



**Jackie M. Scholar**  
Regulatory Reporting Coordinator

May 10, 2016

**CERTIFIED MAIL: 7015 0640 0001 0567 4475**

WV DEP  
Office of Oil and Gas  
601 – 57<sup>th</sup> Street  
Charleston, WV 25304

RE: Amended Well Operator's Report of Well Work WR-35  
**Berger 8H**

Dear Sir/Madam,

Enclosed here within please find one (1) Amended Well Operator's Report of Well Work WR-35 for the **Berger 8H, (API 47-051-01707)**. The following items have been amended:

- **Production Information due to start of production**

If you have any questions, please contact me at (724) 564-3721. Thank you.

Sincerely,  
Chevron Appalachia, LLC

Jackie M. Scholar

Enclosures

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**Appalachian/Michigan Business Unit**  
Chevron North America Exploration & Production Company (a division of Chevron U.S.A. inc.)  
800 Mountain View Drive, Smithfield, PA 15478  
Tel 724-564-3721  
[jscholar@chevron.com](mailto:jscholar@chevron.com)

10/28/2016

Amended

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

API 47-051-01707 County Marshall District Clay  
Quad Glen Easton Pad Name Berger Field/Pool Name \_\_\_\_\_  
Farm name Berger Well Number 8H  
Operator (as registered with the OOG) Chevron Appalachia, LLC  
Address 800 Mountain View Drive City Smithfield State PA Zip 15478

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4413862.22 Easting 520983.62  
Landing Point of Curve Northing 4413843.19 Easting 520541.14  
Bottom Hole Northing 4415165.27 Easting 519567.20

Elevation (ft) 1292' 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 \_\_\_\_\_  
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)  
Surface sections was drilled on air. The Intermediate and Production sections was drilled on SBM  
Fluid loss control, emulsifier, and shale stabilizer additives

Date permit issued 2/26/2014 Date drilling commenced 6/20/2014 Date drilling ceased 1/3/2015  
Date completion activities began 8/4/2015 Date completion activities ceased 12/26/2015  
Verbal plugging (Y/N) N Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

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

Freshwater depth(s) ft 169' Open mine(s) (Y/N) depths \_\_\_\_\_  
Salt water depth(s) ft \_\_\_\_\_ Void(s) encountered (Y/N) depths \_\_\_\_\_  
Coal depth(s) ft 768'-769', 784'-785', 830'-837', 1411'-1413', 1415'-1418' Cavern(s) encountered (Y/N) depths \_\_\_\_\_  
Is coal being mined in area (Y/N) No but not sealed

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Reviewed by:

10/28/2016

API 47-051 01707 Farm name Berger Well number 8H

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	36	30	40	New	X-42; 118.76	NA	Y
Surface	17 1/2	13 3/8	<u>297 303</u>	New	J-55; 54.50	NA	Y
Coal							
Intermediate 1							
Intermediate 2	12 1/4	9 5/8	2673	New	N-80; 40	NA	Y
Intermediate 3							
Production	8 1/2	5 1/2	12513	New	P-110; 20	NA	Y
Tubing							
Packer type and depth set							

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Bulk	60					
Surface	Bulk	382	15.60	1.21	462	SURFACE	8
Coal							
Intermediate 1							
Intermediate 2	A	914	15.60	1.24	1133	SURFACE	8
Intermediate 3							
Production	A	2382	15.20	1.31	3120	SURFACE	8
Tubing							

Drillers TD (ft) 12532 Loggers TD (ft) 12532  
 Deepest formation penetrated NA Plug back to (ft) NA  
 Plug back procedure NA

Kick off depth (ft) 4888

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 \_\_\_\_\_  
Surface String: 1 Bow spring centralizer halfway through the shoe track around a stop collar, 1 Bow spring centralizer per joint over connection to base of conductor. One ridged centralizer within top 40" inside conductor.  
 Intermediate String: 1 Bow spring centralizer halfway through the shoe track around a stop collar, and 1 bow spring centralizer over every other connection. Production casing 1 Solid Torque Slider Centralizer per joint to KOP, and 1 bow spring centralizer every other joint to surface after bit.

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS Please see attached Perforation and Stimulation reports

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

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

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API 47-051-01707 Farm name Berger Well number 8H

PRODUCING FORMATION(S) DEPTHS  
Marcellus (S2B) 6439 TVD 7178 MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 1020 psi Bottom Hole 3900 psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 96 mcfpd Oil 29 bpd NGL n/a bpd Water 286 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
Dunkard Group Sand	160	169	169	169	Fresh Water 169'MD 1" stream
Pittsburgh Coal	830	837	830	837	Coal
Salt Sand	1538	1568	1540	1570	Gas Show @ 1550' 6101 units
Big Lime	1848	1928	1850	1930	Limestone: crm-wh, hd, crpxln
Burgoon (Big Injun)	1927	2117	1930	2120	SS: offwh, wh, cons, clr, trans, lcemt, fg-mg
Weir Sand	2277	2297	2280	2300	SLTST: ltgy-mgy, occ mgy, hrd, vf-fg, tcmt, bio, arg, sl calc
Berea Sand	2507	2530	2510	2533	SS: wh, clr, trans, ltgy-gy, cns, lomt, mg-fg, sbang-ang, arg, meph, non calc, tr flor, ext fast cut, fnt odr, lse pyr
Burket Shale	6281	6294	6611	6635	SH: drkgy, v.drkgy, frm, slty, grty, sbbiky-sbfiss, modcalc, embd calc, lse calct
Tully Limestone	6294	6330	6635	6706	LS: ltgy, gy, mgy, frm-hrd, dns, cln, mic-fxin, v. arg
Hamilton Shale	6330	6369	6706	6816	SH: drkgy, v.drkgy, frm, slty, grty, sbbiky-sbfiss, carb, modv. calc, lse calct, w/LS
Marcellus Shale	6369		6816		SH: drkgy, v.drkgy, frm, slty, grty, sbbiky-sbfiss, non calc, lse calct, lse pyr, w/LS-gy, ltgy, hrd, mott, mic, fxin, v. arg

Please insert additional pages as applicable.

Drilling Contractor SEE ATTACHED  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Logging Company ALS Group USA Corp  
 Address 3352 128th Avenue City Holland State MI Zip 49424

Cementing Company SEE ATTACHED  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Stimulating Company Schlumberger Technology Corp  
 Address 4600 J Barry Court, Suite 200 City Canonsburg State PA Zip 15307

Please insert additional pages as applicable.

Completed by Jackie M. Scholar Telephone 724-564-3721  
 Signature [Signature] Title Regulatory Compliance Team Lead Date 5/10/2016

Submittal of Hydraulic Fracturing Chemical Disclosure Information

Attach copy of FR to Environmental Registry

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MAY 13 2016

WV Department of  
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[Signature]  
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