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west virginia department of environmental protection

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

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

Tuesday, January 23, 2018  
WELL WORK PERMIT  
Vertical / Plugging

CABOT OIL & GAS CORPORATION  
2000 PARK LANE, SUITE 300

PITTSBURGH, PA 15275

Re: Permit approval for C-62  
47-081-01369-00-00

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: C-62  
Farm Name: BEAVER COAL CO.  
U.S. WELL NUMBER: 47-081-01369-00-00  
Vertical / Plugging  
Date Issued: 01/23/2018

Promoting a healthy environment.

01/26/2018

## 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.

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### CONDITIONS

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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 January 10, 20 18  
2) Operator's  
Well No. Beaver Coal C-62  
3) API Well No. 47-081 - 01369

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 2,292.22' Watershed Shockley Branch of Millers Camp Branch  
District Town County Raleigh Quadrangle Lester

6) Well Operator Cabot Oil & Gas Corporation 7) Designated Agent Phillip Hill - Cabot Oil & Gas Corporation  
Address 2000 Park Lane, Suite 300 Address 29 Starbuck Lane  
Pittsburgh, PA 15275 Saulsville, WV 25876

8) Oil and Gas Inspector to be notified Name Gary Kennedy  
Address 252 Circle Avenue  
Ranielle, WV 25962  
9) Plugging Contractor Name Francis Brothers  
Address 622 North Church Street  
Ripley, WV 25271

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

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JAN 16 2018  
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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 GARY KENNEDY Date Jan 23, 2018  
*gnm*

# BEAVER COAL C-62

## API # 47 – 081 – 01369

### PLUGGING PROCEDURE

#### Current Configuration

LTD @ 4042' KB

Elevation – 2305'

20" conductor @ 22' KB, not cemented

13-3/8" – 48# R-2 casing @ 505' KB, cemented & grouted to surface

9-5/8" – 26# LS casing @ 833' KB, cemented to surface

4 1/2" – 10.5# M-60 casing @ 4016' KB w/ TOC @ 2350'

2-3/8" – EUE tubing @ 2918' KB

Sunbury Shale perms: 3800' – 3810'

Weir Shale perms: 3600' – 3620'

Middle Big Lime perms: 2946' – 2956'

Upper Big Lime perms: 2782' – 2792'

Open mine @ 465' – 468'

Workable Coal @ 431' – 433'

Fresh water @ 177', 330', 430', & 530'

#### 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. MIRU service rig and blow down well.
4. Lay 2" line from wellhead to pit/tank and stake down securely. Vent 4-1/2" x 9-5/8" annulus.
5. Unpack wellhead and ensure tubing is free and can be pulled.
6. Run rig tools to determine well TD and note any fluid level.
7. Lower tubing to 3820' with 29 joints of tubing.
8. MIRU Cementing Company.
9. Pump 25 sacks of Class A cement for cement plug 1 from 3820' to 3500'.
10. Displace with 13-1/2 bbls of 6% Gel.
11. Pull tubing up to 3000' and pump 30 sacks of Class A cement for cement plug 2 from 3000' to 2600'.
12. Displace with 10 bbls of 6% Gel.
13. POOH with tubing and let cement plug set for a minimum of eight hours.
14. Run freepoint and cut 4 1/2" casing where free. Estimate ±2270'.
15. Pick up casing 1 jt and pump 25 bbls of 6% Gel followed by 45 sacks of Class A cement for cement plug 3 from 2270' to 2050'.
16. Displace with 32 1/2 bbls of 6% Gel.
17. Pull casing up to 933' and pump 45 cubic feet of expanding cement for cement plug 4 from ~~870' to 770'~~ 933' to 833'. SET 200' OF EXPANDING CEMENT FROM 833' TO 633'.
18. Displace with 12 bbls of 6% Gel.
19. Pull casing up to 550' and pump 210 sacks of Class A cement for cement plug 5 from 550' to surface.
20. TOOH with casing and lay down.
21. RDMO Cement company.
22. Place monument as required by law on top of well bore.
23. Reclaim well site.

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SNM

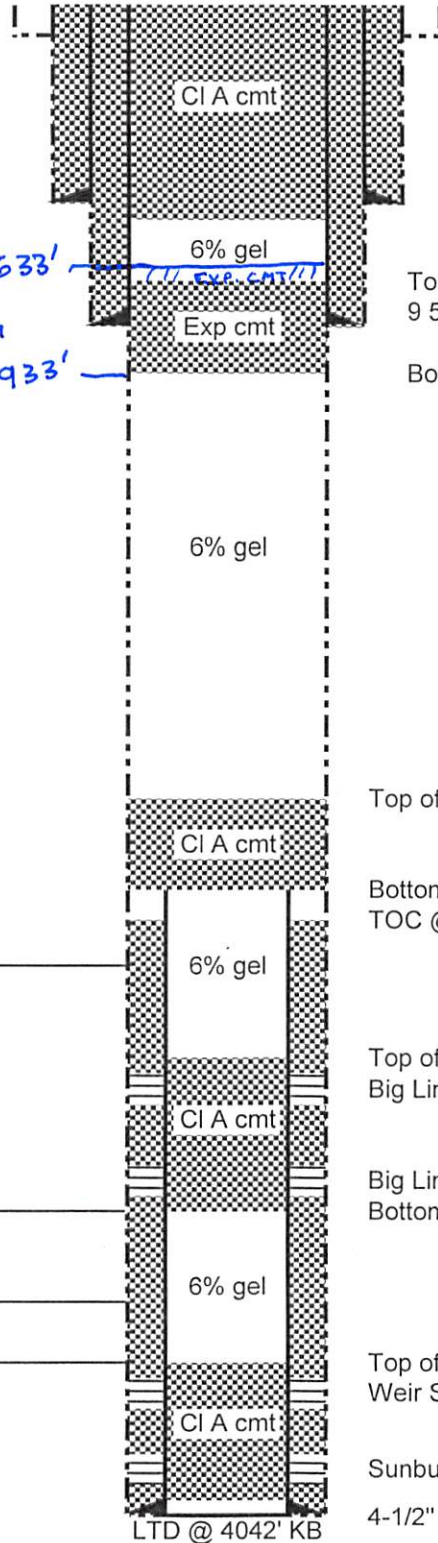


**Beaver Coal C-62**  
 API 47-081-01369  
 PROPOSED CONFIGURATION  
 Elevation - 2305'

Fresh water @ 177',  
 330', 430', & 530'

Coal @ 431' -433' &  
 465' - 468' (open)

633'  
 7mm  
 933'



22" Conductor @ 21' KB

13 3/8" - 48# R-2 casing @ 505' KB  
 Cemented & grouted to surface  
 Bottom of cmt plug 5 @ 550'

Top of cmt plug 4 @ 780'  
 9 5/8" - 26# LS casing @ 833' KB  
 Cemented to surface  
 Bottom of cmt plug 4 @ 880'

Top of cmt plug 3 @ ±2050'

Bottom of cmt plug 3 @ ±2270'  
 TOC @ 2350' KB

Top of cmt plug 2 @ 2600'  
 Big Lime Perforations @ 2782'-2792'

Big Lime Perforations @ 2946'-2956'  
 Bottom of cmt plug 2 @ 3000'

Top of cmt plug 1 @ 3500'  
 Weir Shale Perforations @ 3600'-3620'

Sunbury Perforations @ 3800'-3810'  
 4-1/2" 10.5# M-60 casing @ 4016' KB

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2484'

BIG LIME

3118'

WEIR

3350'

3410'

Schematic is not to scale

T. Ou 04/23/15

01/26/2018

WR-35

Date March 1, 2006  
API # 47- 081 - 01369

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

Farm Name: Beaver Coal Company Operator Well No.: Beaver Coal C-62

LOCATION: Elevation: 2305' Quadrangle: Lester  
District: Town County: Raleigh  
Latitude: 6400' feet South of 37° DEG. 45' MIN. 00" SEC.  
Longitude: 8100' feet West of 81° DEG. 15' MIN. 00" SEC.

Company: Cabot Oil & Gas Corporation  
900 Lee Street East, Suite 500  
Charleston, WV 25301

Casing & Tubing Size	Used in Drilling	Left In Well	Cement Fill Up Cu. Ft.
22"	21'	21'	NA
13-3/8"	505'	505'	445
9-5/8"	833'	833'	393
4-1/2"		4016'	200
2-3/8"		2919'	NA

Agent: Thomas S. Liberatore  
Inspector: Richard S. Campbell  
Permit Issued: 7/25/2005  
Well Work Commenced: October 10, 2005  
Well Work Completed: November 7, 2005  
Verbal Plugging: \_\_\_\_\_  
Permission granted on: \_\_\_\_\_  
Rotary X Cable \_\_\_\_\_  
Total Depth (feet) 4042'  
Fresh Water Depths (ft) 177', 330', 430', 530'  
Salt Water Depths (ft) NONE REPORTED  
Is coal being mined in area (Y/N) ? YES  
Coal Depths (ft) 431-433'; 465-468' (open)

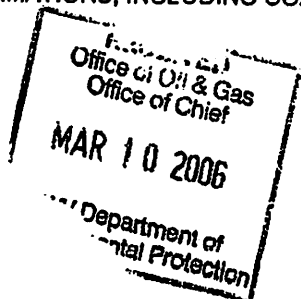
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OPEN FLOW DATA

Producing Formation SUNBURY LOWER WEIR SHALE Pay Zone 3800'-3810'  
Depth (ft) 3600'-3620'  
Gas: Initial Open Flow TSTM MCF/d Oil: Initial Open Flow 0 Bbl/d  
Final Open Flow 0 MCF/d Final Open Flow 0 Bbl/d  
Time of open flow between initial and final tests 8 Hours  
Static rock pressure 250 psig surface pressure after 2512 Hours

Second Producing Formation MIDDLE LIME UPPER BIG LIME Pay Zone 2946'-2956'  
Depth (ft) 2782'-2792'  
Gas: Initial Open Flow TSTM MCF/d Oil: Initial Open Flow 0 Bbl/d  
Final Open Flow 285 (COMMINGLED) MCF/d Final Open Flow 0 Bbl/d  
Time of open flow between initial and final tests 8 Hours  
Static rock pressure 250 psig surface pressure after 2512 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 SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE



For: CABOT OIL & GAS CORPORATION  
By: [Signature] Drilling Superintendent  
Date: 3/3/06

01/26/2018

f. t. >

RAL-1369

STAGE	PERFS	ACID 15% HCl	FOAM	SAND (lbs)	NITROGEN (scf)	BDP	ATP	MTP	ISIP
1-Sunbury Fault	3800-3810 (40)	250 gal	75Q	45,215	474,000	2675	1736	1790	1400
2-Lower Weir Shale	3600-3620'	350 gal	75Q	45,510	422,000	1588	1648	1776	1520
3-Middle Lime	2946-2956 (40)	500 gal	75Q	29,600	438,000	2331	2549	2622	2426
4-Upper Big Lime	2782-2792 (40)	500 gal	75Q	30,400	468,000	2333	2938	3128	2930

FORMATION	TOP	BOTTOM	REMARKS
Silt/Shale	Surface	431	
Coal	431	433	
Silt/Shale	433	465	
Coal	465	468	OPEN
Silt/Shale	468	525	
Shale	525	744	
RV, Sandstone	744	790	
Silt/Shale	790	851	
Avis, Limestone	851	898	
Silt/Shale	898	1474	
Maxton	1474	1545	
Shale	1545	2252	
Little Lime	2252	2379	
Pencil Cave	2379	2484	
Big Lime	2484	3118	
Pocono	3118	3350	
Weir	3350	3410	
Silt/Shale	3410	3772	
Berea	3772	3775	
Silt/Shale	3775	4045	TD

WW-4A  
Revised 6-07

1) Date: January 10, 2018  
2) Operator's Well Number  
Beaver Coal C-62

3) API Well No.: 47 - 081 - 01369

**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>Beaver Coal Company Limited</u>	Name <u>See Addendum "A"</u>
Address <u>115 1/2 S. Kanawha Street</u>	Address _____
<u>Beckley, WV 25801</u>	_____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>Beaver Coal Company Limited</u>
_____	Address <u>115 1/2 S. Kanawha Street</u>
_____	<u>Beckley, WV 25801</u>
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>Gary Kennedy</u>	(c) Coal Lessee with Declaration
Address <u>252 Circle Avenue</u>	Name <u>See Addendum "A"</u>
<u>Rainelle, WV 25962</u>	Address _____
Telephone <u>304-382-8402</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.

Commonwealth of Pennsylvania - Notary Seal  
 Constance C. Carden, Notary Public  
 Washington County  
 My commission expires November 16, 2021  
 Commission number 1252953  
 MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Well Operator Cabot Oil & Gas Corporation  
 By: Kenneth L. Marcum  
 Its: Regulatory Supervisor  
 Address 2000 Park Lane, Suite 300  
Pittsburgh, PA 15275  
 Telephone 412-349-3850

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Subscribed and sworn before me this 10th day of January, 2018  
Constance C. Carden Notary Public  
 My Commission Expires November 16, 2021

WV Department of Environmental Protection

**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](mailto:depprivacyoffier@wv.gov).



ADDENDUM "A"  
Coal Operator/Lessee with Declaration

BEAVER COAL C-62

47-081-01369

Newgate Development of Beckley, LLC ✓  
302 South Jefferson Street  
Roanoke, Virginia 24011

Newgate Development of Beckley, LLC ✓  
818 North Eisenhower Drive  
Beckley, WV 25801

Kentucky Fuel Corporation ✓  
818 North Eisenhower Drive  
Beckley, WV 25801

Pocahontas Coal Company, LLC ✓  
109 Appalachian Drive  
Beckley, WV 25801

ICG Beckley, LLC ✓  
P.O. Box 49  
Eccles, WV 25836

Baylor Mining, Inc. ✓  
P.O. Box 577  
Mabscott, WV 25871

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01/26/2018

WW-9  
(2/15)

API Number 47 - 081 - 01369

Operator's Well No. Beaver Coal C-62

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) Shockley Branch of Millers Camp Branch Quadrangle Lester

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
- 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 Work Tank - ?)

*ANY WELL EFFLUENT MUST BE CONTAINED IN TANKS AND DISPOSED OF OFF-SITE, PROPERLY. JMM*

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

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

JAN 23 2018

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

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Environmental Protection

-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 10th day of January, 2018

Constance C. Carden

Commonwealth of Pennsylvania - Notary Seal  
Constance C. Carden, Notary Public  
Washington County  
My commission expires November 16, 2021  
Commission number 1252953  
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

My commission expires 11/16/2021

01/26/2018

Cabot Oil & Gas Corporation

Proposed Revegetation Treatment: Acres Disturbed 0.75 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
(Grain Rye - 100) (Red Clover - 5) (Fescue - 40)	
(Annual Rye - 20) (White Clover - 5)	
(Perennial Rye - 10) (Alta Sweet Clover - 5)	
(Yellow Clover - 5) (Birdsfoot Trefoil - 10)	

Seed Type	lbs/acre
(Grain Rye - 100) (Red Clover - 5) (Fescue - 40)	
(Annual Rye - 20) (White Clover - 5)	
(Perennial Rye - 10) (Alta Sweet Clover - 5)	
(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.

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Plan Approved by: *Anthony Kuehn*

JAN 23 2018

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

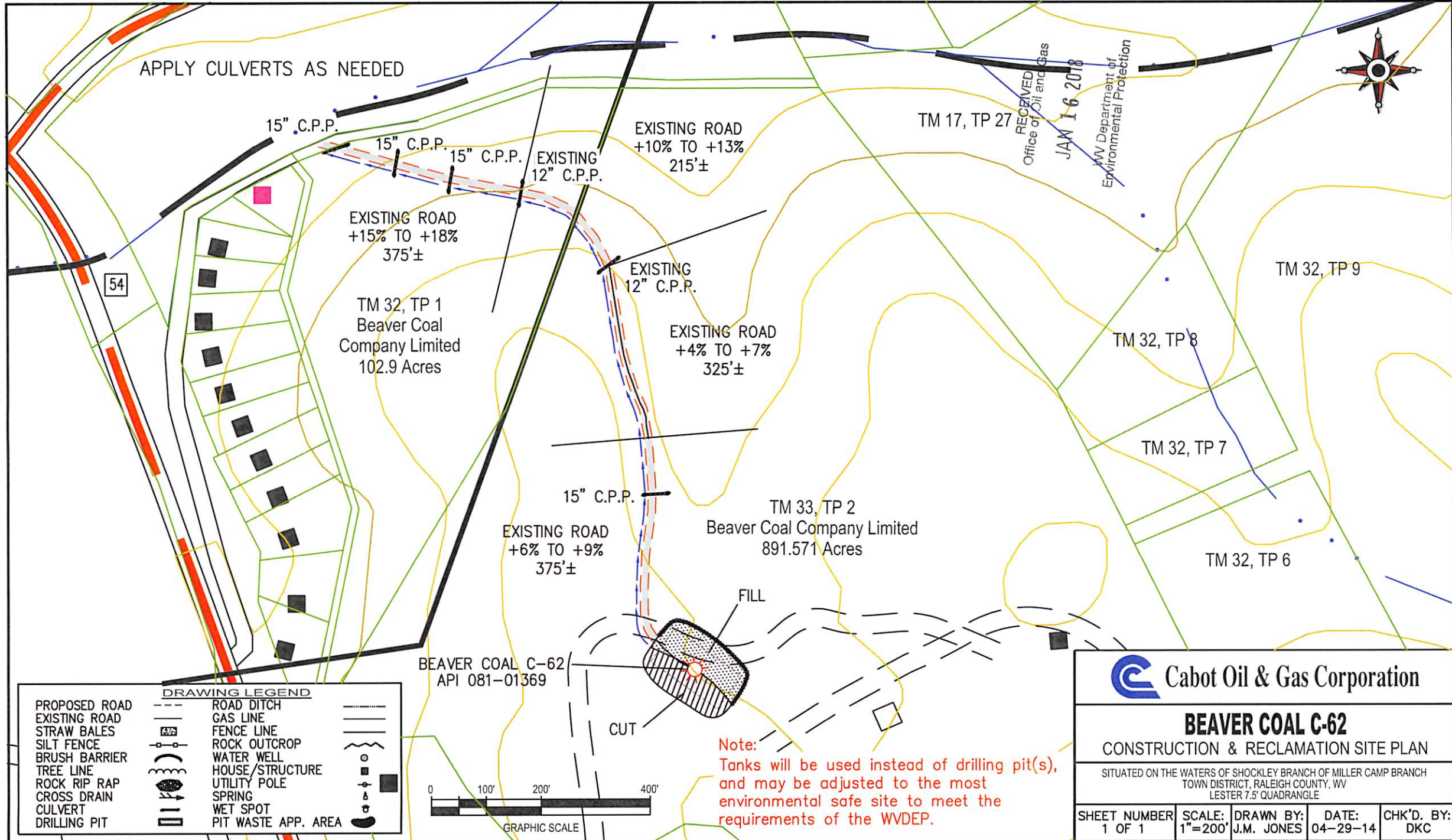
Title: *Inspector*

Date: *1/22/18*

Field Reviewed? ( ) Yes ( ) No



81-01369P



APPLY CULVERTS AS NEEDED

15" C.P.P.

15" C.P.P.

15" C.P.P.

EXISTING 12" C.P.P.

EXISTING ROAD +10% TO +13% 215'±

EXISTING ROAD +15% TO +18% 375'±

TM 32, TP 1 Beaver Coal Company Limited 102.9 Acres

EXISTING 12" C.P.P.

EXISTING ROAD +4% TO +7% 325'±

TM 17, TP 27

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TM 32, TP 9

TM 32, TP 8

TM 32, TP 7

TM 32, TP 6

15" C.P.P.

EXISTING ROAD +6% TO +9% 375'±

TM 33, TP 2 Beaver Coal Company Limited 891.571 Acres

FILL

CUT

BEAVER COAL C-62 API 081-01369

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.



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	



Cabot Oil & Gas Corporation

BEAVER COAL C-62 CONSTRUCTION & RECLAMATION SITE PLAN

SITUATED ON THE WATERS OF SHOCKLEY BRANCH OF MILLER CAMP BRANCH TOWN DISTRICT, RALEIGH COUNTY, WV LESTER 7.5' QUADRANGLE

SHEET NUMBER	SCALE:	DRAWN BY:	DATE:	CHK'D. BY:
1 OF 1	1"=200'	J.M. JONES	04-29-14	DKC



**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.

ROAD GRADE (%)	DISTANCE (FT)
1	400
2	250
5	135
10	80
15	60
20	45

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



**DRAWING LEGEND**

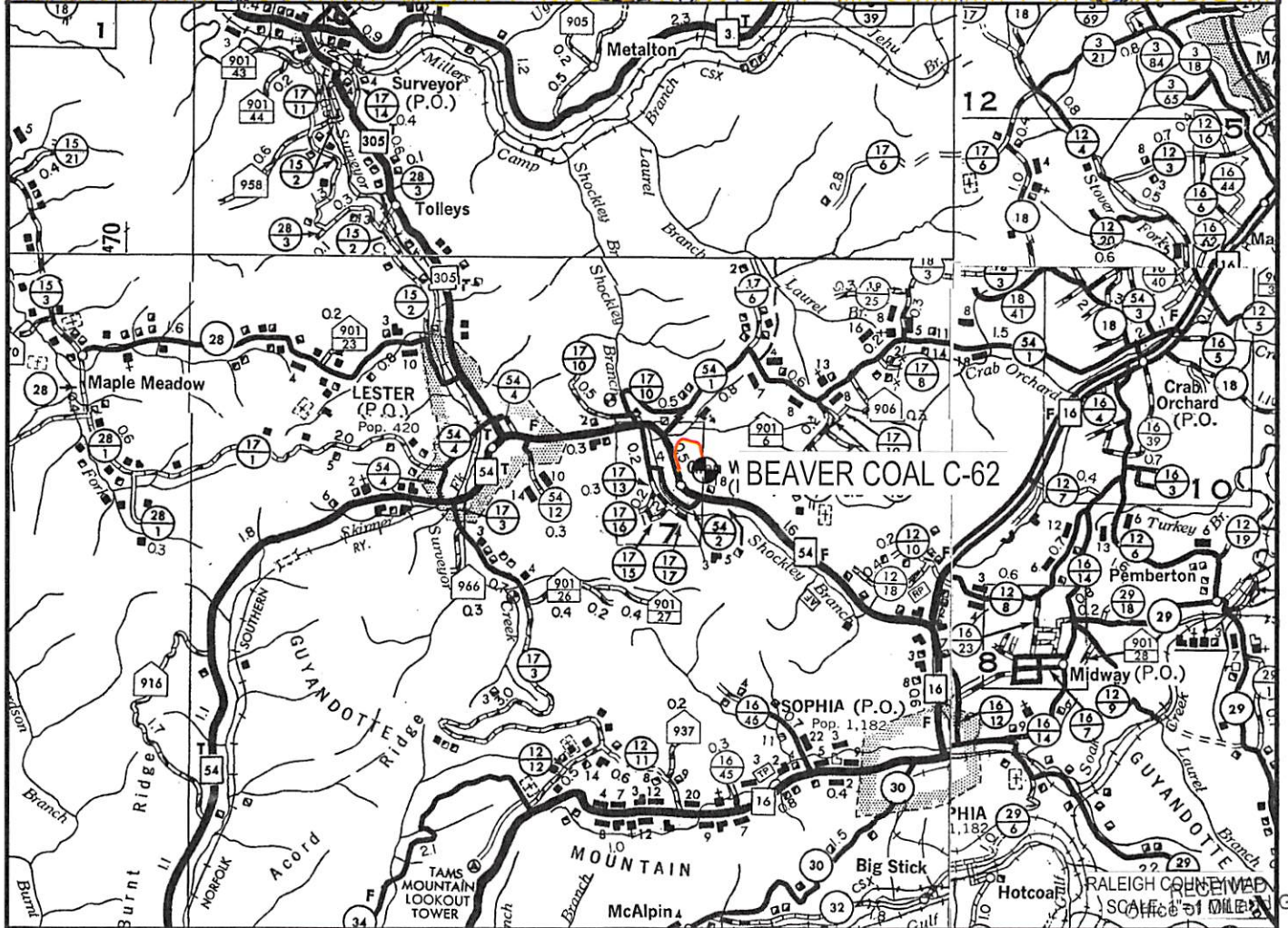
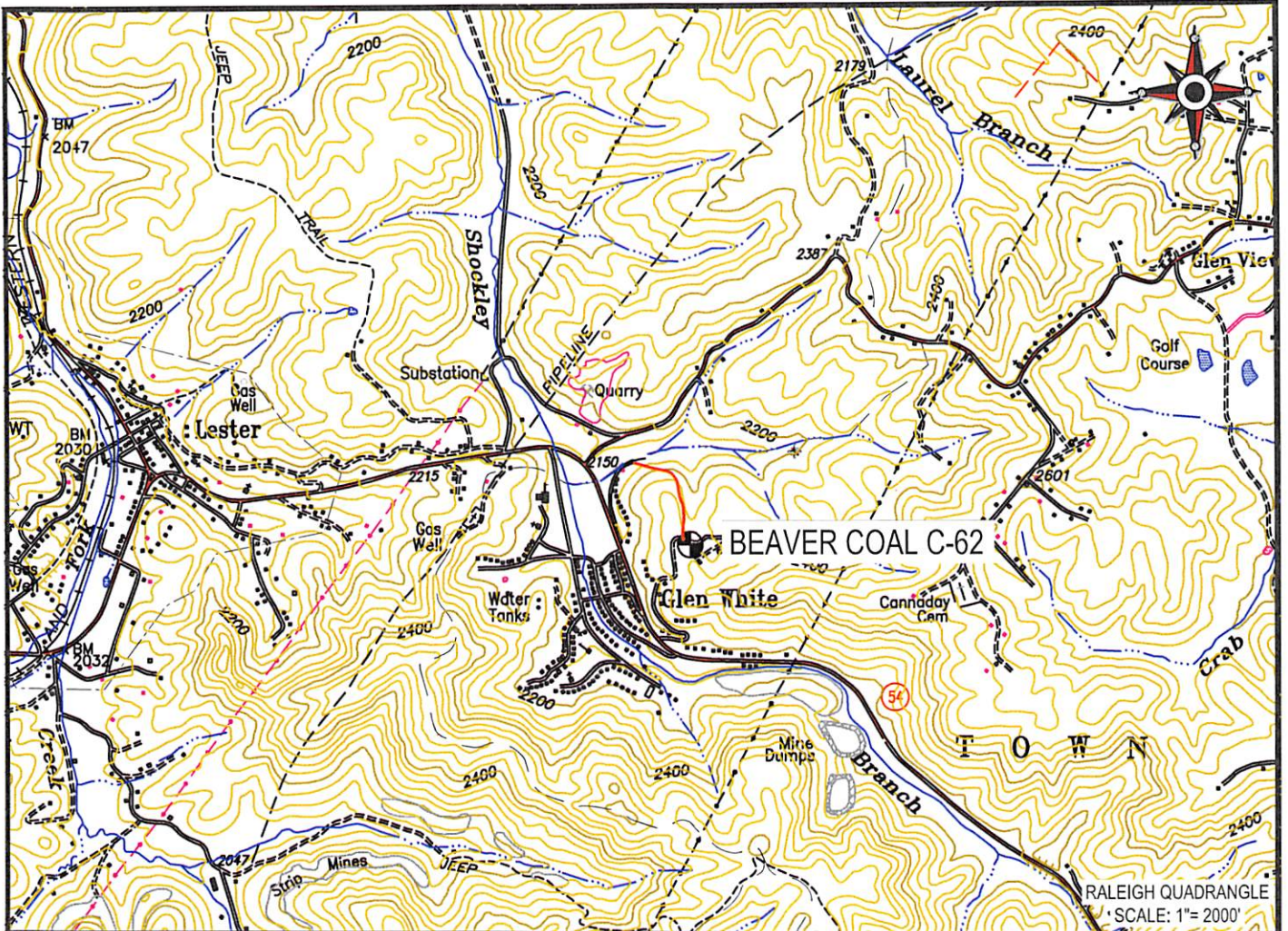
- PROPOSED ROAD -----
- EXISTING ROAD - - - - -
- STRAW BALES [Symbol]
- SILT FENCE [Symbol]
- BRUSH BARRIER [Symbol]
- TREE LINE [Symbol]
- ROCK RIP RAP [Symbol]
- CROSS DRAIN [Symbol]
- CULVERT [Symbol]
- DRILLING PIT [Symbol]
- ROAD DITCH [Symbol]
- GAS LINE [Symbol]
- FENCE LINE [Symbol]
- ROCK OUTCROP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

**DRIVING DIRECTIONS FOR BEAVER COAL C-62**

- 1.) FROM PINEVILLE, W.VA DRIVE NORTH ON STATE ROUTE 97 FOR 22.7 MILES± TO LESTER, WV.
- 2.) FROM LESTER, WV TURN RIGHT AND CONTINUE ON STATE ROUTE 97 AND 54 FOR APPROXIMATELY 1.2 MILES± TO WEST VIRGINIA STREET LOCATED ON THE LEFT-HAND SIDE OF THE ROAD.
- 3.) TURN RIGHT AND FOLLOW THE ROAD FOR APPROXIMATELY 0.2 MILES± TO THE BEGINNING OF THE EXISTING ACCESS ROAD.
- 4.) FROM THE AFOREMENTIONED SITE, FOLLOW THE EXISTING ROAD FOR APPROXIMATELY 0.2 MILES± TO THE EXISTING WELL SITE AS SHOWN ON THE "CONSTRUCTION AND RECLAMATION PLAN".

01/26/2018





 Cabot Oil & Gas Corporation

**BEAVER COAL C-62** JAN 16 2018  
LOCATION MAP

 **CUNNINGHAM**  
LAND SURVEYING & MAPPING SERVICES, LLC

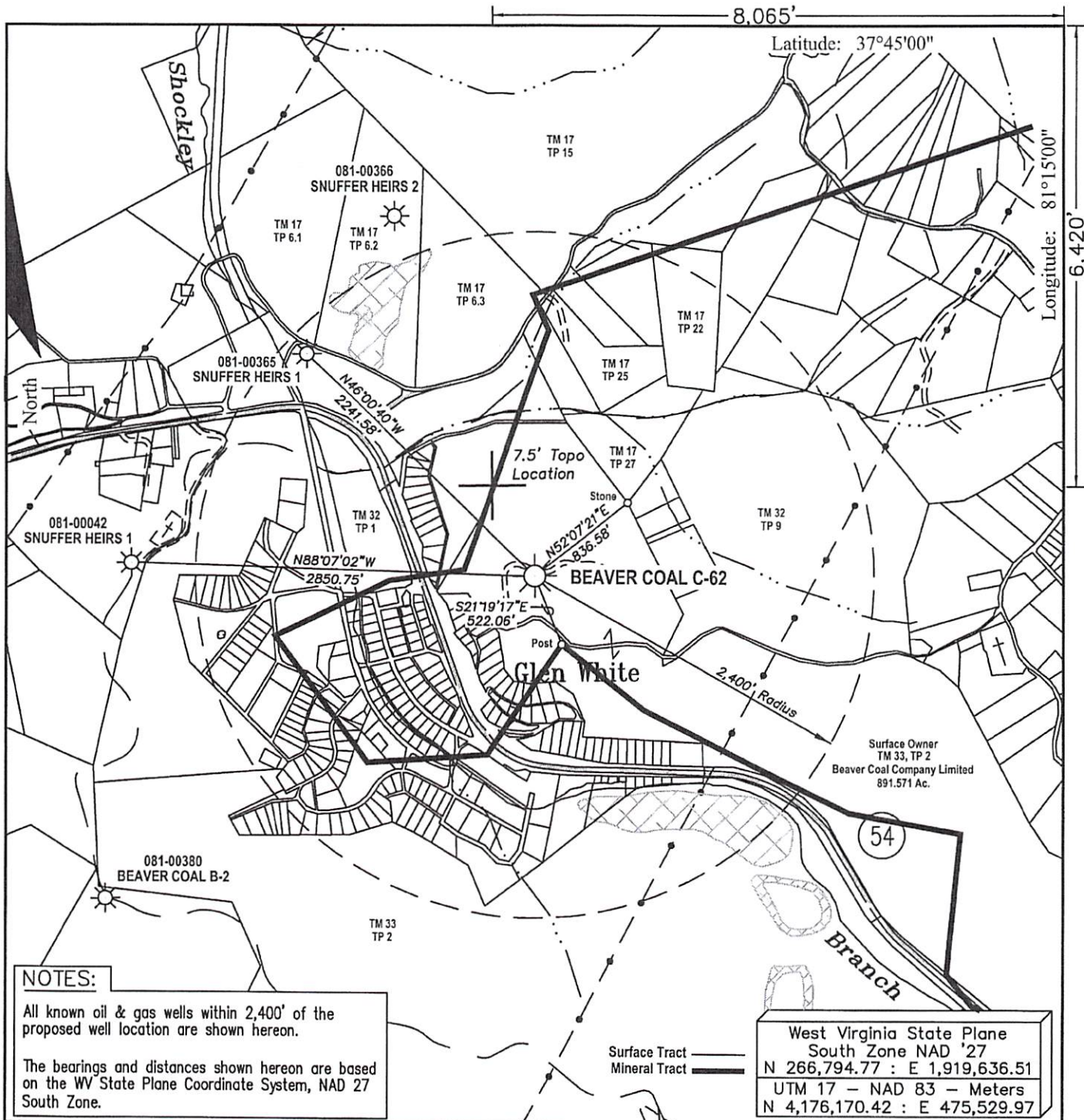
LOCATED ON THE WATERS OF SHOCKLEY BRANCH  
OF MILLER CAMP BRANCH  
TOWN DISTRICT, RALEIGH COUNTY, WV  
LESTER 7.5' QUADRANGLE

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

PROJECT NO. CABOT | DWG. BEAVER COAL C-62 LOC  
DATE: 12-07-17 | SCALE: AS NOTED | CHK'D BY: D.K.C.  
DRAWN BY: G. PERKINS | FILE: C:\PROJECT FOLDER\CABOT

WV Department of  
Protection  
01/26/2018





**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 266,794.77 : E 1,919,636.51  
 UTM 17 - NAD 83 - Meters  
 N 4,176,170.42 : E 475,529.97

FILE #: \_\_\_\_\_  
 DRAWING #: Beaver Coal C-62  
 SCALE: 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY: 1 : 2,500  
 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



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 WVDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304



DATE: December 7, 2017  
 OPERATOR'S WELL #: Beaver Coal C-62  
 API WELL #: 47 081 01369 P

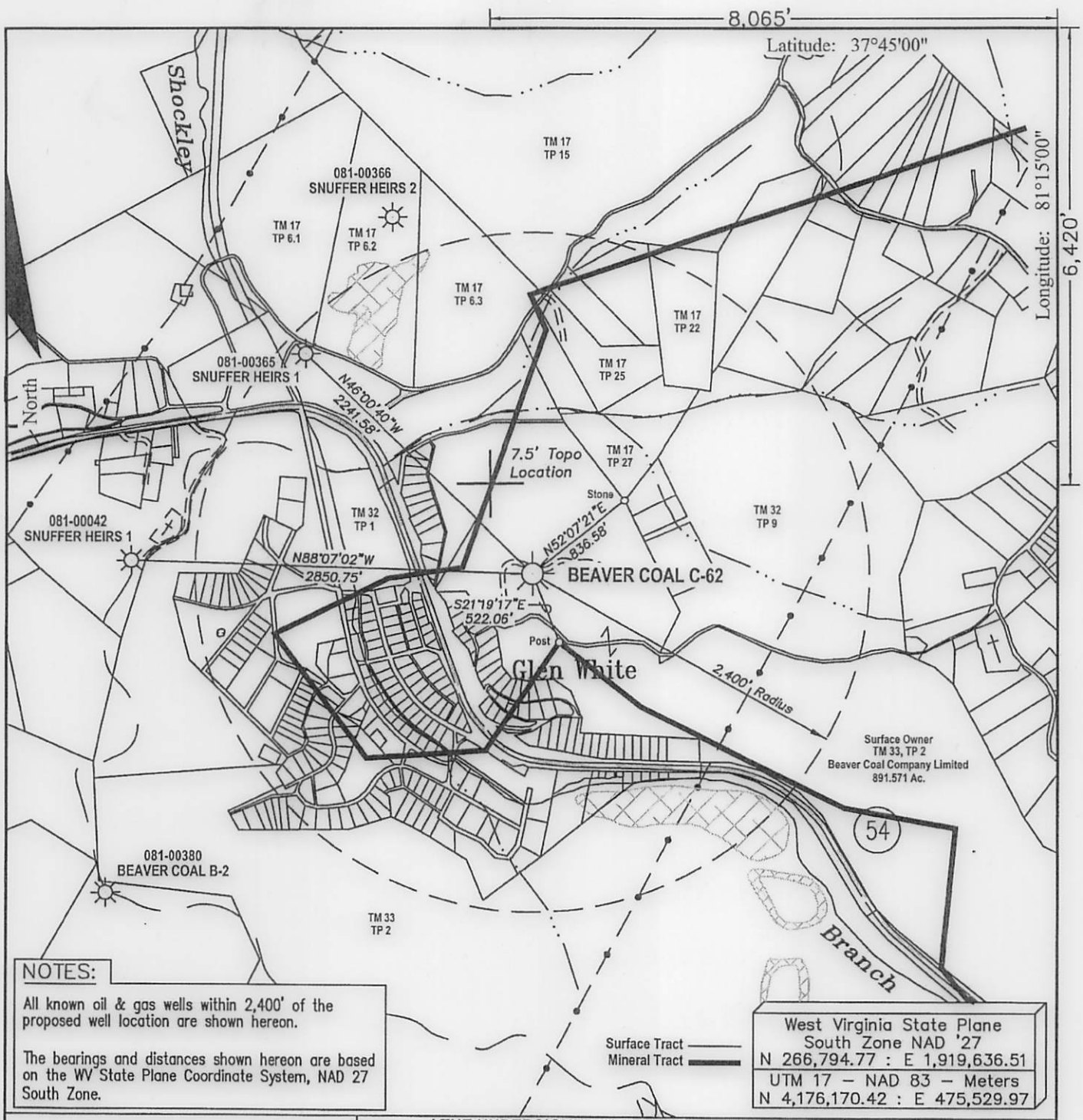
Well Type:  Oil  Waste Disposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow

STATE COUNTY PERMIT  
 JAN 16 2018  
 WV Department of Environmental Protection

WATERSHED: Shockley Branch of Millers Camp Branch ELEVATION: 2,292.22'  
 COUNTY/DISTRICT: Raleigh / Town QUADRANGLE: Lester  
 SURFACE OWNER: Beaver Coal Company, Limited ACREAGE: 891.571  
 OIL & GAS ROYALTY OWNER: Beaver Coal Company, Limited ACREAGE: 1,029.28  
 LEASE #: 47-0615 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. DESIGNATED AGENT Phillip Hill  
 Address 2000 Park Lane, Suite 300 Address 29 Starbuck Lane  
 City Pittsburgh State PA Zip Code 15275 City Saulsville State WV Zip Code 25876

01/26/2018





**NOTES:**

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

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West Virginia State Plane  
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DATE: December 7, 2017  
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Well Type:  Oil  Waste Disposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow

WATERSHED: Shockley Branch of Millers Camp Branch ELEVATION: 2,292.22'

COUNTY/DISTRICT: Raleigh / Town QUADRANGLE: Lester

SURFACE OWNER: Beaver Coal Company, Limited ACREAGE: 891.571

OIL & GAS ROYALTY OWNER: Beaver Coal Company, Limited ACREAGE: 1,029.28

LEASE #: 47-0615 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 29 Starbuck Lane  
 City Saulsville State WV Zip Code 25876

01/26/2018