west virginia department of environmental protection

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

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

Friday, September 02, 2016
WELL WORK PERMIT
Vertical / Plugging

CABOT OIL & GAS CORPORATION
2000 PARK LANE, SUITE 300

PITTSBURGH, PA 15275

Re: Permit approval for SHONK LAND 81
47-039-05141-00-00

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: SHONK LAND 81
Farm Name: SHONK LAND COMPANY, LTD.
U.S. WELL NUMBER: 47-039-05141-00-00
Vertical / Plugging
Date Issued: 9/2/2016

39 05141P

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.

WW-4B
Rev. 2/01

1) Date July 19, 2016
2) Operator's Well No. Shonk Land Co. #81
3) API Well No. 47-039-05141 P

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 ____ / Shallow X

5) Location: Elevation 2,193.54' Watershed Unnamed Tributary of Tenmile Fork
District Cabin Creek County Kanawha Quadrangle Eskdale

6) Well Operator Cabot Oil & Gas Corporation
Address 2000 Park Lane, Suite 300
Pittsburgh, PA 15275

7) Designated Agent Phillip Hill - Cabot Oil & Gas Corporation
Address 900 Lee Street East, Suite 1500
Charleston, WV 25301

8) Oil and Gas Inspector to be notified
Name Terry Urban
Address P.O. Box 1207
Clendenin, WV 25045

9) Plugging Contractor
Name Contractor Services, Inc.
Address 929 Charleston, Road
Spencer, WV 25276

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

See Attached Sheet

SEE Diagram will go to ten foot below Bottom perf

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WV Department of Environmental Protection

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

Work order approved by inspector [signature] Date 7-26-16

3905141 P

SHONK LAND #81
API # 47 – 039 - 05141
PLUGGING PROCEDURE

PREPARED BY: G.A. Shirey
DATE: 5/4/2016

Current Configuration
DTD @ 4168' PBTD = 4118'
16" conductor @ 40' KB
9 $^5/_8$" — 32# LS casing @ 980' KB, cemented to surface
7" – 20# LS casing @ 2216' KB, cemented to surface
4 $^1/_2$" – 10.5# - M50 casing @ 4141' KB w/ TOC @ 2650'
1-1/2" – 2.75# CW-100 tubing @ 4071' KB
Gordon perfs: 4086' – 4096'
Berea perfs: 3830' – 3880'
Weir perfs: 3462' – 3472'
Big Lime formation: 2958' – 3249' (not perforated)
Maxton formation: 2662' – 2875' (not perforated)
Coal @ 76' – 80', 106' – 110'
Fresh water @ 90'

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PROCEDURE

1. Contact Pineville District Office a minimum of 48 hours prior to starting work
2. Contact state inspector a minimum of 24 hours prior to starting work.
3. Prepare JSA Form and LOTO procedures as required prior to commencing any work
4. MIRU service rig and blow down well.
5. Lower tubing to ~4100' with one joint of tubing. - ten foot below bottom perfs
6. MIRU Cementing Company.
7. Pump 3 barrels of 6% Gel.
8. Pull tubing up to 4071' and pump 58 sx (12.3 bbls) of Class A cement for Cement Plug 1 from 4071' to 3300'.
9. Displace with 8 bbls of 6% Gel.
10. POOH with tubing.
11. Cut the 4$^1/_2$" casing @ 2500' and POOH with casing.
12. RIH with workstring – tag TOC to confirm.
13. Pull tubing up to 2700' and pump 31 bbls 6% Gel followed by 108 sx (23 bbls) of Class A cement for Cement Plug 2 from 2700' to 2000'.
14. Displace with 5 bbls of 6% Gel.
15. Pull tubing up to 1100' and pump 28 bbls of 6% Gel followed by 39 sx (8 bbls) of Class A cement for Cement Plug 3 from 1100' to 900'.
16. Displace with 2 bbls of 6% Gel.
17. Pull tubing up to 200' and pump 39 sx (8 bbls) of Class A cement for Cement Plug 4 from 200' to the surface.
18. TOOH with tubing and lay down.
19. RDMO Cement company
20. Erect Monument according to Law.
21. RDMO.

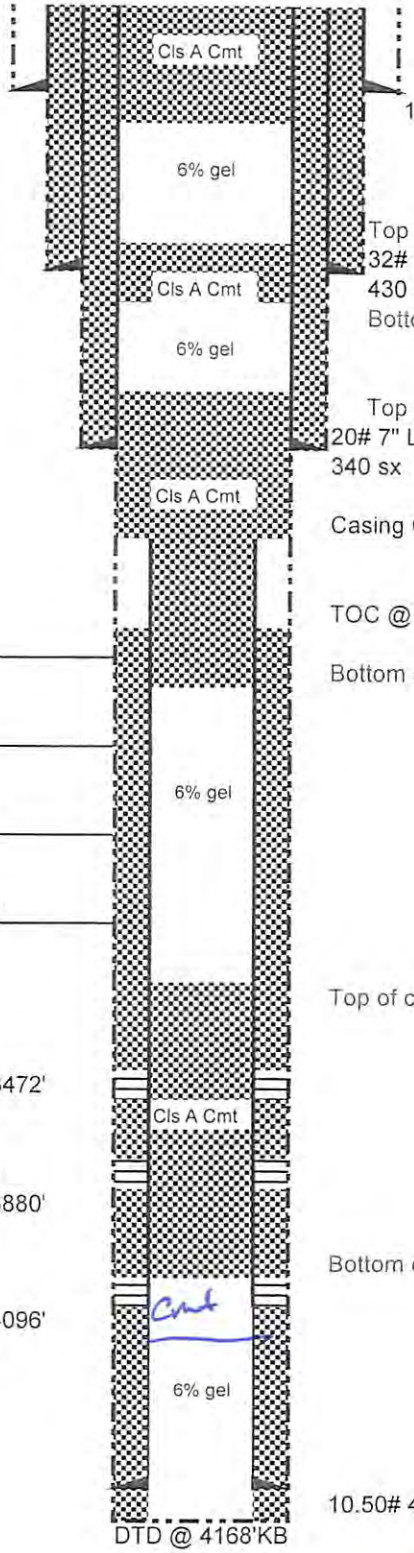
7-26-16

3905141P

"PROPOSED P&A CONFIGURATION"

Shonk Land #81
API 47-039-05141

SPUD DATE: 5/13/1997
TIL DATE: 6/17/1997



Top of cement plug 4 @ GL

Fresh Water @ 90'
Coal @ 76' - 80' & 106' - 110'

16" Conductor @ 40' KB
Bottom of cement plug 4 @ 200'

Top of cement plug 3 @ 900'
32# 9 5/8" LS Casing @ 980' KB
430 sx (CTS)
Bottom of cement plug 3 @ 1100'

SW @ 2050'
ELEVATION = 2196'

Top of cement plug 2 @ 2000'
20# 7" LS Casing @ 2216' KB
340 sx (CTS)

Elevation OK

Casing Cut @ 2500' & pulled

TOC @ 2650' KB (est)

2662'

Bottom of cement plug 2 @ 2700'

Maxton

2875'

2958'

Big Lime
Gas show 2995'
3249'

Top of cement plug 1 @ 3300'

Weir
Perforations @ 3462' - 3472'
Frac'd 300 sx 20/40 sd

Berea Gas show 3912'
Perforations @ 3830' - 3880'
Frac'd 600 sx 20/40 sd

Bottom of cement plug 1 @ 4071'

Gordon
Perforations @ 4086' - 4096'
Frac'd 500 sx 20/40 sd

10.50# 4-1/2" M50 Casing @ 4141' KB (95 Sx)

DTD @ 4168'KB

Schematic is not to scale

G.A. Shirey 5/3/2016

7-26-16

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WR-35

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NOV 03 1997
Permitting
Office of Oil & Gas

Date: 20-Oct-97
API # 47-039-05141

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

Farm name: Shonk Land Company, Ltd. Operator Well No.: Shonk Land #81

LOCATION: Elevation: 2196.16 Quadrangle: Eskdale
District: Cabin Creek County: Kanawha
Latitude: 8,100 Feet South of 38 Deg. 2 Min. 30 Sec.
Longitude: 8,000 Feet West of 81 Deg. 25 Min. 0 Sec.

Company: Cabot Oil & Gas Corporation
400 Fairway Drive: Suite 400
Coraopolis, PA 15108-4308

Agent: John Abshire
Inspector: Carlos Hively
Permit Issued: 4/29/97
Well Work Commenced: 5/13/97
Well Work Completed: 6/7/97
Verbal Plugging Permission granted on:
Rotary X Cable Rig
Total Depth (feet) 4168'
Fresh Water Depths (ft) 90'
Salt Water Depths (ft) 2,050'
Is coal being mined in area (Y / N)? Y
Coal Depths (ft) 76'-80', 106'-110'

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill up Cu. Ft.
16"	40'	40'	
9-5/8"	980'	980'	430 sks Neat
7"	2216'	2216'	340 sks Class "A"
4-1/2"	4141'	4141'	95 sks RFC

OPEN FLOW DATA

Producing formation Gordon Pay zone depth (ft) 4086' - 4096'
Gas: Initial open flow -- MCF/d Oil: Initial open flow N/A Bbl/d
Final open flow 298 comm MCF/d Final open flow N/A Bbl/d
Time of open flow between initial and final tests 24 Hours
Static rock pressure 580 psig (surface pressure after 10 Days

Second producing formation Berea Pay zone depth (ft) 3830' - 3880'
Gas: Initial open flow 137 MCF/d Oil: Initial open flow N/A Bbl/d
Final open flow 298 comm MCF/d Final open flow N/A Bbl/d
Time of open flow between initial and final tests 24 Hours
Static rock pressure 580 psig (surface pressure after 10 Days

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.

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WV Department of
Environmental Protection

For: CABOT OIL & GAS CORPORATION

By: Ray Prudrick, Jr.
Date: 10/31/97

Eskdale 8

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OPEN FLOW DATA

Third producing formation	Weir		Pay zone depth (ft)	3462' - 3474'	
Gas: Initial open flow	--	MCF/d Oil:	Initial open flow	N/A	Bbl/d
Final open flow	298 comm	MCF/d	Final open flow	N/A	Bbl/d
Time of open flow between initial and final tests				24	Hours
Static rock pressure	580	psig (surface pressure after		10	Days

Perf'd Gordon from 4086'-4096'. Brokedown with 250 gals 15% HCl acid. Breakdown pressure: 2119 psi. ISIP: 1200 psi. 75Q foam frac with 50,000# 20/40 mesh sand and 292,000 scf N_2. ATP: 975 psi. MTP: 1050 psi. ATR: 20 bpm.

Perf'd Berea from 3830'-3880'. Brokedown when perforated with 250 gals 15% HCl acid. 75Q foam frac with 60,000# 20/40 mesh sand and 348,000 scf N_2. ATP: 1200 psi. MTP: 1310 psi. ATR: 16 bpm. ISIP: 1250 psi.

Perf'd Weir from 3462'-3474'. Brokedown when perforated with 250 gals HCl acid. 75Q foam frac with 30,000# 20/40 mesh sand and 196,500 scf N_2. ATP: 1075 psi. MTP: 1112 psi. ATR: 15 bpm. ISIP: 1025 psi.

FORMATION	TOP	BOTTOM	REMARKS
Sand/Shale	0	1638	
Salt Sand	1638	2199	
Sand/Shale	2199	2850	
Maxton	2850	2950	
L. Lime	2950	3032	
B. Lime	3032	3302	
Big Injun	332	3388	
Shale	3388	3826	
Gordon	3826	3842	
Shale	3842	4168 - TD	

3905141P

WW-4A
Revised 6-07

1) Date: July 19, 2016
2) Operator's Well Number
Shonk Land Co. #81

3) API Well No.: 47 - 039 - 05141

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE 0F APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:
(a) Name: Shonk Land Company, LLC
Address: 194 Summers Street
Charleston, WV 25301
(b) Name: Sidney Polan LLC & Azel Group, LTD, LLC & et al
Address: C/O DB Mining Services LLC, 139 Lamplighter Dr.
Morgantown, WV 26508
(c) Name:
Address:

5) (a) Coal Operator
Name: See Attached Exhibit "A"
Address:
(b) Coal Owner(s) with Declaration
Name: Shonk Land Company, LLC
Address: 194 Summers Street
Charleston, WV 25301
Name:
Address:
(c) Coal Lessee with Declaration
Name: Panther Creek Mining, LLC / Alpha Natural Resources, Inc.
Address: c/o Walter Gore, 100 Technology Dr., South Charleston, WV 25309 / One Alpha Place, Bristol, VA 24202

6) Inspector: Terry Urban
Address: P.O. Box 1207
Clendenin, WV 25045
Telephone: (304) 549-5915

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: Cabot Oil & Gas Corporation
By: Kenneth L. Marcum
Its: Regulatory Supervisor
Address: 2000 Park Lane, Suite 300
Pittsburgh, PA 15275
Telephone: (412) 249-3850

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Constance C. Carden, Notary Public
McDonald Boro, Washington County
My Commission Expires Nov. 16, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

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Office of Oil and Gas
JUL 26 2016
WV Department of
Environmental Protection

Subscribed and sworn before me this 19th day of July, 2016
Constance C. Carden Notary Public
My Commission Expires November 16, 2017

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 depprivacyoffier@wv.gov.

3905141P

EXHIBIT "A"

COAL OPERATOR(S)

SHONK LAND CO. #81

API #47-039-05141

Elk Run Coal Co., Inc.
P.O. Box 497
Sylvester, WV 25193

Panther Creek Mining, LLC
3228 Summit Square Place, Ste, 180
Lexington, KY 40509

Rockspring Development, Inc.
P.O. Box 390
East Lynn, WV 25512

Marfork Coal Company, Inc.
P.O. Box 457
Whitesville, WV 25209

Seminole WV Mining Complex, LLC
1345 Elkridge Road
Elkridge, WV 25161

Elk Run Coal Co., Inc.
d.b.a Republic Energy
4101 Slate Drive
Scarbro, WV 25917

ERP Environmental Fund
P.O. Box 87
Natural Bridge, VA 24578

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WW-9
(2/15)

API Number 47 - 039 - 05141
Operator's Well No. Shonk 81

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Cabot Oil & Gas Corporation OP Code 08145

Watershed (HUC 10) Unnamed Tributary of Tenmile Fork Quadrangle Eskdale

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 ☑

ANY WELL EFFLUENT MUST BE CONTAINED IN TANKS AND DISPOSED OF PROPERLY. GWM

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
- ____ Underground Injection (UIC Permit Number _____)
- ____ Reuse (at API Number _____)
- ____ Off Site Disposal (Supply form WW-9 for disposal location)
- ■ Other (Explain No treated pit wastes will be produced

Will closed loop system be used? If so, describe: N/A

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. no drilling proposed

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

Additives to be used in drilling medium? N/A

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. No cuttings produced during plugging operation

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

-Landfill or offsite name/permit number? _____

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 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 Kenneth L. Marcum

Company Official (Typed Name) Kenneth L. Marcum

Company Official Title Regulatory Supervisor

Subscribed and sworn before me this 19th day of July, 20 16

Constance C. Carden Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Constance C. Carden, Notary Public
McDonald Boro, Washington County
My Commission Expires Nov. 16, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

My commission expires 11/16/2017

Form WW-9

3905141P

Operator's Well No. Shonk 81

Cabot Oil & Gas Corporation

Proposed Revegetation Treatment: Acres Disturbed 1.0 Prevegetation pH 6.5

Lime 2 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20/20 or equivalent

Fertilizer amount 500 lbs/acre

Mulch Pulp Fiber at 1000 to 1500 lbs. ~~Tons~~/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
(Grain Rye - 100) (Red Clover - 5) (Fescue - 40)		(Grain Rye - 100) (Red Clover - 5) (Fescue - 40)	
(Annual Rye - 20) (White Clover - 5)		(Annual Rye - 20) (White Clover - 5)	
(Perennial Rye - 10) (Alta Sweet Clover - 5)		(Perennial Rye - 10) (Alta Sweet Clover - 5)	
(Yellow Clover - 5) (Birdsfoot Trefoil - 10)		(Yellow Clover - 5) (Birdsfoot Trefoil - 10)	

Attach:
Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [signature]

Comments: Well on Strip Mtns of Carbon Creek

Title: [signature] Date: 7-26-16

Field Reviewed? (✓) Yes ( ) No

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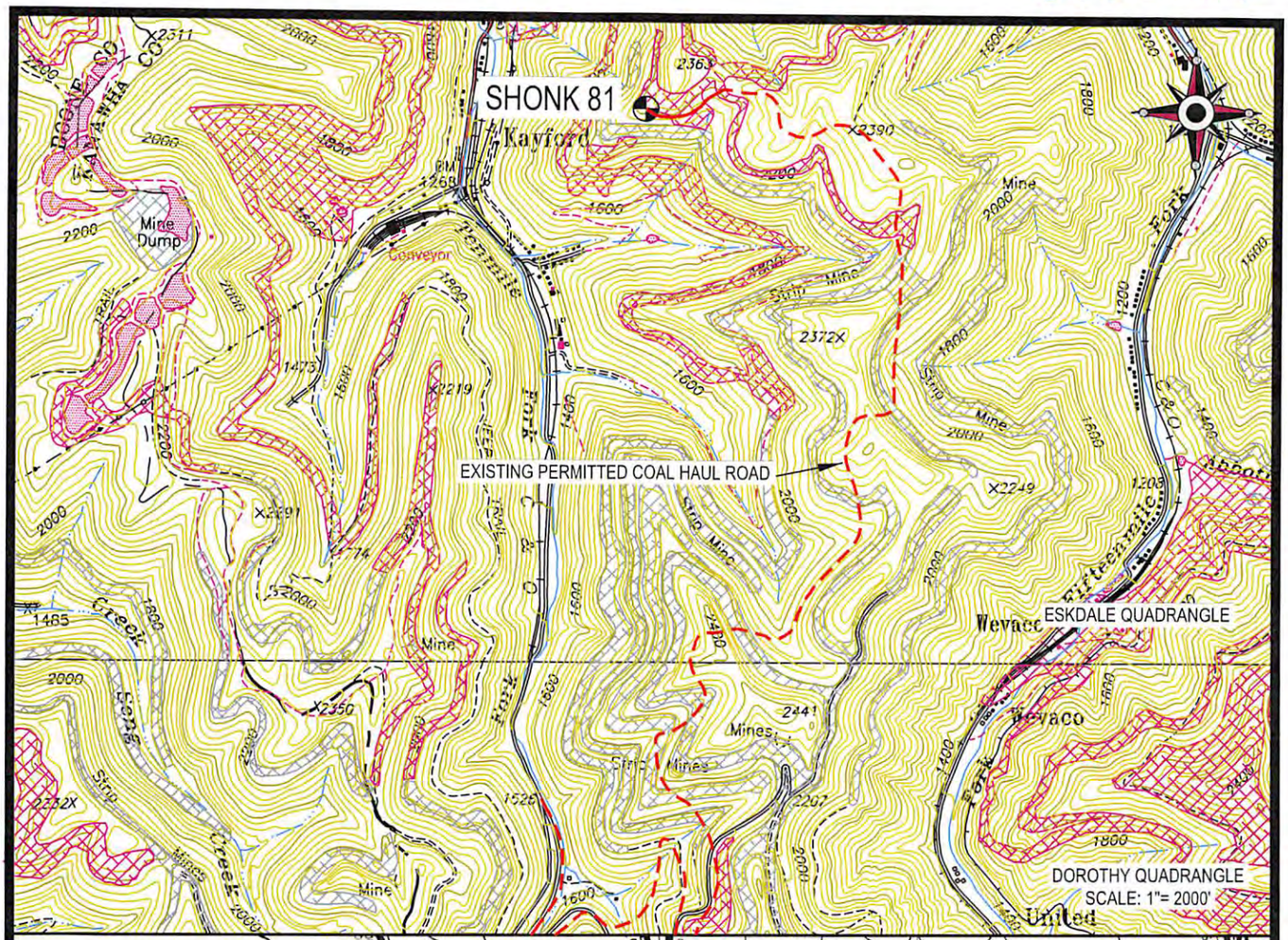
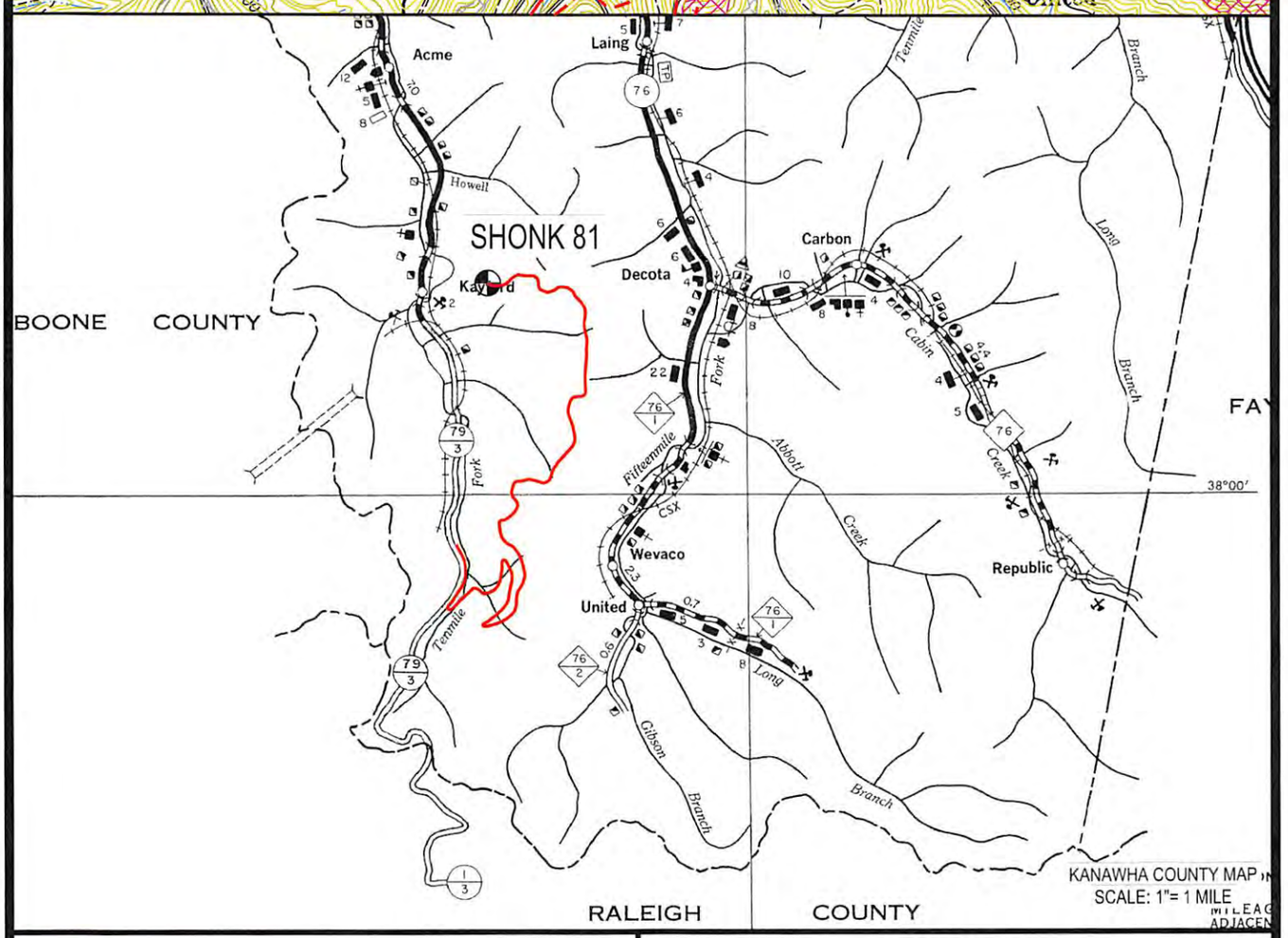




Cabot Oil & Gas Corporation

SHONK 81

LOCATION MAP

CUNNINGHAM
LAND SURVEYING & MAPPING SERVICES, LLC
• 5213 STEPHEN WAY •
• CROSS LANES, WEST VIRGINIA 25313 •
• VOICE (304) 561-4129 • FAX (304) 776-0703 •
• E-MAIL ADDRESS • DKCUNNINGHAM@SUDDENLINK.NET •

LOCATED ON THE WATERS OF AN UNNAMED TRIBUTARY
OF TENMILE FORK
CABIN CREEK DISTRICT, KANAWHA COUNTY, WV
ESKDALE QUADRANGLE

PROJECT NO. CABOT	DWG. NO. SHONK 81 LOC.DWG	
DATE: 04-21-16	SCALE: AS NOTED	CHK'D BY: D.K.C.
DRAWN BY: G. PERKINS	FILE: C:\PROJECT FOLDER\CABOT	

3905141P

GENERAL NOTES:

THIS DRAWING REPRESENTS A SCHEMATIC REPRESENTATION OF THE PROPOSED WELL SITE AND ACCESS ROAD. PROPOSED STRUCTURES SUCH AS THE DRILLING PIT, ROADWAY, CULVERTS, SEDIMENT BARRIERS, ETC. ARE SHOWN IN THEIR APPROXIMATE PREPLANNING CONFIGURATION. GIVEN UNFORESEEN CIRCUMSTANCES, THE AS-BUILT LOCATION OF THESE STRUCTURES MAY VARY SLIGHTLY FROM THE LOCATION SHOWN ON THE ATTACHED DRAWINGS.

ALL ROADS SHOWN THEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH GUIDELINES AND REQUIREMENTS OF WEST VIRGINIA DEPARTMENT OF OIL AND GAS EROSION AND SEDIMENT CONTROL MANUAL.

ALL CULVERTS SHOWN ON THIS DRAWING ARE PROPOSED AND WILL BE A MINIMUM OF 15" IN DIAMETER UNLESS OTHERWISE NOTED.

DITCH LINES AND CULVERTS WILL BE INSTALLED WHENEVER PRACTICAL. HOWEVER PORTIONS OF THE EXISTING/ PROPOSED ROADS WHICH ARE LOCATED IN SOLID ROCK SHALL NOT REQUIRE DITCHES OR CROSS DRAINS, UNLESS OTHERWISE WARRANTED BY FIELD CIRCUMSTANCES.

SUPPLEMENTAL DRAINAGE AND/OR SEDIMENT CONTROL STRUCTURES MEASURES IN ADDITION TO THOSE SHOWN ON THE ATTACHED DRAWINGS WILL BE INSTALLED WHEN AND WHERE DEEMED NECESSARY. SUCH ADDITIONAL MEASURES MAY CONSIST OF EITHER STRAW BALES, SILT FENCES OR OTHER MEASURES OUTLINED IN THE WEST VIRGINIA DEPARTMENT OF OIL AND GAS EROSION AND SEDIMENT CONTROL FIELD MANUAL.

SEDIMENT BASINS (TRAPS) WILL BE CONSTRUCTED AT ALL CULVERTS AND CROSS DRAINS INLETS AS REQUIRED IN THE WEST VIRGINIA DEPARTMENT OF OIL AND GAS EROSION AND SEDIMENT CONTROL MANUAL. FIELD CONDITIONS SUCH AS ROCK OUTCROPS AND BEDROCK MAY PROHIBIT INLET TRAPS BEING INSTALLED WHEN THESE CONDITIONS EXIST. ADDITIONAL EROSION CONTROL MEASURES SHALL BE EVALUATED AND UTILIZED AS NEEDED.

A SEDIMENT BARRIERS OF EITHER BRUSH, STRAW BALES, FILTER FENCE, ETC. WILL BE INSTALLED AND MAINTAINED BELOW THE OUT FALL OF ALL PROPOSED CULVERTS AND AT ALL OTHER STORM WATER DRAINAGE POINTS FROM EITHER THE ROADWAY OR THE LOCATION.

ALL NECESSARY TIMBER OR BRUSH WILL BE REMOVED FROM ROUTE OF THE ROADWAY AND LOCATION BY CLEANING AND GRUBBING ACTIVITIES. ANY SALVAGEABLE TIMBER WILL BE CUT AND STACKED TO THE SIDE OF THE ROADWAY OR REMOVED TO A STOCKPILE AREA. THE REMAINING TIMBER OR BRUSH WILL BE CUTUP AND WIND ROWED BELOW THE OUTSLOPE OF THE CONSTRUCTION AREAS TO BE UTILIZED AS A SEDIMENT BARRIER.

SEPARATE PERMITS WILL BE OBTAINED FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION FOR ALL POINTS OF INGRESS AND EGRESS FROM COUNTY AND STATE ROADS. THESE INGRESS AND EGRESS POINTS WILL BE MAINTAINED IN ACCORDANCE WITH CURRENT WEST VIRGINIA DEPARTMENT OF TRANSPORTATION REGULATIONS. A STABILIZED CONSTRUCTION ENTRANCE CONSISTING OF 8" OF CRUSHED STONE WILL BE CONSTRUCTED FOR A MINIMUM DISTANCE OF 50' FROM THE INGRESS AND EGRESS POINTS OF ALL PUBLIC ROADWAYS IN ACCORDANCE WITH CURRENT WEST VIRGINIA DEPARTMENT OF TRANSPORTATION REGULATIONS.

ALL CULVERTS SHOWN ON THE ATTACHED DRAWINGS ARE TO BE CONSIDERED PERMANENT AND WILL REMAIN IN PLACE AFTER COMPLETION OF CONSTRUCTION ACTIVITIES UNLESS NOTED OTHERWISE. A STABILIZED OUTLET CONTROL DEVICE SUCH AS RIP RAP, NATURAL STONE, BRUSH, ETC. WILL BE INSTALLED BELOW THE OUT FALL OF ANY ROADWAY CULVERT(S) WHICH ARE NOT LOCATED IN A STREAM OR CREEK.

PERMANENT CROSS DRAINS OR WATER BARS WILL BE INSTALLED AS AN INTEGRAL PART OF THE RECLAMATION PROCESS AND SHALL BE SPACED IN ACCORDANCE WITH AS-BUILT ROADWAY SLOPES AND TABLE 11-4 OF THE WEST VIRGINIA DEPARTMENT OF OIL AND GAS EROSION AND SEDIMENT CONTROL FIELD MANUAL.

TEMPORARY SEEDING AND MULCHING WILL BE UTILIZED TO PROVIDE A VEGETATIVE COVER ON ALL DISTURBED AREAS I.E. ROADWAYS, LOCATION, ROAD/LOCATION SLOPES AND ANY OTHER AREAS THAT ARE DISTURBED BY CONSTRUCTION ACTIVITIES.

THE LOCATION OF DRILLING PIT(S) MAY BE ADJUSTED TO THE MOST ENVIRONMENTAL SAFE SITE TO MEET THE REQUIREMENTS OF THE WVDEP.

CONTRACTORS NOTE:

IT IS THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION AND CONDITION OF ALL UNDERGROUND UTILITIES, SANITARY SEWERS, STORM SEWERS, ETC. PRIOR TO THE COMMENCEMENT OF ANY/OR CONSTRUCTION ACTIVITIES. DIG WITH C.A.R.E. CALL MISS UTILITY 1-800-245-4848.

TABLE 11-4 SPACING OF CROSS DRAINS	
ROAD GRADE (%)	DISTANCE (FT)
1	400
2	250
5	135
10	80
15	60
20	45

TABLE 11-7 SPACING OF CULVERTS	
ROAD GRADE (%)	DISTANCE (FT)
2-5	500-300
6-10	300-200
11-15	200-100
16-20	100

DIG WITH C.A.R.E. CALL MISS UTILITY KEEP WEST VIRGINIA SAFE

1-800-245-4848

DRAWING LEGEND

PROPOSED ROAD
EXISTING ROAD
STRAW BALES
SILT FENCE
BRUSH BARRIER
TREE LINE
ROCK RIP RAP
CROSS DRAIN
CULVERT
DRILLING PIT
ROAD DITCH
GAS LINE
FENCE LINE
ROCK OUTCROP
WATER WELL
HOUSE/STRUCTURE
UTILITY POLE
SPRING
WET SPOT
PIT WASTE APP. AREA

RECEIVED
Office of Oil and Gas
JUL 2 6 2016
WV Department of
Environmental Protection

DRIVING DIRECTIONS FOR SHONK 81

1.) FROM THE INTERSECTION OF INTESTATE 64 WITH INTERSTATE 77 IN CHARLESTON, DRIVE EASTERLY ON INTERSTATE 77 FOR 21.2 MILES± TO EXIT 79 AND EXIT THE HIGHWAY TO SECONDARY ROUTE 79/3.
2.) TURN RIGHT ONTO SECONDARY ROUTE 79/3 AND GO SOUTHERLY FOR 13.0 MILES± TO THE BEGINNING OF AN EXISTING COAL HAUL ROAD.
3.) TURN LEFT ONTO THE COAL HAUL ROAD AND GO NORTHERLY FOR 4.5 MILES± TO THE BEGINNING OF THE EXISTING ACCESS ROAD.
5.) FROM THE AFOREMENTIONED SITE, FOLLOW THE EXISTING ROAD FOR APPROXIMATELY 0.25 MILE± TO THE EXISTING WELL SITE AS SHOWN ON THE "CONSTRUCTION AND RECLAMATION PLAN".

Cabot Oil & Gas Corporation

SHONK 81

CABIN CREEK DISTRICT, KANAWHA COUNTY, WV
ESKDALE 7.5' QUADRANGLE

39 05141P

Note:
Tanks will be used instead of drilling pit(s), and may be adjusted to the most environmental safe site to meet the requirements of the WVDEP.

2363

1800

APPLY CULVERTS AS NEEDED

Surface Owner
TM 80, TP 1
Shonk Land Co., LLC

15" C.P.P.

15" C.P.P.

15" C.P.P.

15" C.P.P.

15" C.P.P.

EXISTING ROAD
−13% TO −16%
320'±

EXISTING ROAD
−4% TO −7%
85'±

SHONK 81
API 039−05141

EXISTING ROAD
0% TO +2%
250'±

EXISTING ROAD
−2% TO −5%
175'±

EXISTING ROAD
+2% TO +5%
170'±

EXISTING PERMITTED COAL HAUL ROAD

DRAWING LEGEND

PROPOSED ROAD		ROAD DITCH	
EXISTING ROAD		GAS LINE	
STRAW BALES		FENCE LINE	
SILT FENCE		ROCK OUTCROP	
BRUSH BARRIER		WATER WELL	
TREE LINE		HOUSE/STRUCTURE	
ROCK RIP RAP		UTILITY POLE	
CROSS DRAIN		SPRING	
CULVERT		WET SPOT	
DRILLING PIT		PIT WASTE APP. AREA	

0 100' 200' 400'
GRAPHIC SCALE

Cabot Oil & Gas Corporation

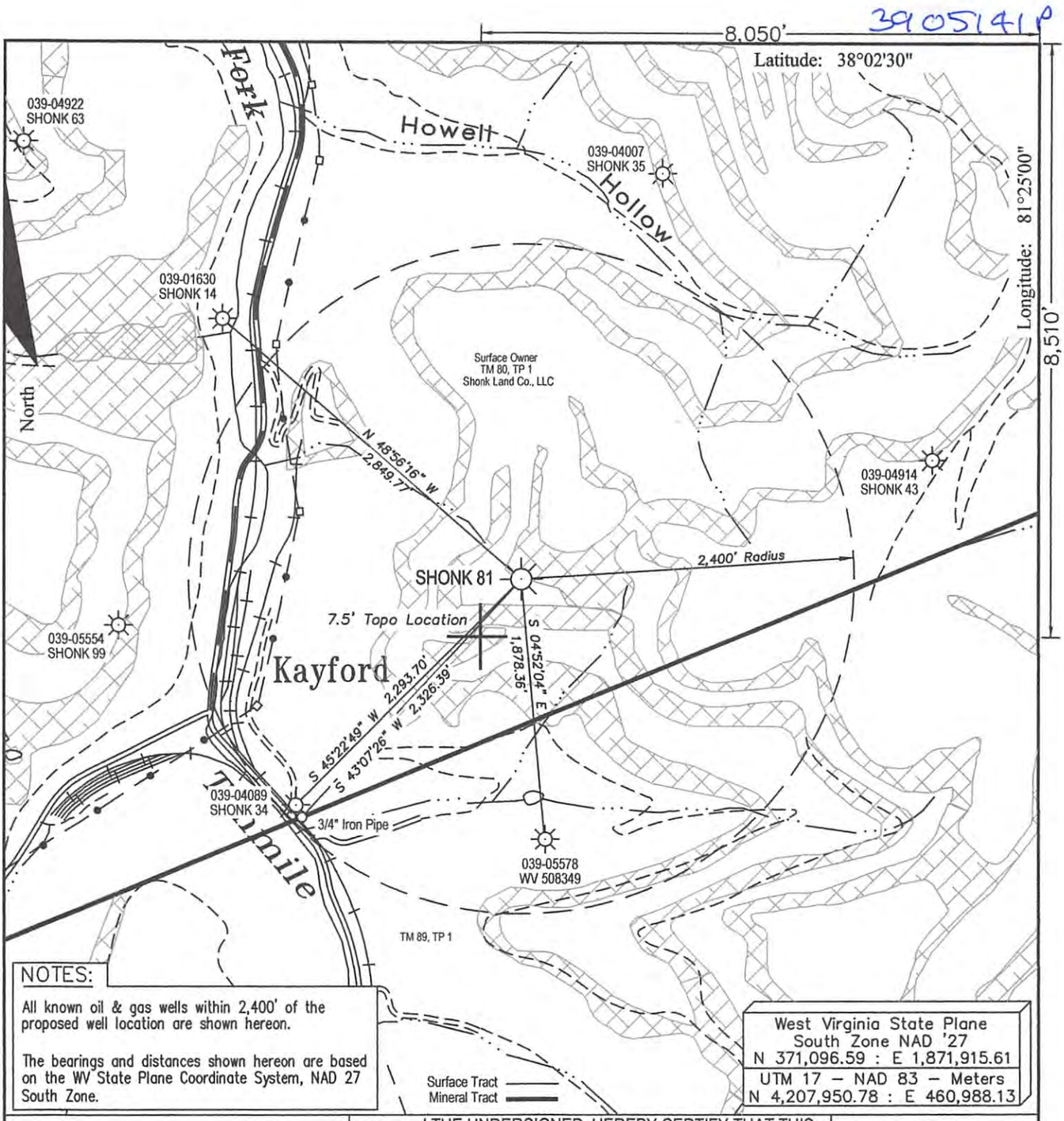
SHONK 81

CONSTRUCTION & RECLAMATION SITE PLAN

SITUATED ON THE WATERS OF AN UNNAMED TRIBUTARY OF TENMILE FORK
CABIN CREEK DISTRICT, KANAWHA COUNTY, WV
ESKDALE QUADRANGLE

SHEET NUMBER	SCALE:	DRAWN BY:	DATE:	CHK'D. BY:
1 OF 1	1"=200'	G. PERKINS	04−25−16	DKC

3905141P



NOTES:

All known oil & gas wells within 2,400' of the proposed well location are shown hereon.

The bearings and distances shown hereon are based on the WV State Plane Coordinate System, NAD 27 South Zone.

West Virginia State Plane
South Zone NAD '27
N 371,096.59 : E 1,871,915.61
UTM 17 – NAD 83 – Meters
N 4,207,950.78 : E 460,988.13

FILE #:

DRAWING #: Shonk 81

SCALE: 1" = 1000'

MINIMUM DEGREE OF ACCURACY: 1 : 5,000

PROVEN SOURCE OF ELEVATION: Global Positioning System (GPS)

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 ENVIROMENTAL PROTECTION.

Signed:

R.P.E.: L.L.S.: 1993

GREGORY A. PERKINS LICENSED No. 1993 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

STATE OF WEST VIRGINIA MONTANI SEMPER LIBERI

DATE: April 21, 2016

OPERATOR'S WELL #: Shonk 81

API WELL #: 47 039 05141
STATE COUNTY PERMIT

Well Type: ☐ Oil ☐ Waste Disposal ☐ Production ☐ Deep
☒ Gas ☐ Liquid Injection ☐ Storage ☒ Shallow

WATERSHED: Unnamed Tributary of Tenmile Fork ELEVATION: 2,193.54

COUNTY/DISTRICT: Cabin Creek / Kanawha QUADRANGLE: Eskdale

SURFACE OWNER: Shonk Land Co., LLC ACREAGE: 11,215.57

OIL & GAS ROYALTY OWNER: Shonk Land Co., LLC ACREAGE: 11,215.57

LEASE #: 47-0641 DRILL ☐ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☐

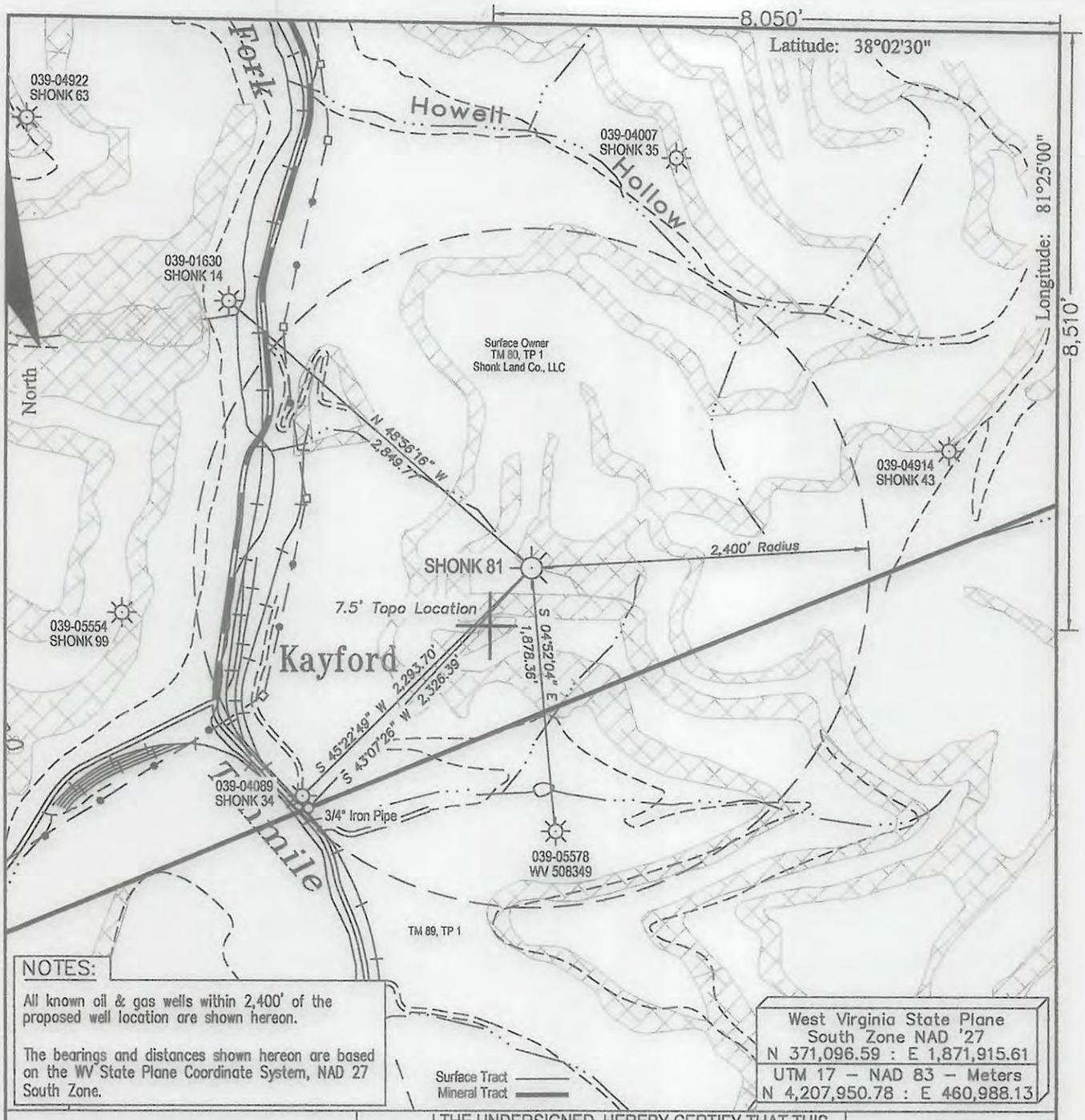
PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☐ PLUG & ABANDON ☒

CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY):

TARGET FORMATION: ESTIMATED DEPTH:

WELL OPERATOR Cabot Oil & Gas Corp.
Address 2000 Park Lane, Suite 300
City Pittsburgh State PA Zip Code 15275

DESIGNATED AGENT Phillip Hill
Address 900 Lee Street, Suite 1500
City Charleston State WV Zip Code 25301



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West Virginia State Plane
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City Pittsburgh State PA Zip Code 15275

DESIGNATED AGENT Phillip Hill
Address 900 Lee Street, Suite 1500
City Charleston State WV Zip Code 25301