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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

Monday, July 17, 2017  
WELL WORK PERMIT  
Vertical / Plugging

CABOT OIL & GAS CORPORATION  
2000 PARK LANE, SUITE 300

PITTSBURGH, PA 15275

Re: Permit approval for WATSON 1  
47-047-00864-00-00

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: WATSON 1  
Farm Name: POCAHONTAS LAND  
U.S. WELL NUMBER: 47-047-00864-00-00  
Vertical / Plugging  
Date Issued: 7/17/2017

Promoting a healthy environment.

07/21/2017

## 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.

4700864P

WW-4B  
Rev. 2/01

1) Date June 28, 2017  
2) Operator's  
Well No. Watson #1  
3) API Well No. 47-047 - 00864

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 1,709.27' Watershed Unnamed Tributary of Elkhorn Creek  
District Browns Creek County McDowell Quadrangle Welch

6) Well Operator Cabot Oil & Gas Corporation 7) Designated Agent Phillip Hill - Cabot Oil & Gas Corporation  
Address 2000 Park Lane, Suite 300 Address 900 Lee Street East, Suite 1500  
Pittsburgh, PA 15275 Charleston, WV 25301

8) Oil and Gas Inspector to be notified Name Brian Ferguson  
Address 708 Manor Drive  
Beckley, WV 25801  
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

RECEIVED  
Office of Oil and Gas  
JUL 3 2017  
WV Department of  
Environmental Protection

OK Jwm

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

Work order approved by inspector \_\_\_\_\_ Date \_\_\_\_\_

07/21/2017

**Watson #1**  
**API # 47 - 047 - 00864**  
**PLUGGING PROCEDURE**

**Current Configuration**

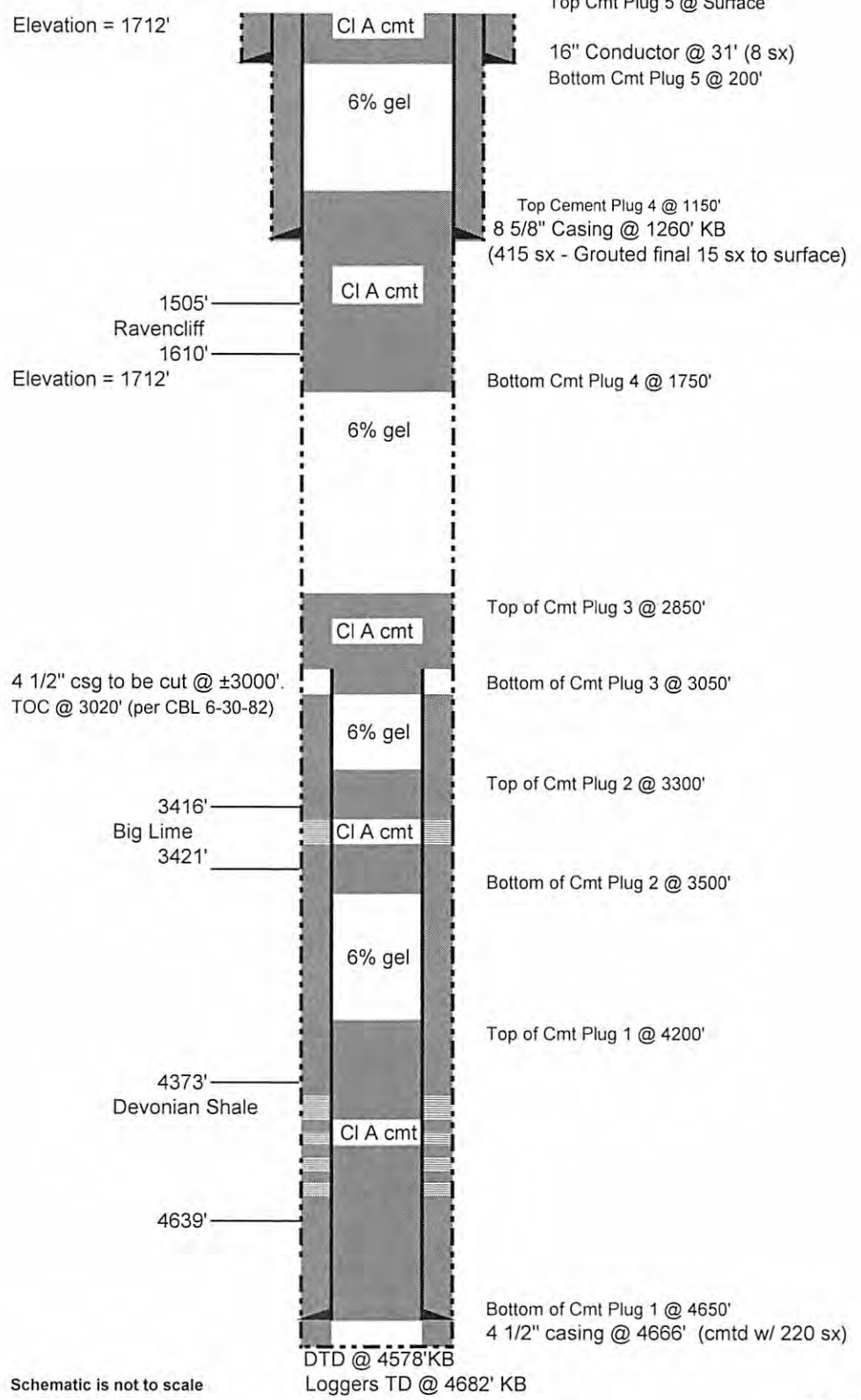
Elevation – 1712'  
 TD @ 4682' (Logger's TD)  
 8-5/8" @ 1260' GL (CTS, 415 sx)  
 4 1/2" casing @ 4666' GL (220sx, TOC @ 3020' per CBL 1982)  
 2 3/8" tubing @ 4359' GL (on Model F Packer @ 4358')  
 Fresh water @ none listed  
 Coal @ none listed  
 Ravencloft @ 1505' – 1610'  
 Big Lime Perforations @ 3416'-3421'  
 Devonian Shale Perforated Interval @ 4373' – 4639'

**PROCEDURE**

1. Contact Pineville 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 tank and stake down securely.
5. MIRU service rig and blow down well. Have vacuum truck available to catch any fluids circulated from well.
6. Unpack wellhead.
7. Latch on to 2-3/8" tubing. Release Model F packer.
8. RIH adding on work string to 4650'.
9. MIRU Cementing Company.
10. Pump 5 bbls 6% gel followed by 33 sks (7 bbls) of Class A cement for plug 1 from 4650' to 4200'.
11. Displace w/ 16 bbls of 6% Gel.
12. Pull tubing to +/- 4000', safely above cement top. WOC for a minimum of eight hours.
13. RIH w/ work string – tag TOC to confirm.
14. Pull tubing to 3500'.
15. Pump 3 bbls 6% gel followed by 15 sks (3 bbls) of Class A cement for plug 2 from 3500' to 3300'.
16. Displace w/ 13 bbls of 6% Gel.
17. Pull tubing to +/- 3100', safely above cement top. WOC for a minimum of eight hours.
18. RIH w/ work string – tag TOC to confirm. (Check w/ DEP Inspector, may be permitted to tag this 2<sup>nd</sup> plug only, bypass the tagging of the 1<sup>st</sup> plug)
19. TOOH with tubing.
20. Run freepoint on 4 1/2" casing, cut above freepoint, and POOH. (NOTE: Assume freepoint is 3000'; the cement top is shown @ 3020' per CBL 1982).
21. TIH with 2-3/8" work string to 3050'.
22. Pump 35 bbls 6% gel followed by 46 sks (10 bbls) of Class A cement for cement plug 3 from 3050' to 2850'. Cement must cover the 4 1/2" casing cut.
23. Displace w/ 11 bbls of 6% Gel.
24. Pull tubing to +/- 2650', safely above cement top. WOC for a minimum of eight hours.
25. RIH w/ work string – tag TOC to confirm.
26. PU tubing to 1750'.
27. Pump 40 bbls 6% gel followed by 172 sks (36 bbls) of Class A cement for cement plug 4 from 1750' to 1150'.

28. Displace w/ 4 ½ bbls of 6% Gel.
29. PU tubing to 200'.
30. Pump 57 sks (12 bbls) of Class A cement for cement plug 5 from 200' to surface.
31. TOOH with work string and lay down.
32. RDMO Cementing Company.
33. Place monument as required by law on top of well bore.
34. Reclaim well site.

**Watson #1**  
API 47-047-00864  
PROPOSED P&A CONFIGURATION



G.A. Shirey 6/16/17



IV-35  
(Rev 8-81)

Date August 10, 1982  
Operator's  
Well No. #1  
Farm Watson  
API No. 47 - 047 - 0864

**RECEIVED** State of West Virginia

Department of Mines  
Oil and Gas Division  
AUG 13 1982

OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES  
WELL OPERATOR'S REPORT  
OF  
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

B-1

WELL TYPE: Oil    / Gas XX / Liquid Injection    / Waste Disposal    /  
(If "Gas," Production    / Underground Storage    / Deep    / Shallow XX /)

LOCATION: Elevation: 1711.79 Watershed Tug Fork  
District: Browns Creek County McDowell Quadrangle Welch

COMPANY Cabot Oil & Gas Corporation  
ADDRESS P.O. Box 628, Chas., WV 25322  
DESIGNATED AGENT Richard P. Parsons  
ADDRESS P.O. Box 628, Chas., WV 25322  
SURFACE OWNER Pocahontas Land Corp.  
Attn: C. L. Helmick  
ADDRESS Box 1517, Bluefield, WV 24701  
MINERAL RIGHTS OWNER James E. Watson III  
et al Trustees  
Rm. 810, First National Bank  
ADDRESS Fairmont, WV 26554  
OIL AND GAS INSPECTOR FOR THIS WORK Arthur  
st. Clair ADDRESS P.O. Box 157  
Brenton, WV 24818

Casing Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20x16 Cond.	31	31	9 sks
13-10"			
9 5/8			
8 5/8	1260.95	1260.95	415 sks
7			
5 1/2			
4 1/2	4666.91	4666.91	220 sks
3			
2			
Liners used			

PERMIT ISSUED July 27, 1981  
DRILLING COMMENCED September 12, 1981  
DRILLING COMPLETED September 22, 1981  
IF APPLICABLE: PLUGGING OF DRY HOLE ON  
CONTINUOUS PROGRESSION FROM DRILLING OR  
REWORKING. VERBAL PERMISSION OBTAINED  
ON   

GEOLOGICAL TARGET FORMATION Berea Prop  
Depth 4345' feet  
Depth of completed well 4578 feet Rotary XX / Cable Tools     
Water strata depth: Fresh    feet; Salt    feet  
Coal seam depths:    Is coal being mined in the area? Yes

OPEN FLOW DATA  
Producing formation Devonian Sand Pay zone depth 4373'-4639' feet  
Gas: Initial open flow TSTM Mcf/d Oil: Initial open flow    Bbl/d  
Final open flow 423 Mcf/d Final open flow    Bbl/d  
Time of open flow between initial and final tests    hours  
Static rock pressure 690# psig (surface measurement) after 72 hours shut in  
(If applicable due to multiple completion--)  
Second producing formation Big Lime Pay zone depth 3416'-3421' feet  
Gas: Initial open flow 1.400 MMCF/D Oil: Initial open flow    Bbl/d  
Final open flow 13.00 MMCF/D Oil: Final open flow    Bbl/d  
Time of open flow between initial and final tests    hours  
Static rock pressure 839# psig (surface measurement) after    hours shut in

(Continue on reverse side)

FORM 1V-35  
(REVERSE)

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

7/2/82 - Perforated Devonian Sand from 4373'-4376' (4 holes), 4388'-4390' (3 holes), 4392'-4394' (3 holes), 4399'-4401' (3 holes), 4625'-4628' (4 holes), 4635'-4639' (5 holes). Broke down & balled out Devonian Sands w/1000 gals HCL 15%. Break down pressure Hydrostatic. Avg Treating Press 400#. Avg Inj Rate 6 BPM. Instant Shut In Press - Vacuum.

7/7/82 - Broke down & treated Devonian Sand w/90,000# 20/40 to 10#/gal. Avg Inj Rate 8 BPM + N<sub>2</sub>. Avg Treating Press 2000#. Total fluid 388 bbls. 950,000 SCF N<sub>2</sub>. Instant Shut In Press 1200#; after 15 min 1000#.

7/9/82 - Perforated Big Lime from 3416'-3421' (7 holes). Set Model F Packer @ 4358'.

7/10/82 - Broke down Big Lime w/500 gals of 15% HCL. Break down press 1000#. Treated w/8,000 gals gelled acid & 6,000 gals of treated H<sub>2</sub>O. Avg Treating Press 1200#. Avg Inj Rate 9 BPM + 200 SCF N<sub>2</sub>. Total fluid 371 bbls. Total Nitrogen 57,800 SCF. Instant Shut In Press: 300# after 15 min 300#.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Sand & Shale			0	210	
Sand			210	300	
Sand & Shale			300	795	
Shale			795	930	
Sand & Shale			930	1245	
Shale			1245	1505	
Ravencliff			1505	1610	
Shale			1610	1630	
Wis			1630	1680	1664' No gas
Sand & Shale			1680	1950	
Maxton			1950	1980	
Sand & Shale			1980	2415	
Maxton			2415	2430	
Sand & Shale			2430	2740	
Little Lime			2740	2840	
Pencil Cave			2840	2900	
Big Lime			2900	3630	3528' show of gas (1431 M)
Sand & Shale			3630	4230	
Unbury			4230	4250	
Corea			4250	4275	
Sand & Shale			4275	4350	
Sand			4350	4370	
Sand & Shale			4370	4420	
Sand & Shale			4420	4620	4456' show of gas (1220 M)
			4620	4645	
Sand & Shale			4645	4578	
TD	4682'				
TD	4578'				

(Attach separate sheets as necessary)

CABOT OIL & GAS CORPORATION

Well Operator

By: R. P. Law

District Drilling  
Superintendent

Date: August 10, 1982

Note: Regulation 2.02(i) provides as follows:  
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS WELLS DIVISION

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SEP 21 1981

OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES

INSPECTOR'S WELL REPORT

Permit No. 47-047-0864

Oil or Gas Well  
(KIND)

B-3

Company	Address	Farm	Well No.	District	County	CASING AND TUBING	USED IN DRILLING	LEFT IN WELL	PACKERS
						Size			Kind of Packer
<u>Robert Oil &amp; Gas</u>	<u>Charleston W.V.</u>	<u>James E. Watson III</u>	<u>Watson #1</u>	<u>Brown Creek</u>	<u>W. Va.</u>				
						16	<u>20' cemented</u>		
						13			
						10			Size of
						8 1/4	<u>1260</u>		
						6 3/4			Depth set
						5 3/16			
						3			Perf. top
						2			Perf. bottom
									Liners Used
									Perf. top
									Perf. bottom
Volume									CASING CEMENTED <u>8 7/8"</u> SIZE <u>1260</u> No. FT. _____ Date _____
Rock pressure									NAME OF SERVICE COMPANY <u>Halliburton</u>
Oil									COAL WAS ENCOUNTERED AT <u>120</u> FEET <u>120"</u> INCHES
Fresh water	<u>645</u>	feet				<u>645</u>	FEET <u>36</u> INCHES		FEET _____ INCHES
Salt water		feet					FEET _____ INCHES		FEET _____ INCHES

Drillers' Names \_\_\_\_\_

Remarks:

1260' 8 7/8" S110c, Insert Valve,  
Controlizers, Cement basket @ 84', GSB61  
Gel, 300 lbs 5/50 Pz, 100 lbs Neet w/3% coal  
did not circulate

9-15-81  
DATE

over

[Signature]  
DISTRICT WELL INSPECTOR

STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS WELLS DIVISION  
INSPECTOR'S PLUGGING REPORT

Permit No. \_\_\_\_\_ Well No. \_\_\_\_\_

COMPANY \_\_\_\_\_ ADDRESS \_\_\_\_\_

FARM \_\_\_\_\_ DISTRICT \_\_\_\_\_ COUNTY \_\_\_\_\_

Filling Material Used \_\_\_\_\_

Liner Location Amount Feet Location

PLUGS USED AND DEPTH PLACED BRIDGE Casing and Tubing

CEMENT-THICKNESS WOOD-SIZE LEAD CONSTRUCTION-LOCATION RECOVERED SIZE LOST

Cement came up above basket, but would not  
circulate. Set bridge with stone & mud, on  
top of cement and filled annulus from  
top.

*(Handwritten signature)*

Drillers' Names \_\_\_\_\_

Remarks \_\_\_\_\_

I hereby certify I visited the above well on \_\_\_\_\_  
DATE

DISTRICT WELL INSPECTOR

4700864 P

WW-4A  
Revised 6-07

1) Date: June 28, 2017  
2) Operator's Well Number  
Watson #1  
3) API Well No.: 47 - 047 - 00864

**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>Pocahontas Surface Interests, Inc.</u> ✓	Name <u>See Attached Exhibit "A"</u>
Address <u>Three Commercial Place</u>	Address _____
<u>Norfolk, VA 23510</u>	_____
(b) Name <u>John Derek Tyson H.P.T. Welch, LP</u> ✓	(b) Coal Owner(s) with Declaration
Address <u>P.O. Box 489 / (Rite Aid Corp.)</u>	Name <u>Pocahontas Land Corporation</u> ✓
<u>Welch, WV 24801/ PO Box 3165</u>	Address <u>800 Princeton Avenue, P.O. Box 1517</u>
<u>/ Harrisburg, PA 17105</u>	<u>Bluefield, WV 24701</u>
(c) Name <u>McDowell County Economic Development Authority, Inc.</u> ✓	Name _____
Address <u>92 McDowell Street</u>	Address _____
<u>Welch, WV 24801</u>	
6) Inspector <u>Brian Ferguson</u> ✓	(c) Coal Lessee with Declaration
Address <u>708 Manor Drive</u>	Name <u>See Attached Exhibit "A"</u>
<u>Beckley, WV 25801</u>	Address _____
Telephone <u>(304)-550-6265</u>	

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Office of Oil and Gas

JUL 3 2017

WV Department of  
Environmental Protection

**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 *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

Subscribed and sworn before me this 28th day of June, 2017  
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](mailto:depprivacyoffier@wv.gov).

07/21/2017

**Exhibit "A"**  
**Watson #1**  
**API #47-047-00864**

**COAL LESSEE(S)**

Southern Minerals, Inc. ✓  
P.O. Box 770  
Bluefield, WV 24701

Cannelton Industries ✓  
2000 Ashland Drive  
Ashland, KY 41101

Marianna Coal Company ✓  
P.O. Box 1084  
Bluefield, VA 24605

**COAL OPERATOR(S)**

McDowell Pocahontas Coal Co., Inc. ✓  
P.O. Box 1084  
Bluefield, VA 24605

San-West Coal Company, Inc. ✓  
P.O. Box 1030  
Bluefield, VA 24605

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Office of Oil and Gas

JUL 3 2017

WV Department of  
Environmental Protection

WW-9  
(2/15)

API Number 47 - 047 - 00864

Operator's Well No. Watson 1

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 Elkhorn Creek Quadrangle Welch

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 STORED IN TANKS AND DISPOSED OF PROPERLY, OFF-SITE.*

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

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Office of Oil and Gas

JUL 3 2017

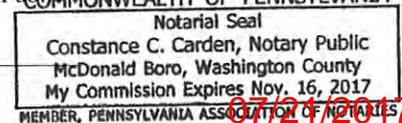
WV Department of  
Environmental Protection

Subscribed and sworn before me this 28th day of June, 2017

Constance C. Carden

Notary Public COMMONWEALTH OF PENNSYLVANIA

My commission expires 11/16/2017



**Cabot Oil & Gas Corporation**

Proposed Revegetation Treatment: Acres Disturbed 0.50 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.

Plan Approved by: \_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RECEIVED  
Office of Oil and Gas

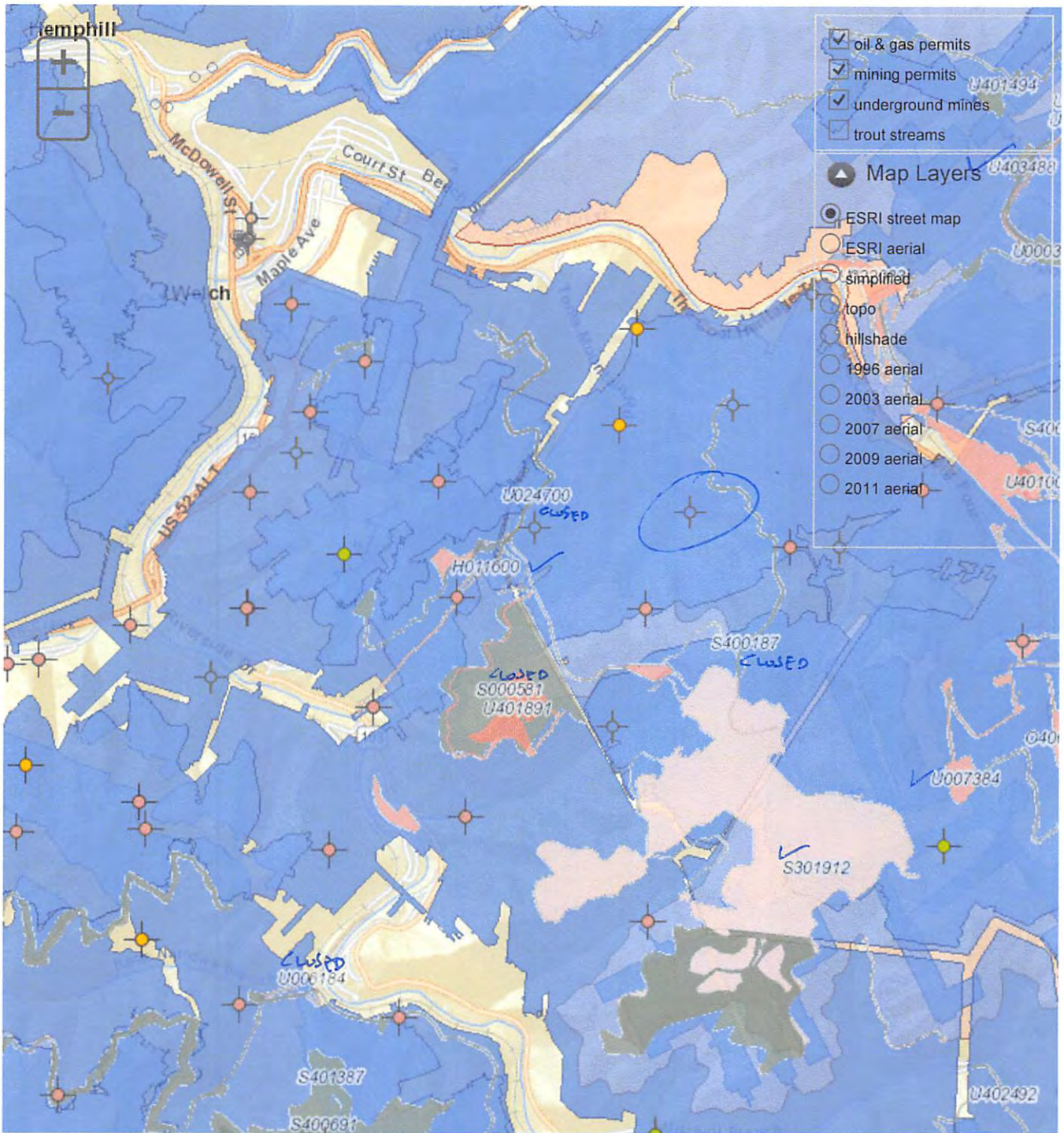
JUL 3 2017

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Field Reviewed? ( ) Yes ( ) No

WV Department of  
Environmental Protection



Measurement
Degrees
Measurement Result
_____

07/21/2017

**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



1-800-245-4848

**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 WATSON 1**

- 1.) FROM THE INTERSECTION OF VIRGINIA STREET WITH U.S. ROUTE 52, IN WELCH, DRIVE EAST ON U.S. ROUTE 52 FOR 300 FEET± TO BUFFALO HOLLOW ROAD.
- 2.) TURN RIGHT AND GO SOUTH ON BUFFALO HOLLOW ROAD FOR 0.1 MILE± TO THE BEGINNING OF THE EXISTING ACCESS ROAD LOCATED.
- 3.) FROM THE AFOREMENTIONED SITE, FOLLOW THE EXISTING BUFFALO HOLLOW ROAD FOR APPROXIMATELY 0.8 MILE± TO THE EXISTING WELL SITE AS SHOWN ON THE "CONSTRUCTION AND RECLAMATION PLAN".

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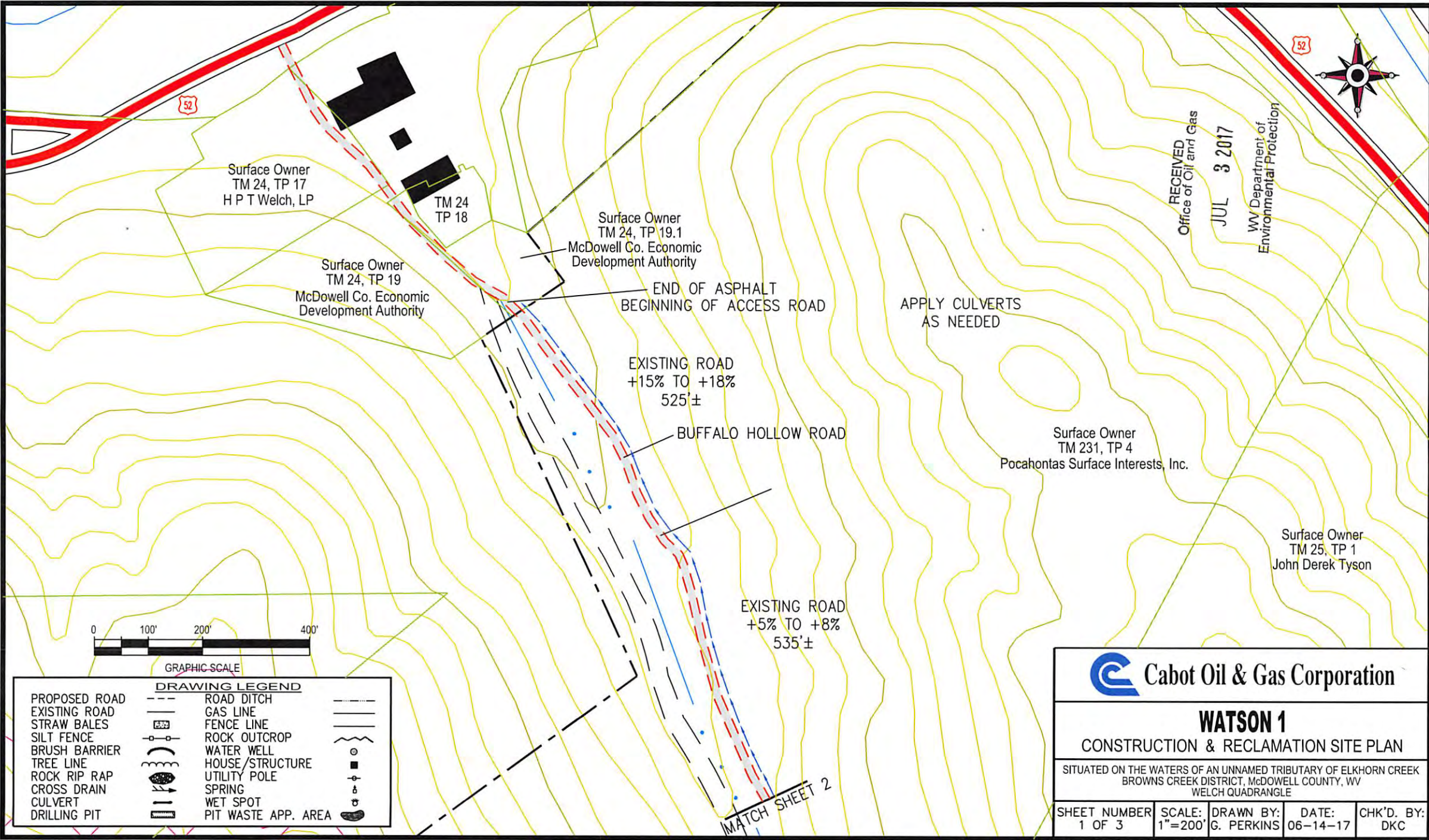
JUL 3 2017

WV Department of  
Environmental Protection

07/21/2017



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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**

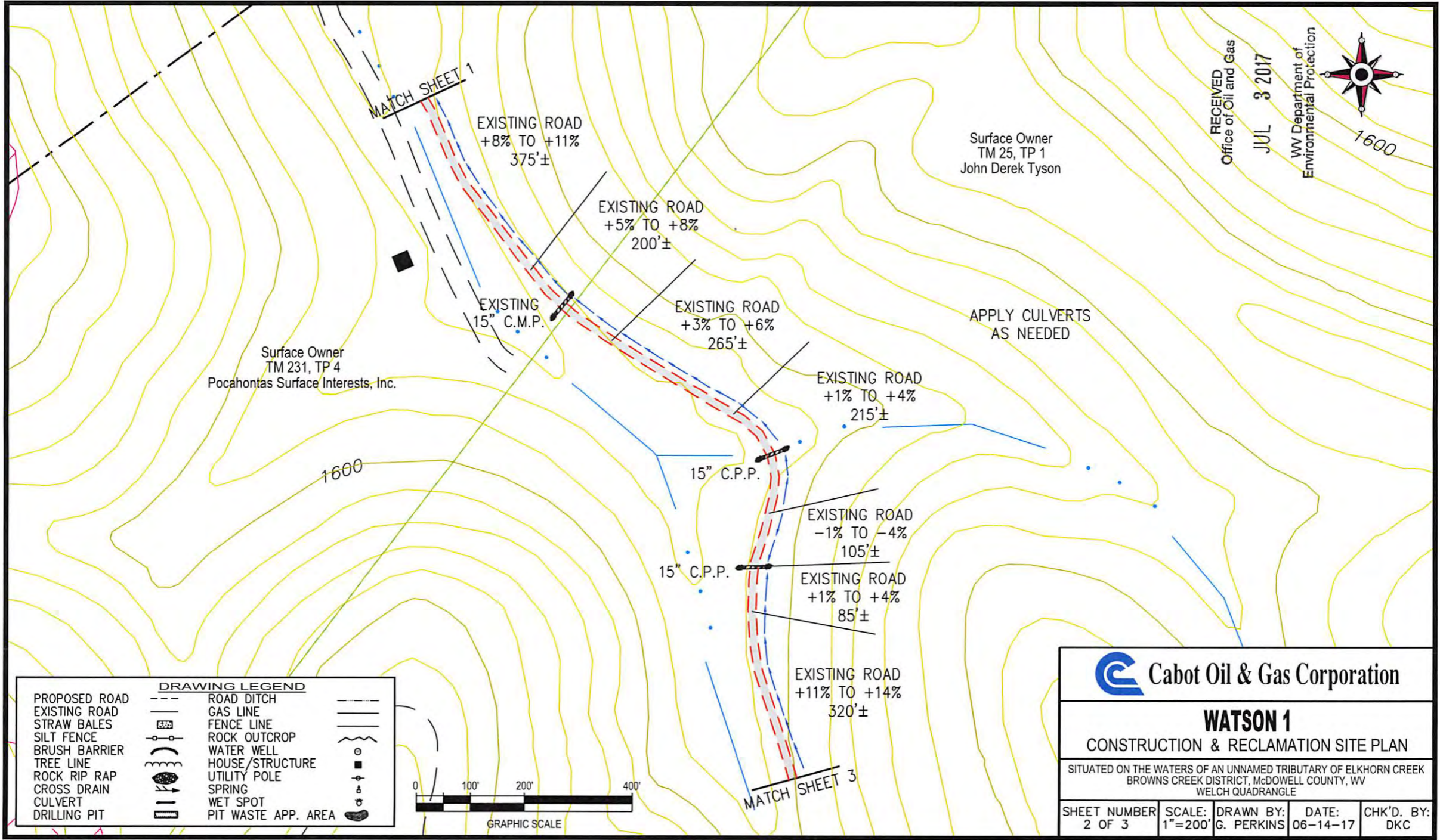
**WATSON 1**

**CONSTRUCTION & RECLAMATION SITE PLAN**

SITUATED ON THE WATERS OF AN UNNAMED TRIBUTARY OF ELKHORN CREEK  
BROWNS CREEK DISTRICT, McDOWELL COUNTY, WV  
WELCH QUADRANGLE

SHEET NUMBER 1 OF 3	SCALE: 1"=200'	DRAWN BY: G. PERKINS	DATE: 06-14-17	CHK'D. BY: DKC
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4700864P



Surface Owner  
TM 231, TP 4  
Pocahontas Surface Interests, Inc.

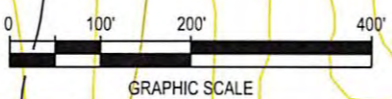
Surface Owner  
TM 25, TP 1  
John Derek Tyson

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JUL 3 2017  
WV Department of  
Environmental Protection  
1600

APPLY CULVERTS  
AS NEEDED

**DRAWING LEGEND**

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



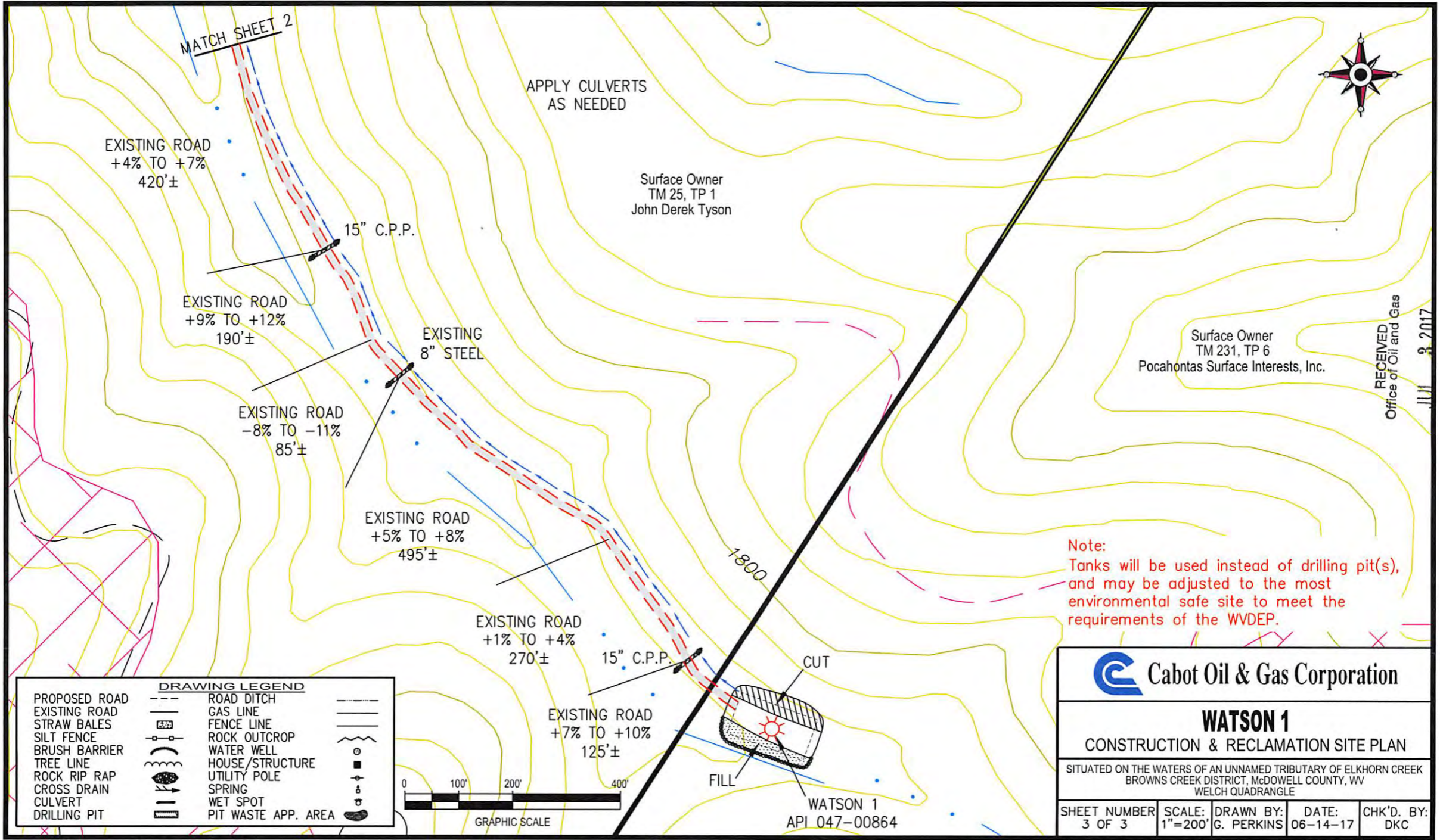
**Cabot Oil & Gas Corporation**

**WATSON 1**  
CONSTRUCTION & RECLAMATION SITE PLAN

SITUATED ON THE WATERS OF AN UNNAMED TRIBUTARY OF ELKHORN CREEK  
BROWNS CREEK DISTRICT, McDOWELL COUNTY, WV  
WELCH QUADRANGLE

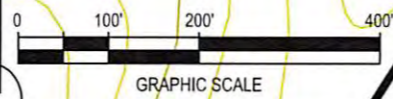
SHEET NUMBER 2 OF 3	SCALE: 1"=200'	DRAWN BY: G. PERKINS	DATE: 06-14-17	CHK'D. BY: DKC
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4700864P



**DRAWING LEGEND**

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



**Cabot Oil & Gas Corporation**

**WATSON 1**

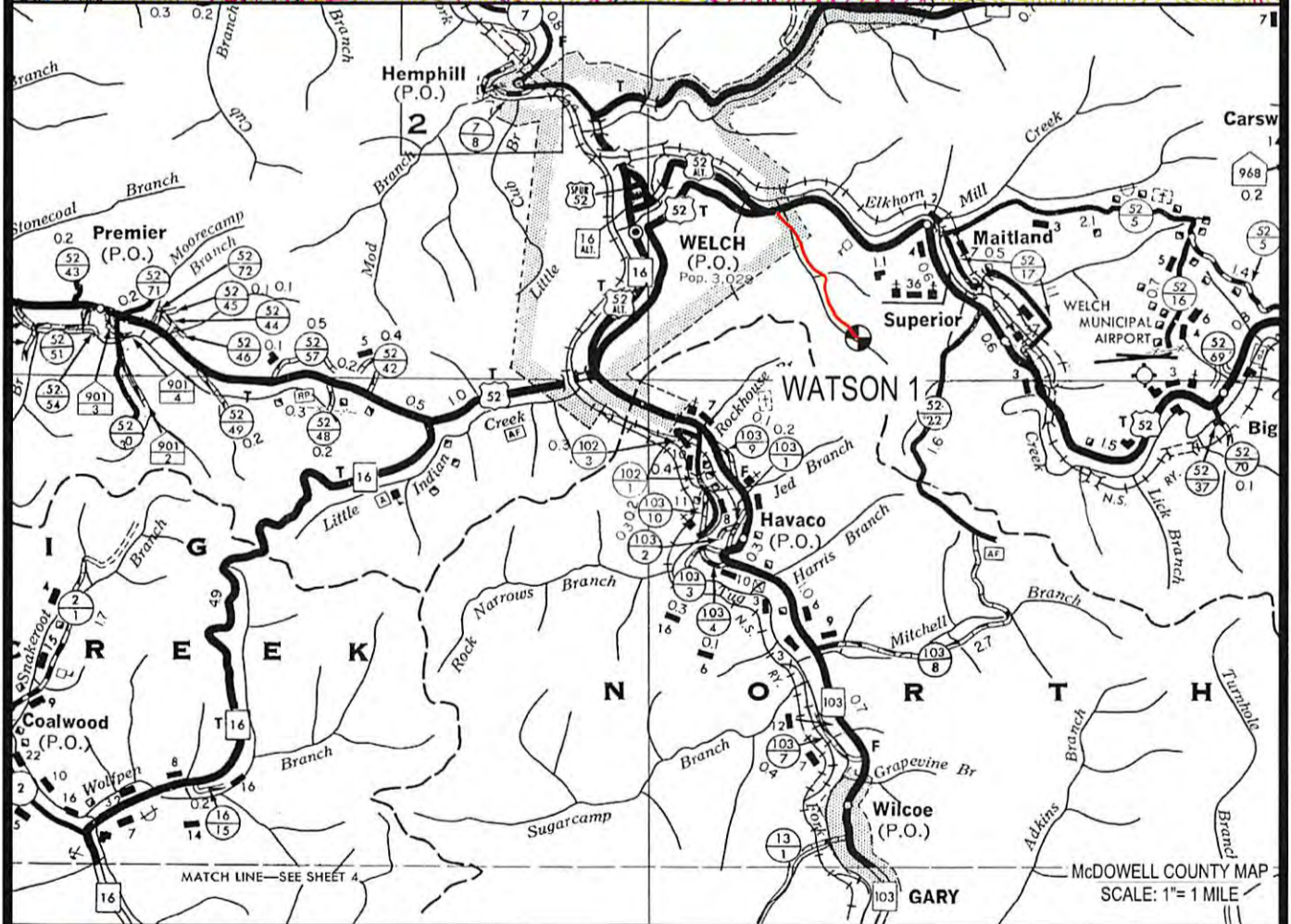
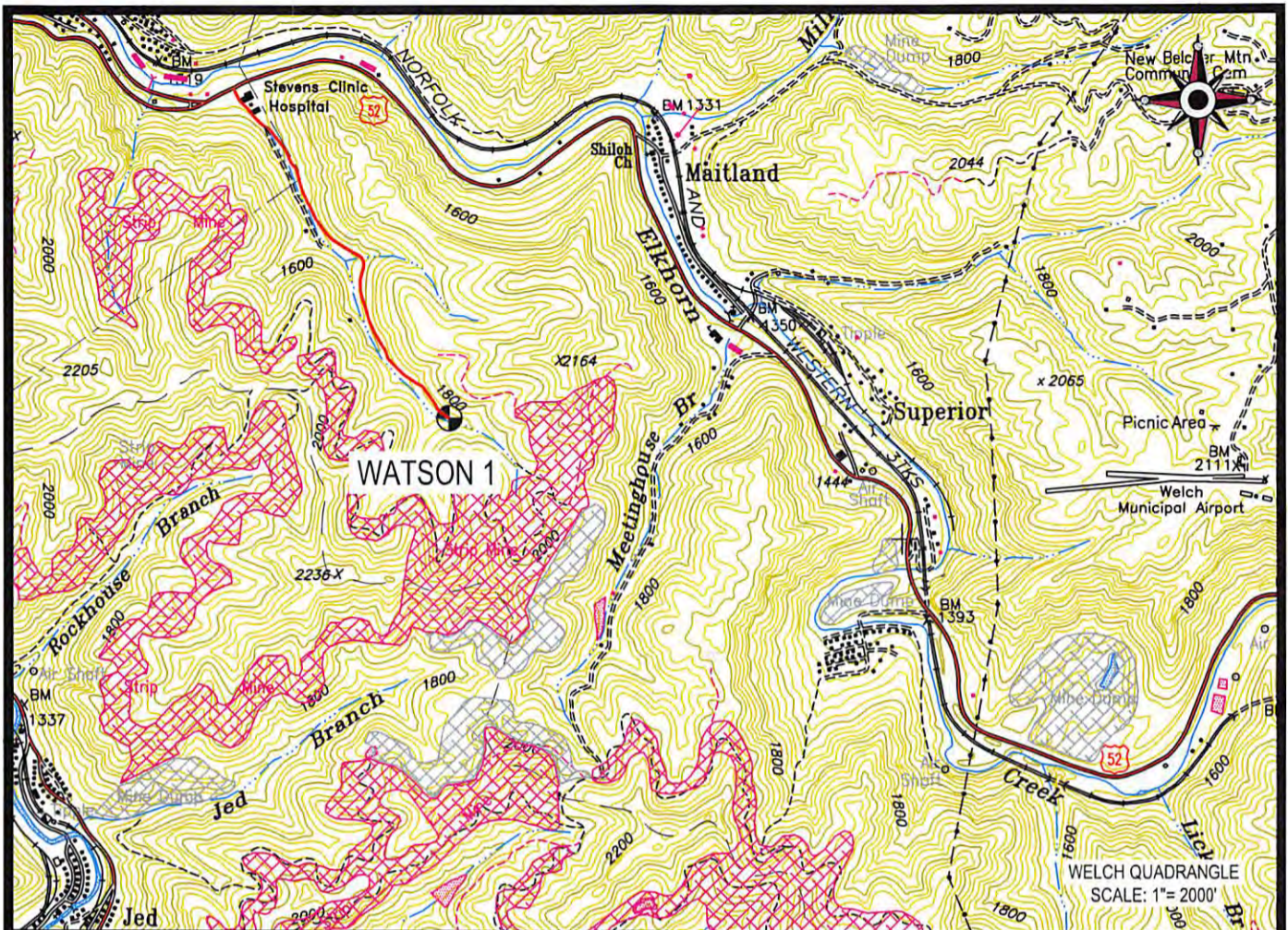
CONSTRUCTION & RECLAMATION SITE PLAN

SITUATED ON THE WATERS OF AN UNNAMED TRIBUTARY OF ELKHORN CREEK  
BROWNS CREEK DISTRICT, McDOWELL COUNTY, WV  
WELCH QUADRANGLE

SHEET NUMBER 3 OF 3	SCALE: 1"=200'	DRAWN BY: G. PERKINS	DATE: 06-14-17	CHK'D. BY: DKC
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JUL 3 2017

WV Department of  
Environmental Protection



 Cabot Oil & Gas Corporation

**WATSON 1**  
LOCATION MAP

LOCATED ON THE WATERS OF AN UNNAMED TRIBUTARY OF ELKHORN CREEK  
BROWNS CREEK DISTRICT, McDOWELL COUNTY, WV  
WELCH QUADRANGLE

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

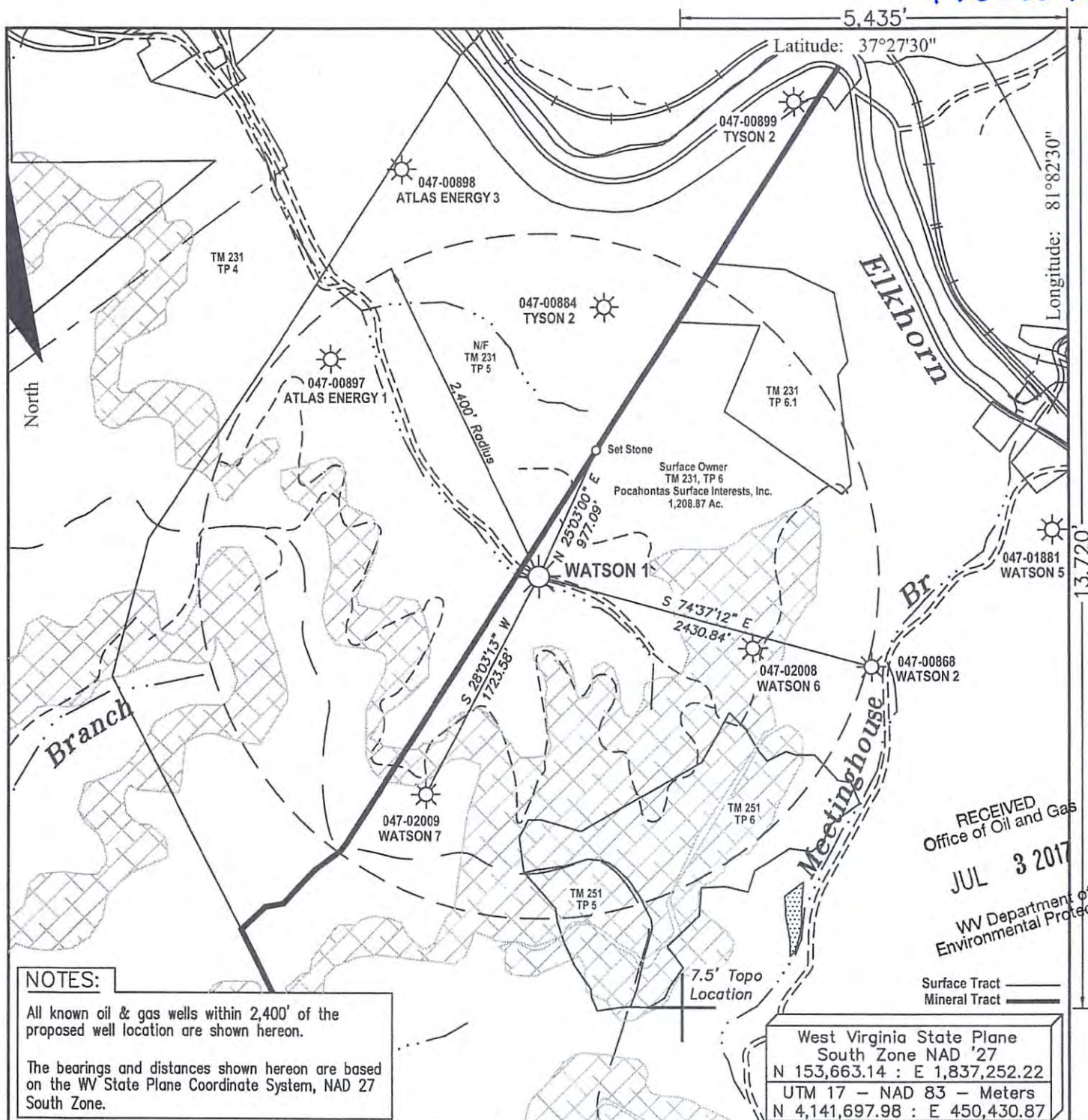
PROJECT NO. CABOT	DWG. NO. WATSON 1 LOC.DWG
DATE: 06-13-17	SCALE: AS NOTED
CHK'D BY: D.K.C.	
DRAWN BY: G. PERKINS	FILE: C:\PROJECT FOLDER\CABOT

RECEIVED  
Office of Oil and Gas

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

JUL 3 2017

4700864P



FILE #:

DRAWING #: Watson 1 ww6

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 ENVIRONMENTAL 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: June 13, 2017

OPERATOR'S WELL #: Watson 1

API WELL #: 47 047 00864 P  
STATE COUNTY PERMIT

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

WATERSHED: Unnamed Tributary of Elkhorn Creek ELEVATION: 1,709.27'

COUNTY/DISTRICT: McDowell / Browns Creek QUADRANGLE: Welch

SURFACE OWNER: Pocahontas Surface Interests, Inc. ACREAGE: 1,206.71

OIL & GAS ROYALTY OWNER: James E. Watson, et al, Trustees ACREAGE: 1,982.73

LEASE #: 47-7003-3 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 900 Lee Street, Suite 1500  
City Pittsburgh State PA Zip Code 15275 City Charleston State WV Zip Code 25301

07/21/2017

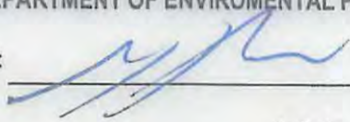


**NOTES:**  
 All known oil & gas wells within 2,400' of the proposed well location are shown hereon.  
 The bearings and distances shown hereon are based on the WV State Plane Coordinate System, NAD 27 South Zone.

West Virginia State Plane  
 South Zone NAD '27  
 N 153,663.14 : E 1,837,252.22  
 UTM 17 - NAD 83 - Meters  
 N 4,141,697.98 : E 450,430.87

FILE #:  
 DRAWING #: Watson 1 ww6  
 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:   
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(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304



DATE: June 13, 2017  
 OPERATOR'S WELL #: Watson 1  
 API WELL #: 47 047 00864 P  
 STATE COUNTY PERMIT

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

WATERSHED: Unnamed Tributary of Elkhorn Creek ELEVATION: 1,709.27'  
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 LEASE #: 47-7003-3 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 900 Lee Street, Suite 1500  
 City Pittsburgh State PA Zip Code 15275 City Charleston State WV Zip Code 25301