

west virginia department of environmental protection

Office of Oil and Gas 601 57th Street SE Charleston, WV 25304 (304) 926-0450 (304) 926-0452 fax Earl Ray Tomblin, Governor Randy C. Huffman, Cabinet Secretary www.dep.wv.gov

PERMIT MODIFICATION APPROVAL

October 01, 2015

EQT PRODUCTION COMPANY 120 PROFESSIONAL PLACE BRIDGEPORT, WV 26330

Re: Permit Modification Approval for API Number 8510195, Well #: 514082

Extend Lateral

Oil and Gas Operator:

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely, Breauer For

Gene Smith

Assistant Chief of Permitting

Office of Oil and Gas



September 1, 2015

Mr. Gene Smith West Virginia Department of Environmental Protection Office of Oil and Gas 601 57th Street SE Charleston, WV 25304

Re: Modification of 47-085-10195

Dear Mr. Smith,

Enclosed is an updated WW-6B, schematics, WW-6A1, rec plan and mylar plat, signed by the inspector. EQT would like to revise the length of the lateral. The top hole has not changed.

If you have any questions, please do not hesitate to contact me at (304) 848-0076.

Sincerely,

Vicki Roark

Permitting Supervisor-WV

Enc.

ou Douglas Newton

RECEIVED Office of Oil and Gas SEP 1 0 2015 WV Department of Environmental Protection

*Joos Jos Mod 2

API NO.	47		085	-	10195
DPERATO	RWE	LL NO	i		514082
Well Par	d Nar	ne.			OVEIDE

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

1) Well Operator: EQT Produc	tion Company		306686	085	4	526	
			Operator ID	County	District	Quadrangle	
2) Operator's Well Number:		514082		Well Pad Nar	ne	OXF122	
3) Farm Name/Surface Owner :	Richa	ard L & Sher	yl A Ray	_ Public Road A	Access:	Co Rt 22/3	
4) Elevation, current ground:	1,111.0	Elev	ation, proposed p	oost-construction	1,11	1.0	
5) Well Type: (a) Gas	Oil	u	nderground Stor	age			
Other							
(b) If Gas:	Shallow		Deep				
	Horizontal			47	0851	Mic	لما
6) Existing Pad? Yes or No:	ves				0851	0100	9
_					11	135	4
Proposed Target Formation(s),	Depth(s), Antic	ipated Thick	nesses and Ass	ociated Pressure	e(s):	1000	
Target formation is Marcellus at	a depth of 649	4 with the antic	ipated thickness to b	e 54 feet and anti	cipated target pr	essure of 2190	PSI
0.5		Тор о	f Marcellus: 646	1			
8) Proposed Total Vertical Depth:	_			6494			
9) Formation at Total Vertical Dep				Marcellus			
10) Proposed Total Measured Dep				19619			
11) Proposed Horizontal Leg Leng				12,227			
12) Approximate Fresh Water Stra				236			
13) Method to Determine Fresh W				By offset w	rells		
14) Approximate Saltwater Depths				N/A			
15) Approximate Coal Seam Depti		73.3		929			
16) Approximate Depth to Possible				1	None re	ported	
17)Does proposed well location co	intain coal sean	ns directly o	The National Control of the Control				
adjacent to an active mine?			Ye	£	No x		
(a) If Yes, provide Mine Info:							
	Seam:						
	Owner:						

Page 1 of 3

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Office of Oil and Gas

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WV Experiment of Environmental Protection

	WW	-	6B
Ī	(4/15)	

API NO. 47 - 085 - 10195

OPERATOR WELL NO. 514082

Well Pad Name: OXF122

CASING AND TUBING PROGRAM

18)

TYPE	Size (in)	<u>New</u> or <u>Used</u>	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill- up (Cu.Ft.)
Conductor	20	New	MC-50	81	40	40	38 C.T.S.
Fresh Water	13 3/8	New	MC-50	54	1,056	1,056	915 C.T.S.
Coal	-	1	-	-	-	-	_
Intermediate	9 5/8	New	MC-50	40	2,940	2,940	1,146 C.T.S.
Production	5 1/2	New	P-110	20	19,619	19,619	See Note 1
Tubing	2 3/8		J-55	4.6			May not be run, if run will be set
Liners							

MAC JOLS

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	1 Cement Type 5 Mod 3	Cement Yield (cu. ft./k)
Conductor	20	24	0.375	-	18	Construction	1.18
Fresh Water	13 3/8	17 1/2	0.38	2,480	2,184	* See Note 2	1.21
Coal				/			
Intermediate	9 5/8	12 3/8	0.395	3,590	3,160	* See Note 2	1.21
Production	5 1/2	8 1/2	0.361	12,640	10,112		1.27/1.86
Tubing					,		
Liners							

Packers

Kind:	N/A	
Sizes:	N/A	
Depths Set:	N/A	

Note 1: EQT plans to bring the TOC on the production casing cement job 1,000' above kick off point, which is at least 500' above the shallowest production zone, to avoid communication.

Note 2: Reference Variance 2014-17. (Attached)

Page 2 of 3



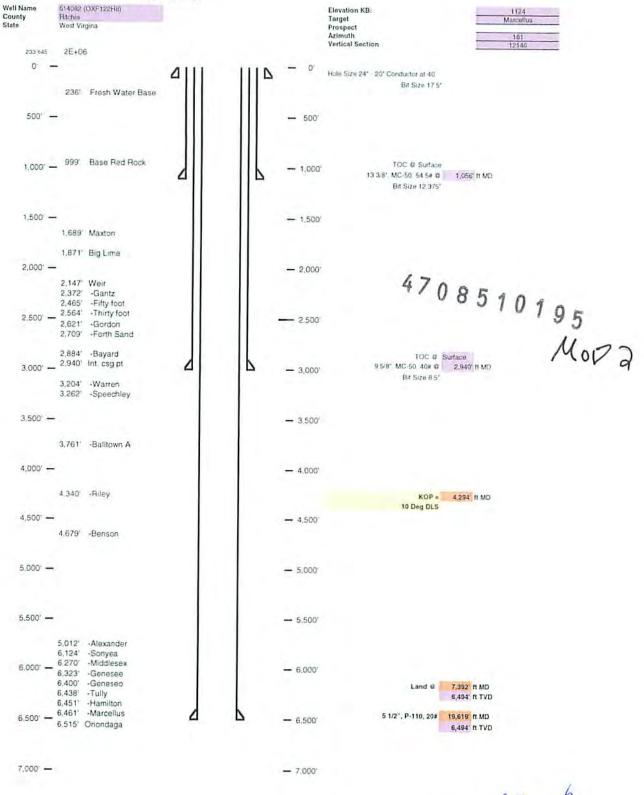
WW - 6B	APINO. 47 - 085	- 10195
(10/14)	OPERATOR WELL NO.	514082
	Well Pad Name:	OXF122
19) Describe proposed well work, including the drilling and plugging back of any pi	flot hole:	MAG
Drill and complete a new horizontal well in the Marcellus formation. The vertical drill to go down to	o an approximate depth of 4294'.	9-4-201
Then kick off the horizontal leg into the formation using a slick water frac.		
20) Describe fracturing/stimulating methods in detail, including anticipated max pre	essure and max rate:	
Hydraulic fracturing is completed in accordance with state regulations using water recycled from previo	usly fractured wells and obtained from	
freshwater sources. This water is mixed with sand and a small percentage (less than 0.3%) of chemical gelling agent, gell breaker, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "	als (including 15% Hydrochloric acid.	
anticipated internal casing pressure is expected to average approximately 8500 psi, maximum anticipat	ed treating rates are expected to average	
approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 200,000 bar vary from 100 mesh to 20/40 mesh. Average approximately 200,000 pounds of sand per stage.	rrels of water per stage. Sand sizes	
vary from 100 mesh to 20/40 mesh. Average approximately 200,000 pounds of sand per stage.		
21) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres):	29.51	
	20.01	
Area to be disturbed for well pad only, less access road (acres): Describe centralizer placement for each casing string.	18.14	
 Surface: Bow spring centralizers – One at the shoe and one spaced every 500'. 	085	
 Intermediate: Bow spring centralizers One cent at the shoe and one spaced ever Production: One spaced every 1000' from KOP to Int csg shoe 		
Troduction. One spaced every 1000 from NOF to fix csg snoe	7	0
		5 11000
24) Describe all cement additives associated with each cement type. Surface	(Type 1 Cement): 0-3% Calcium Chloride	0 1000
Used to speed the setting of cement slurries.	(Type 1 Cement): 0-3% Calcium Chloride	95 Mod 2
Used to speed the setting of cement slurries. 0.4% flake. Loss Circulation Material (LCM) is used to combat the loss of the cement slurry	to a thief zone	
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WW - 6B

'Note: Attach additional sheets as needed.

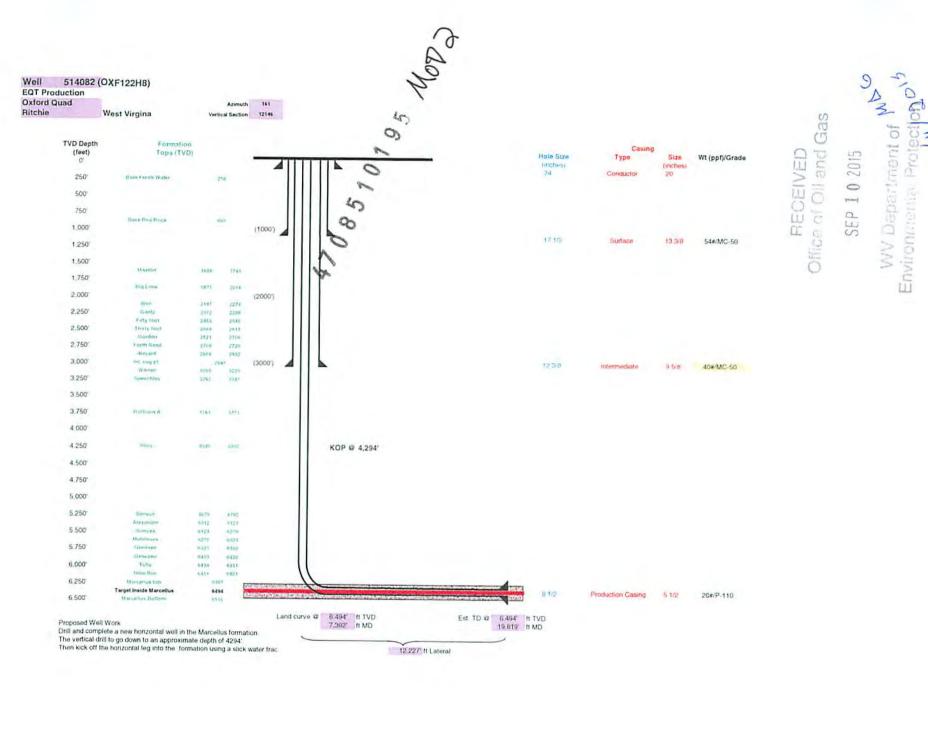
WV Department of Environment of Pag/02/2015

Well Schematic EQT Production



Office of Oil and Was

WV Department of Environment = Protection 10/02/2015



Lease Name or

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE Chapter 22, Article 6A, Section 5(a)(5) IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application. I depose and say that I am the person who signed the Notice and Application for the Applicant, and that -

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

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aims Mora

Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page	
105953		Oranico, technico, etc.	min pd 1/8th	DOOR/Lage	_
	William Adams, et ux	The Philadelphia Company of We	LB29/244		
	The Philadelphia Company of West Virginia	Pittsburgh and West Virginia Gas	-	LB55/362	
	Pittsburgh and West Virginia Gas Company	Equitable Gas Company		LB126/473	
	Equitable Gas Company	Equitrans, Inc.		LB201/253	
	Equitrans, Inc.	Equitable Production-Eastern Sta	tes, Inc.	LB234/830	
	Equitable Production-Eastern States, Inc.	Equitable Production Company		DB281/346	Doddridge
	Equitable Production Company	EQT Production Company		DB281/346	Doddridge
987352	Michael Marion McKenzie	EQT Production Company	min pd 1/8th	l Bosovogo	
	MICHAEL MIGHOR MICHAELE	EQT Floodcoon Company		LB252/989	
<u>987351</u>			min pd 1/8th		
	Jenny Catherine Burbank	EQT Production Company		LB253/576	
	Charles T. Reed	EQT Production Company		LB254/698	
	James L. Reed	EQT Production Company	LB254/701		
	Michael Marion McKenzie	EQT Production Company		LB255/717	
	Donald E. Reed	EQT Production Company		LB256/355	
	Jerry R. Reed	EQT Production Company		LB257/514	
1.1893533367			min pd 1/8th		
	W. M. Lipscomb, et ux	Carnegie Natural Gas Company	·	LB46/187	
	Carnegie Natural Gas Company Carnegie Production Equitable Resources Inc. Equitable Production Co.	Carnegie Production Company Equitable Resources Inc. Equitable Production Co. EQT Production Company		LB228/859 See attached DB274/471 DB281/346	Doddridge
<u>710486</u>	Lewis Garrison, et ux Carnegie Natural Gas Company Carnegie Production Company/USX	Carnegie Natural Gas Company Carnegie Production Company Equitable Resources Inc.		LB42/4 LB228/859	
	Equitable Resources Inc.	Equitable Production Co.		See attached DB274/471	
	Equitable Production Co.	EQT Production Company		DB281/346	Doddridge
	•			225011040	Doddinge

Upon information and belief, Operator's lease and/or other real property rights permit it to conduct drilling operations for the subject well in the location shown on the plat, including under any public roads that the well lateral crosses.

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SEP 102.5

Acknowledgement of Possible Permitting/Approval In Addition to the Office of Oil and Gas

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator:

EQT Production Company

By: Its:

Permitting Supervisor

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PURCHASE AND SALE AGREEMENT

FURCHASE AND SALE AGREEMENT, dated as of May 27, 1999 (this "Agreement"), by and between USX CORPORATION, a Delaware conporation, ("USX") and EQUITABLE RESOURCES, INC., a Permayivania corporation (hereinafter refused to as "Buyer").

WHEREAS, USX owns directly or indirectly all of the outstanding capital stock or other evidence of an equity interest of the following companies (each a "Carnegie Company" and collectively the "Carnegie Companies"), which are involved in one or more of the production, gathering, transportation, treatment, distribution and sale of natural gas: (i) Carnegie Natural Gas Company, a Pennsylvania comparation, ("Carnegie"), (ii) Carnegie Interestate Pipeline Company, a Delaware comparation, ("CIPCO"), (iii) Carnegie Production Company, a Pennsylvania corporation, ("CPC"), (iv) Carnegie Natural Gas Sales, Inc., a Delaware corporation, ("CNGS") and (v) Carnegie Gas Storage, ILC, a Delaware limited liability company, ("CGS"); and

WHEREAS, USX desires to sell to Buyer and Buyer desires either for itself and/or one or more designated subsidiaries to purchase from USX one hundred percent (100%) of the capital stock and other evidence of equity interest in the Carnegie Companies;

NOW, THEREFORE, for and in consideration of the premises and the representations, warranties, covenants and agreements herein set forth and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound, agree as follows:

· ARTICLE I DEFINITIONS ·

Unless otherwise specifically stated in the text of this Agreement, the following terms shall have the following meanings:

Section 1.1 The "1935 Act" shall mean the Public Utility Holding Company Act of 1935, as amended.

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WV Dept. of Environmental Protection

Section 12.6 Names, Trademarks, Etc., USX and its Affiliates will discontinue use of the Carnegie and Apollo Names as promptly as practicable after the Closing.

IN WITNESS WHEREOF, the undersigned have cause this Agreement to be subscribed by their respective representatives duly authorized as of the date first above written.

USX CORPORATION

Typed Name: v. G. Title: Vice Chairpe

- Marathon Group

EQUITABLE RESOURCES, INC.

Title: Senter Vice President and Chief Financial Officer

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Office of Oil and Gas And Dept. of Environmental Protection

