

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47 - 107 - 01751 - Rev. County Wood District Steele
Quad Rockport Pad Name Cox Field/Pool Name Rockport
Farm name Cox, Sandra Well Number 12591
Operator (as registered with the OOG) Columbia Gas Transmission, LLC
Address 1700 MacCorkle Ave SE City Charleston State WV Zip 25325-1273

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 39.0728449 / 4,325,002.1 Easting -81.5454205 / 452,8819.0
Landing Point of Curve Northing N/A - not horizontal Easting N/A - not horizontal
Bottom Hole Northing 39.073458 / 4,325,072.1 Easting -81.549574 / 452,460.6

Elevation (ft) 1036 GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other Storage
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Intermediate: fresh water base w/ polymer + KCl + starch + atapulgit
Production: fresh water base w/ polymer + starch

Date permit issued 7/29/14 Date drilling commenced 12/28/14 Date drilling ceased 1/17/15
Date completion activities began 2/26/15 Date completion activities ceased 3/12/15
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft none encountered Open mine(s) (Y/N) depths _____
Salt water depth(s) ft 1345', 1905 - 2250' (estimated) Void(s) encountered (Y/N) depths _____
Coal depth(s) ft none encountered Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) N

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N
Request # 21 2015
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JUL 21 2015

Reviewed by:
JK
8/24/10/23/2015

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CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	24"	20"	44' GL	New	B-35 / 59 ppf	none	Y
Surface	17.5"	13.375"	454' KB	New	H-40 / 48 ppf	none	Y
Coal							
Intermediate 1	12.25	9.625"	2314' KB	New	J-55 / 36 ppf	none	Y
Intermediate 2							
Intermediate 3							
Production	8.75	7"	5477' KB	New	L/N-80 / 23 ppf	none	N
Tubing							
Packer type and depth set							

Comment Details KB is 17 ft above GL.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Neat	20	15.6	1.18	24	0	4
Surface	Type I	400	15.6	1.19	476	0	8
Coal							
Intermediate 1	65-35 Poz / Type I	500 / 150	13.1 / 15.6	1.71 / 1.19	855 + 179	0	12
Intermediate 2							
Intermediate 3							
Production	Type I	100 / 70	15.6	1.19 / 1.22	119 + 85	4300	24
Tubing							

Drillers TD (ft) 5643 Loggers TD (ft) 5636

Deepest formation penetrated Helderberg limestone Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 2394

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING

13.375" csg: none (four were planned but they would not pass through bottom of 20" conductor)

9.625" csg: six bow-spring on jts 1, 11, 21, 31, 41, and 51.

7" csg: six spiral rigid on jts 1, 2, 3, 4, 5, and 5 - six bow-spring on jts 7, 8, 9, 10, and 11.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS 6.125" borehole from 5495 to 5643 ft.

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Oriskany Sandstone</u>	<u>5231 - 5279</u> TVD	<u>5512 - 5560</u> MD
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1260 psi Bottom Hole _____ psi DURATION OF TEST 1 hrs

OPEN FLOW Gas 116,000 mcfpd Oil 0 bpd NGL 0 bpd Water 0 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
siltstone	0	50	0	50	* depths relative to KB (17' above GL), no shows
sand	50	446	50	446	none
shale, sand, siltstone	446	1905	446	1905	none
Salt Sand	1905	2250	1905	2250	salt water
Pocono shale	2250	2542	2250	2543	none
Coffee / Sunbury shale	2542	2561	2543	2562	none
Berea horizon	2561	2563	2562	2564	none
Devonian shale	2563	5105	2564	5385	none
Marcellus shale	5105	5117	5385	5397	none
Onondaga limestone	5117	5231	5397	5512	none
Oriskany sandstone	5231	5249	5512	5530	upper, storage gas
Oriskany sandstone	5249	5279	5530	5560	lower, storage gas
Helderberg limestone	5279	5354	5560	5636	none
TD		5354 (loggers)		5636 (loggers)	

Please insert additional pages as applicable.

Drilling Contractor Yost Drilling, LLC
Address 313 Steele Hill Road City Mt. Morris State PA Zip 15349

Logging Company Baker Atlas Logging
Address W Main St City Buckhannon State WV Zip 26201

Cementing Company Universal Well Service
Address Route 5 Hall Rd City Buckhannon State WV Zip 26201

Stimulating Company C & J Energy Services
Address 528 Industrial Park Rd City Jane Lew State WV Zip 26038

Please insert additional pages as applicable.

Completed by James Amos Telephone 304-483-0073 JUL 21 2015
Signature [Signature] Title Sr Well Services Engineer Date 7/15/15

Submission of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry