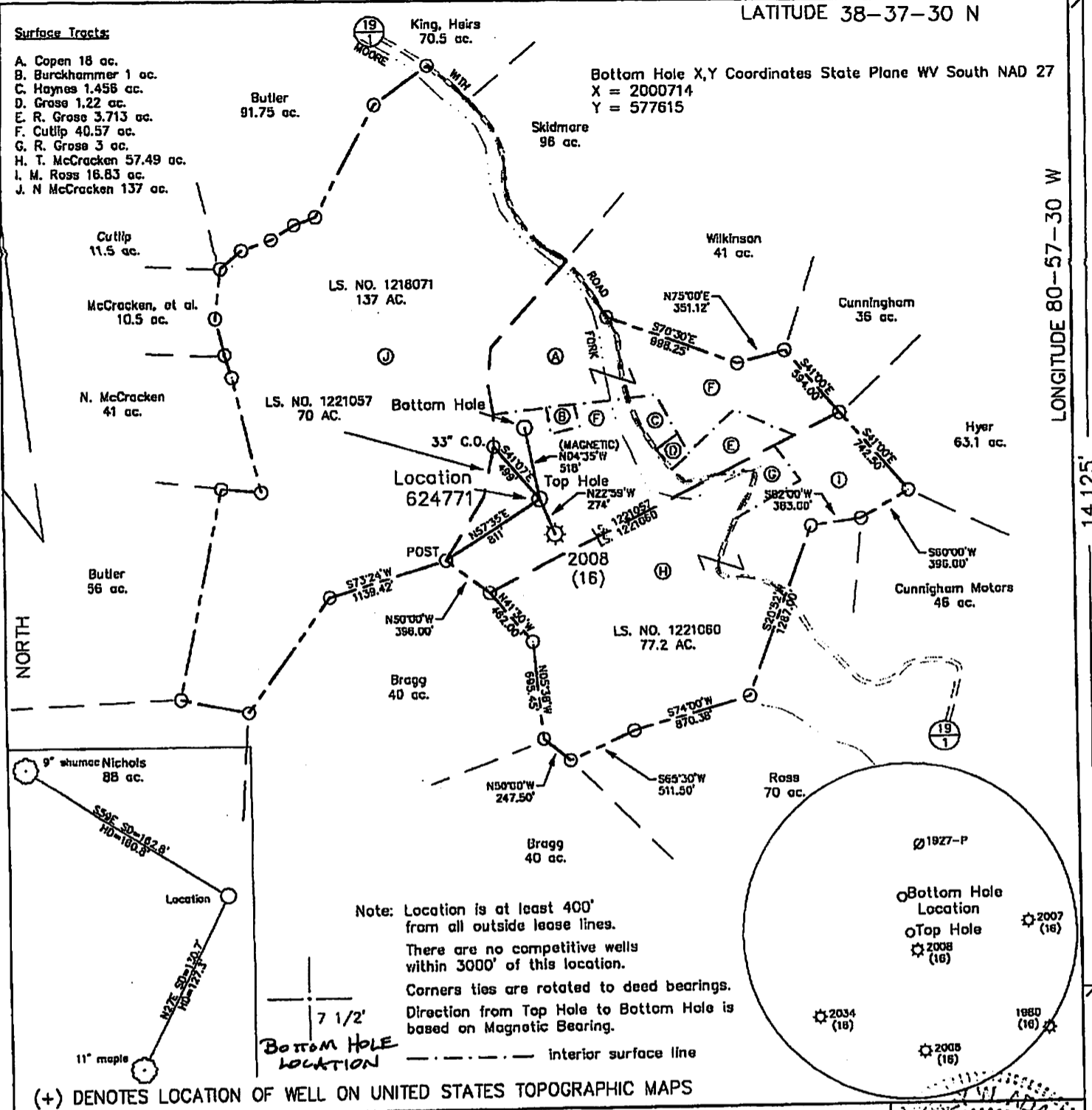
Formation	Top (MD)	Base (MD)	Top (TVD)	Base (TVD)
Martinsburg Shale		10874		10696
Trenton Limestone	10874	11052	10696	10830
Black River Limestone	11052	12014	10830	11626
Wells Creek Ls & Dolo	12014	12250 LTD	11626	11792 LTD

05/12/2017

Surface Tracts:

- A. Copen 18 ac.
- B. Burckhammer 1 ac.
- C. Haynes 1.456 ac.
- D. Grase 1.22 ac.
- E. R. Grase 3.713 ac.
- F. Cutlip 40.57 ac.
- G. R. Grase 3 ac.
- H. T. McCracken 57.49 ac.
- I. M. Ross 16.83 ac.
- J. N. McCracken 137 ac.

Bottom Hole X,Y Coordinates State Plane WV South NAD 27
 X = 2000714
 Y = 577615

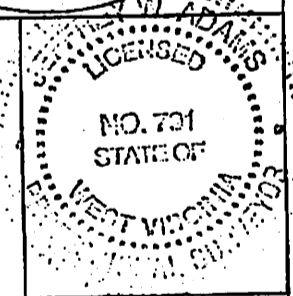


(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. _____
 DRAWING NO. 1
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1 in 200
 PROVEN SOURCE OF ELEVATION Top of Knob 1600'
West of location El. 1564'

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENERGY

(SIGNED) [Signature]
 R.P.E. L.L.S. 791



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

DATE January 17 2002
 OPERATOR'S WELL NO. 624771
 API WELL NO. _____

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

LOCATION: ELEVATION 1309 WATER SHED Moore Run
 DISTRICT Otter COUNTY Clay
 QUADRANGLE Strange Creek

SURFACE OWNER Woodrow W. Cutlip, et ux. ACREAGE 41.61
 OIL & GAS ROYALTY OWNER Rev. Charles A. Rogers, POA for Elizabeth Morris LEASE ACREAGE 70 05/12/2017
 LEASE NO. 1221057

PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION Basement ESTIMATED DEPTH 15,000'
 WELL OPERATOR Columbia Natural Resources, Inc. DESIGNATED AGENT Thomas Blake
 ADDRESS P.O. Box 6070, Charleston, WV 25362 ADDRESS P.O. Box 6070, Charleston, WV 25362

Strange Creek 1

1502644P

WW-4A
Revised 6-07

1) Date: 3/14/2017
2) Operator's Well Number _____
Dink #1 _____
3) API Well No.: 47 - 015 - 02644

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

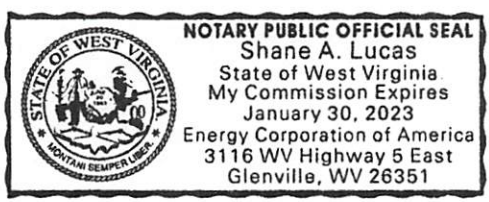
4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Lula Cutlip</u>	Name _____
Address <u>115 Cut Run</u>	Address _____
<u>Duck, WV 25063</u>	
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>Corlis Harris</u> <u>W.A. O'Dell</u>
	Address <u>P.O. Box 685</u> <u>1104 Arthur Ave.</u>
	<u>Spencer, WV 25276</u> <u>Scottsdale, PA 15683</u>
(c) Name _____	Name <u>Blaze Minerals, LLC</u>
Address _____	Address <u>520 Folly Rd. STE P285</u>
	<u>Charleston, SC 29412</u>
6) Inspector <u>Jeremy James</u>	(c) Coal Lessee with Declaration
Address <u>P.O. Box 36</u>	Name _____
<u>Clendenin, WV 25045</u>	Address _____
Telephone <u>304-951-2596</u>	

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

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.



Well Operator Energy Corporation of America
 By: Donald C. Supcoe, III
 Its: Director of Land Operations and Permitting
 Address 500 Corporate Landing
Charleston, WV 25311
 Telephone 304-406-4247

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Office of Oil and Gas

APR 05 2017

Subscribed and sworn before me this 17TH day of MARCH 2017 WV Department of
 Shane A. Lucas _____ Notary Public Environmental Protection

My Commission Expires January 30, 2023

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.

05/12/2017

1502644P

WW-9
(5/16)

API Number 47 - 015 - 02644
Operator's Well No. Dink #1

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Energy Corporation of America OP Code 306345

Watershed (HUC 10) Moore Fork of Otter Creek Quadrangle Strange Creek

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.? NO PIT

Proposed Disposal Method For Treated Pit Wastes:

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

Will closed loop system be used? If so, describe: Yes, return tanks to tanks

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Freshwater

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

Additives to be used in drilling medium? _____

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Removed offsite

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

-Landfill or offsite name/permit number? Will be removed offsite to a WVDEP approved facility.

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) Donald C. Supcoe, III

Company Official Title Director of Land Operations and Permitting

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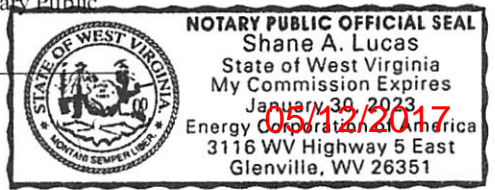
APR 05 2017

Subscribed and sworn before me this 17TH day of MARCH, 20 17

Shane A. Lucas Notary Public

My commission expires JANUARY 30, 2023

WV Department of
Environmental Protection



Proposed Revegetation Treatment: Acres Disturbed 1.5 to 2.0 Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch Hay Bales Tons/acre


Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Orchard Grass	12	Orchard Grass	12
Landino Clover	3	Landino Clover	3
Timothy	10	Timothy	10

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: remove all equipment reclaim as prescribed

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Title: inspector OOG

Date: 3-31-17

Field Reviewed? () Yes () No

WV Department of
Environmental Protection

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

Operator Name: Energy Corporation of America
Watershed (HUC 10): Moore Fork of Otter Creek Quad: Strange Creek
Farm Name: Dink

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

NA- Not Discharging Fluids

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

"Closed Loop System" All returns will be taken to tanks and hauled to a WVDEP approved facility. No cuttings or fluids will be discharged on site.

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

NA- Not discharging fluids.

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

NA

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APR 05 2017

WV Department of
Environmental Protection

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

NA

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

ECA will not use waste material for deicing or fill material on the property. All material will be disposed of at an approved facility.

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.

NA- See Section 2

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

Daily inspections of equipment will be conducted.

Signature: 

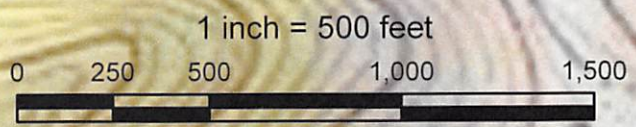
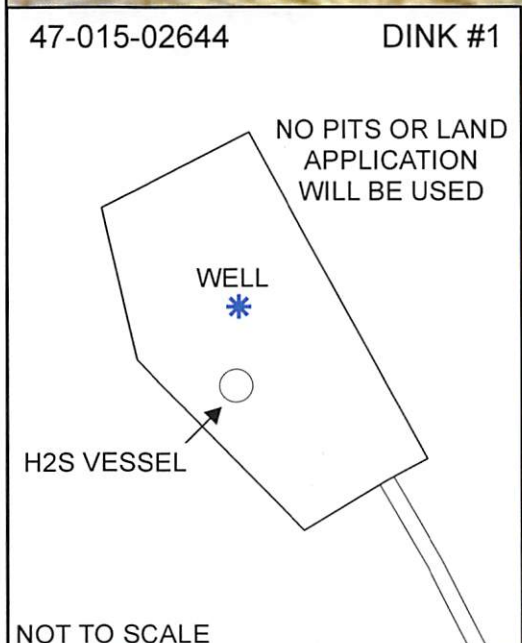
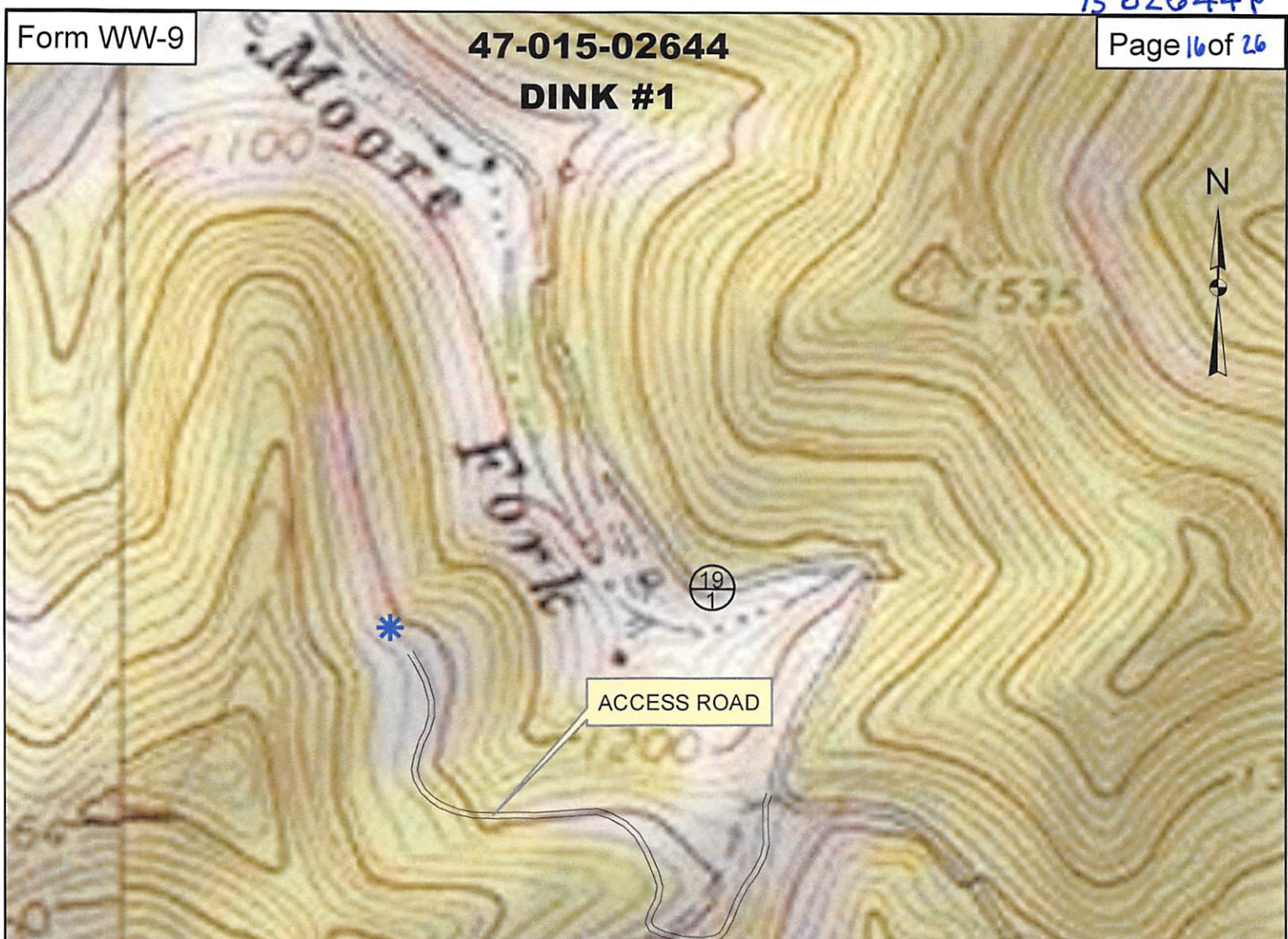
Date: 3/17/17

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DINK #1



ALL ROADS SHOWN HEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH WV D.E.P. OIL AND GAS BMP MANUAL ENTRANCES AT COUNTY/STATE ROADS SHALL BE MAINTAINED WITH WV D.O.T. REGULATION. SEPARATE PERMITS MAY BE REQUIRED BY D.O.T.

EARTHWORK CONTRACTORS ARE RESPONSIBLE FOR NOTIFICATION TO THE OPERATOR AND INSPECTOR PRIOR TO ANY CEVIATION FROM THIS PLAN.



Energy Corporation of America
500 Corporate Landing Charleston, WV 25311
304-925-6100 - www.eca.com

Date: 03/16/17

TOPO SECTION OF USGS
STRANGE CREEK 7.5' QUADRANGLE

05/12/2017

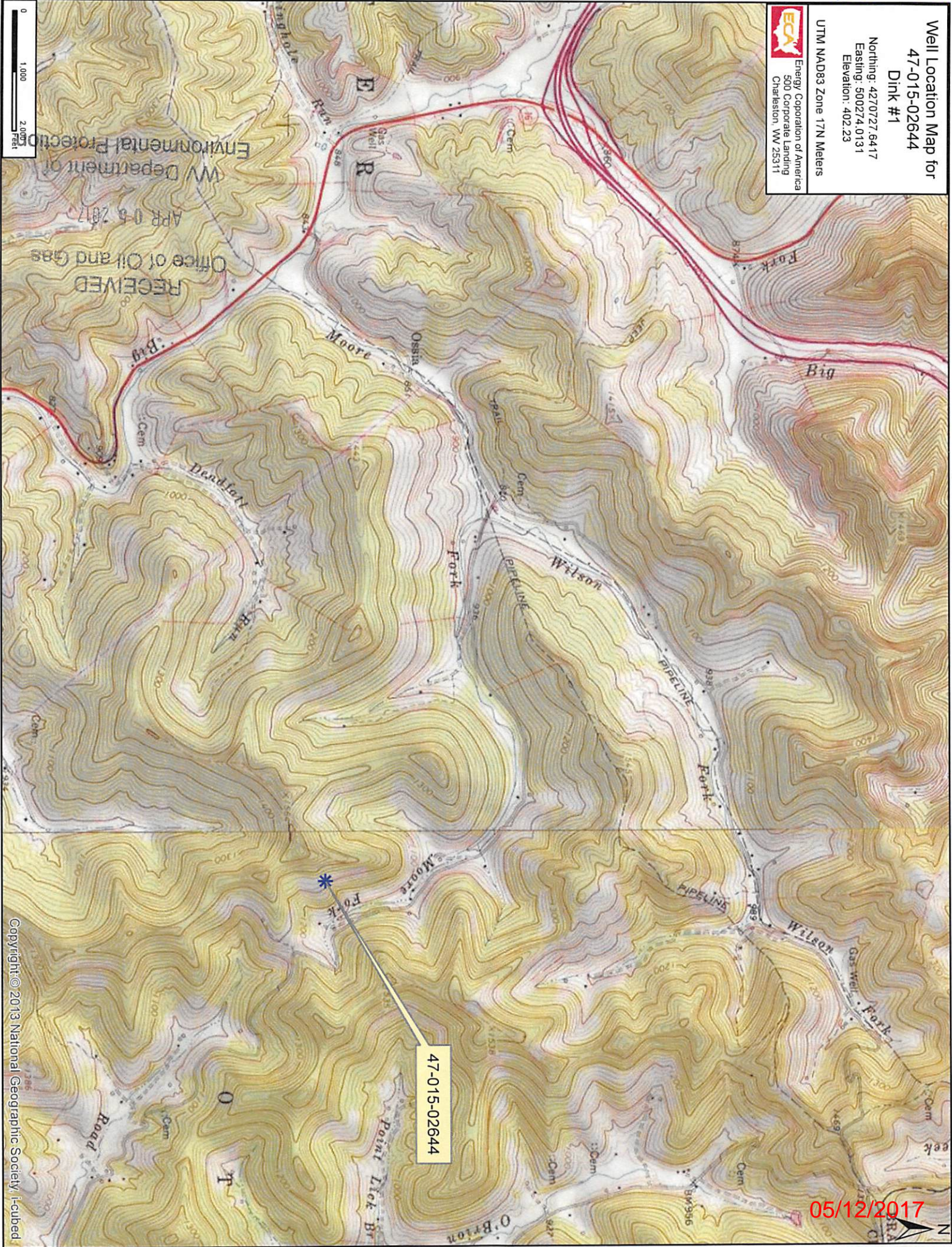
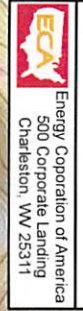
150264AP

Well Location Map for
47-015-02644

Dink #1

Northing: 4270727.6417
Easting: 500274.0131
Elevation: 402.23

UTM NAD83 Zone 17N Meters



47-015-02644

05/12/2017

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WV Department of
Environmental Protection

1502644A

WW-7
8-30-06



West Virginia Department of Environmental Protection
Office of Oil and Gas

WELL LOCATION FORM: GPS

API: 47-015-02644 WELL NO.: 1

FARM NAME: Dink

RESPONSIBLE PARTY NAME: Energy Corporation of America

COUNTY: Clay DISTRICT: Otter

QUADRANGLE: Strange Creek

SURFACE OWNER: Lula Cutlip

ROYALTY OWNER: Betty McCracken

UTM GPS NORTHING: 4270727.6417

UTM GPS EASTING: 500274.0131 GPS ELEVATION: 402.23^m (1319')

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:

Survey grade GPS : Post Processed Differential _____

Real-Time Differential

Mapping Grade GPS _____ : Post Processed Differential _____

Real-Time Differential _____

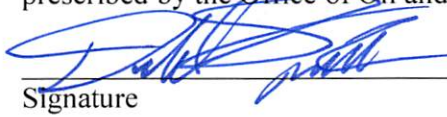
4. **Letter size copy of the topography map showing the well location.**

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

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Office of Oil and Gas

APR 05 2017

WV Department of
Environmental Protection


Signature

Director of Land Operations and Permitting

Title

3/17/17
Date

05/12/2017