

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

API 47-051-01785 County Marshall District Washington
Quad Moundsville Pad Name Curry Field/Pool Name _____
Farm name Curry Well Number 9H
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 515656.671 Easting 1641368.558
Landing Point of Curve Northing 514720.660 Easting 1641193.680
Bottom Hole Northing 507733.530 Easting 1646534.420

Elevation (ft) 1317' 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)
Synthetic - Barite, Surfactant, Calcium Chloride

Date permit issued 1/14/2015 Date drilling commenced 3/18/2015 Date drilling ceased 11/28/2015
Date completion activities began 4/19/2016 Date completion activities ceased 9/20/2016
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 1/2" stream @ 355' GL per mudlog Open mine(s) (Y/N) depths N
Salt water depth(s) ft _____ Void(s) encountered (Y/N) depths N
Coal depth(s) ft 819' GL per mud log Cavern(s) encountered (Y/N) depths OCT 14 2015
Is coal being mined in area (Y/N) No, it is in the sealed and abandoned Alexander Mine

APPROVED

NAME: James Nicholson
DATE: 1/25/17

Reviewed by: [Signature]

API 47-051 - 01785 Farm name Curry Well number 9H

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	80'	New	X-42; 118.76#		Y
Surface	26"	20"	410'	New	J-55; 94#		Y
Coal	17 1/2"	13 3/8"	865'	New	J-55; 54.5#	773'	N *Performed shoe test & grouted to surface*
Intermediate 1							
Intermediate 2	12 1/4"	9 5/8"	2174'	New	J-55; 40#		Y
Intermediate 3							
Production	8 1/2"	5 1/2"	15868'	New	P-110; 20#		Y
Tubing							
Packer type and depth set							

Comment Details _____

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	Bulk	216					
Surface	Class A	751	15.6	1.20	901	Surface	8
Coal	Class A	560	15.6	1.20	672	Surface	8
Intermediate 1							
Intermediate 2	Class A	796	15.6	1.19	947	Surface	8
Intermediate 3							
Production	Lead: Class G Tail: Class G	Lead: 2088 Tail: 1433	Lead: 15.2 Tail: 14.8	Lead: 1.11 Tail: 1.12	Lead: 2318 Tail: 1605	Surface	8
Tubing							

Drillers TD (ft) 15,886' MD GL (6,674' TVD) Loggers TD (ft) _____
 Deepest formation penetrated Marcellus (S2B) Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) 5,288' MD GL (5,285' TVD)

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 There is a bow spring centralizer every joint on the water string, a bow spring centralizer every 2 joints for the coal and intermediate strings, and the production string has a centralizer every joint in the lateral and curve, then one every two joints from KOP to surface.

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 _____

API: 47-051-01785	Well Name: Curry	Well Number: 9H
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PERFORATION RECORD					
Stage No.	Perforation Date	Perforated From TMD Ft.	Perforated To TMD Ft.	Number of Perforations	Formation(s)
1	6/2/2016	15795	15633	60	Marcellus
2	6/2/2016	15595	15353	50	Marcellus
3	6/3/2016	15315	15073	50	Marcellus
4	6/3/2016	15035	14796	50	Marcellus
5	6/6/2016	14757	14513	50	Marcellus
6	6/6/2016	14474	14233	50	Marcellus
7	6/7/2016	14195	13953	43	Marcellus
8	6/7/2016	13915	13677	50	Marcellus
9	6/8/2016	13637	13393	50	Marcellus
10	6/8/2016	13115	13335	50	Marcellus
11	6/9/2016	13075	12833	50	Marcellus
12	6/9/2016	12795	12558	50	Marcellus
13	6/10/2016	12519	12273	50	Marcellus
14	6/10/2016	12235	11993	50	Marcellus
15	6/13/2016	11955	11713	50	Marcellus
16	6/13/2016	11675	11429	50	Marcellus
17	6/14/2016	11400	11153	50	Marcellus
18	6/14/2016	11115	10873	50	Marcellus
19	6/15/2016	10835	10593	50	Marcellus
20	6/15/2016	10555	10310	50	Marcellus
21	6/16/2016	10270	10033	50	Marcellus
22	6/16/2016	9995	9753	50	Marcellus
23	6/17/2016	9715	9473	50	Marcellus
24	6/17/2016	9435	9190	50	Marcellus
25	6/17/2016	9151	8913	50	Marcellus
26	6/20/2016	8875	8634	50	Marcellus
27	6/20/2016	8595	8353	50	Marcellus
28	6/20/2016	8315	8073	50	Marcellus
29	6/21/2016	8033	7795	50	Marcellus
30	6/21/2016	7755	7513	50	Marcellus
31	6/21/2016	7475	7233	50	Marcellus
32					
33					
34					
35					
36					
37					
38					
39					
40					

Please insert additional copies of this page if additional rows/stages are needed.

OCT 14 2016

API: 47-051-01785	Well Name: Curry	Well Number: 9H
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DRILLING CONTRACTORS		
Driller	Driller	Driller
Name Rocky Mountain Drilling	Name Highlands Drilling LLC	Name Nabors Drilling, USA
Address 185 North Vernal Avenue, Suite 2	Address 900 Virginia Street East	Address 10100 NW 10th Street
City - State - Zip Vernal, UT 84078	City - State - Zip Charlestown, WV 25301	City - State - Zip Oklahoma City, OK 73127

OCT 14 2016
 THE OREGON DEPARTMENT OF
 REVENUE

898

Lithology/Formation	Top TVD	Bottom TVD	TOP MD	Bottom MD	Type of Rock
SLTS/SS	90	500	90	500	Lithologies are taken from Curry 2H mudlog
LS/SLTST	500	700	500	700	
LS	700	834	700	834	
Coal	834	850	834	850	
LS/SLTST	850	944	850	944	
Speechley Sands	3435	3470	3435	3470	SS, SLTS
SLTST/SH	3470	5650	3470	5650	SLTST, SS, SH
SH	5565	6312	5650	6784	
Middlesex	6312	6403	6784	6945	SH, drk gry mgry
Burkett	6403	6414	6945	6966	
Tully	6414	6450	6966	7038	
S5 Hamilton	6450	6539	7038	7290	SH
S3	6539	6555	7290	7368	SH, tr LS
Stafford / Cherry Valley	6555	6555	7368	7382	LS, SH
Lower Marcellus / S2B	6557	--	7382	--	SH drk gry, tr LS

WITNESS
OCT 14 2016

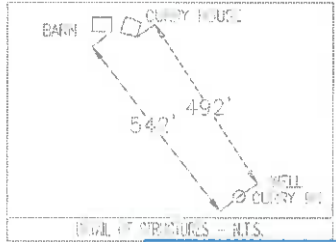
OCT 14 2016

WITNESS
OCT 14 2016

Well is located on topo map 2,260 feet south of Latitude: 39° 55' 00"

SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS

AS DRILLED PLAT



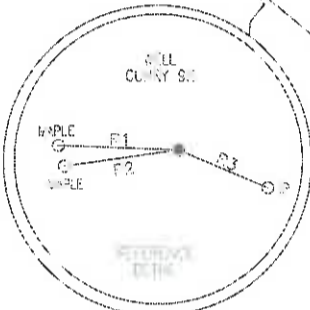
PERMITTED
SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83(M)
N:4417810.580
E:528530.237
NAD83, WV NORTH
N:515656.671
E:1641368.558

AS DRILLED
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LEGEND

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- AS-DRILLED LATERAL
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE
- (A) - LESSORS
- (1) - SURFACE OWNERS
- GAS WELLS**
- EXISTING WELLS
- PLUGGED WELLS

Blue Mountain Inc.
10125 MASON DIXON HIGHWAY
BURTON, WV 26562
PHONE: (304) 662-6486



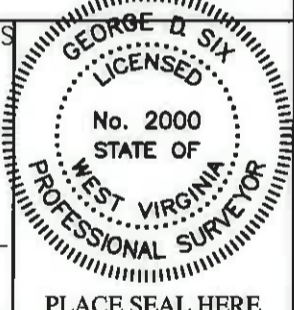
- NOTES:
- There are no water wells or developed springs within 250' of proposed well.
 - Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
 - There are no relative trout streams within 300' of proposed well.
 - Proposed well is greater than 1000' from surface groundwater intake or public water supply.
 - It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

PERMITTED
APPROX. LANDING POINT
UTM 17-NAD83(M)
N:4417526.14
E:528480.90
NAD83, WV NORTH
N:514725.999
E:1641191.066

AS DRILLED
APPROX. LANDING POINT
UTM 17-NAD83(M)
N:4417524.53
E:528481.73
NAD83, WV NORTH
N:514720.680
E:1641193.680

PERMITTED
BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83(M)
N:4415429.33
E:530152.33
NAD83, WV NORTH
N:507753.617
E:1646580.787

AS DRILLED
BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83(M)
N:4415423.08
E:530144.40
NAD83, WV NORTH
N:507733.530
E:1646534.420



FILE #: CURRY 9H - AS-DRILLED
DRAWING #: CURRY 9H - AS-DRILLED
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1/2500
PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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: *George D. Six*
R.P.E.: _____ L.L.S.: P.S. No. 2000

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



DATE: MARCH 25, 2016
OPERATOR'S WELL #: CURRY 9H - AS-DRILLED
API WELL #: 47 51 01785
STATE COUNTY PERMIT

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

WATERSHED: MIDDLE GRAVE CREEK-GRAVE CREEK ELEVATION: 1317.13'
COUNTY/DISTRICT: MARSHALL / WASHINGTON QUADRANGLE: MOUNDVILLE, WV 7.5'
SURFACE OWNER: JAMES E. CURRY ACREAGE: 45.01±
OIL & GAS ROYALTY OWNER: JAMES E. CURRY ACREAGE: 597.049±

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: MARCELLUS ESTIMATED DEPTH: TVD: 6,707'± TMD: 15,918'±
WELL OPERATOR CHEVRON APPALACHIA, LLC DESIGNATED AGENT KENNETH E. TAWNEY
Address 800 MOUNTAIN VIEW DRIVE Address 500 LEE STREET, EAST SUITE 1600
City SMITHFIELD State PA Zip Code 15478 City CHARLESTON State WV Zip Code 25301-3202

Well is located on topo map 11,434 feet west of Longitude: 80° 37' 30"

CURRY

9H

PAGE 2 OF 2

	LESSOR	DIST-TM/PAR
A	JAMES E. CURRY	14-10/15
B	JOSEPH M. & TAMARA L. CROW	14-10/17
C	RAYMOND E. & CAROLYN S. FRANKLIN	14-11/9
D	VERNON, JR. & JUDITH E. KNOX	15-15/1
	VIOLA S. & HUGH N. BLACK	
E	RAY STOLLAR	15-16/1
F	DWAIN E. GLOVER	15-16/12
G	DWAIN E. GLOVER	15-16/11

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NAD83_WV NORTH	
N:515656.671	
E:1641368.558	

	SURFACE OWNER	DIST-TM/PAR
1	DENNIS BLAKE ET UX	14-10/10
2	DENNIS & MICHELLE S. BLAKE	14-10/11.3
3	JOHN J. II & JENNA E. HART	14-10/11
4	JAMES E. BLAKE	14-10/11.1
5	JOHN J. & RENEE A. HART	14-10/19.1
6	JOHN J. & RENEE A. HART	14-10/19
7	JOHN J. HART ET UX	14-10/14
8	JAMES E. CURRY	14-10/13
9	DENNIS BLAKE ET UX	14-10/12
10	MICHAEL T. DAVIS	14-10/9
11	FREDA ELIZABETH BLAKE	14-10/9.1
12	RICHARD E. HITT	14-10/8.3
13	VALLIE JAMES WEST	14-10/8
14	VALLIE JAMES WEST	14-10/8.1
15	DAVID L. BLAKE	14-10/8.2
16	JOSEPH MICHAEL CROW	14-10/16
17	JAMES E. CURRY	14-10/15
18	JOSEPH MICHAEL CROW ET UX	14-10/17
19	DAVID E. HILL ET UX	14-11/7
20	DAVID E. HILL ET UX	14-11/6.10
21	DENNIS C. FISHER ET UX	14-11/6.4
22	DENNIS CLYDE FISHER	14-11/18
23	ILA F. MOORE ET AL	14-11/6
24	ROBERT H. BOWMAN JR.	14-11/8.1
25	RONALD R. & NITA L. ADKINS	14-11/6.9
26	JASON W. & AMANDA K. JOHNSON	14-11/6.5
27	PATRICIA SUE HOSKINS	14-11/8.6
28	MARY V. JAKO ET AL	14-11/8.2
29	JOHN J. & BELINDA R. BAKER	14-11/8.8
30	RICHARD W. HYETT ET UX	14-11/17
31	RICHARD W. HYETT ET UX	14-11/8.4
32	RICHARD W. HYETT ET UX	14-11/8.3
33	GREGORY SCOTT MCDONALD ET UX	14-11/8.9
34	DEBRA J. & RICHARD L. WAYT JR.	14-11/8.5
35	DAVID LAWRENCE WILSON ET UX	14-11/8
36	DAVID E. FRANKLIN	14-11/8.7
37	RAYMOND EUGENE FRANKLIN ET UX	14-11/9
38	JOHN J. HART ET UX	14-10/18
39	JOHN A. BIERCE II ET UX	15-15/3
40	HONUS ADAIR STOLLAR	15-15/9
41	KANDY J. & ANTHONY E. BLATT	15-15/9.1
42	M E CHURCH	15-15/10
43	VERNON KNOX JR. ET UX	15-15/2
44	NATHAN J. & SHANEY M. LILLEY	15-15/12.3
45	MARK O. PETTIT	15-15/12.1
46	PAULINE LOU LILLEY - LIFE	15-15/15
47	VERNON KNOX JR. ET UX	15-15/14
48	VERNON KNOX JR. ET UX	15-15/13
49	VERNON KNOX JR. ET UX	15-15/1
50	DAVID L. WILSON ET UX	14-11/8.10
51	RONALD A. STOLLAR	15-16/1
52	DONNA M. GEHO - LIFE	15-16/3
53	ANTHONY T. & ABBY Q. GEHO	15-16/3.1
54	AARON R. SR. & JANA K. PARRY	15-16/7
55	DWAIN E. GLOVER	15-16/12
56	JERRY I. & CAROLYN LILLEY	15-15/16
57	DWAIN E. GLOVER	15-16/11
58	DWAYNE A. BONDS JR.	15-16/10

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/2/2016
Job End Date	6/21/2016
State	West Virginia
County	Marshall
API Number:	47-051-01785-00-00
Operator Name	Chevron USA Inc.
Well Name and Number	Curry 9H
Latitude	39.90990164
Longitude	-80.66620318
Datum	NAD83
Federal Well	NO
Indian Well	NO
True Vertical Depth.	6,674
Total Base Water Volume (gal)	12,367,264
Total Base Non Water Volume	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Schlumberger	N/A					
			Water (Including Mix Water Supplied by Client)*	7732-18-5		87.44008	
M300	Schlumberger	Myacide TS GA 25					
				Listed Below			

submitted 7/28/16

S100	Schlumberger	Fluid Loss Additive		Listed Below				
Items above are Trade Names with the exception of Base Water. Items below are the individual ingredients.								
		Quartz, Crystalline silica	14808-60-7	98.78063	12.40677			
		Hydrochloric acid	7647-01-0	0.54519	0.06848			
		2-Propenoic acid, ammonium salt, polymer with 2-propenamamide, sodium salt	910644-97-2	0.19356	0.02431			
		Distillates, petroleum, hydrotreated light	64742-47-8	0.17922	0.02251			
		Glutaraldehyde	111-30-8	0.10642	0.01337			
		Ammonium sulfate	7783-20-2	0.07886	0.00990			
		Tetrasodium ethylenediaminetetraacetate	64-02-8	0.06531	0.00820			
		Ammonium acetate	631-61-8	0.04301	0.00540			
		Alcohols, C10-16, ethoxylated	68002-97-1	0.02613	0.00328			
		Alcohols, C12-C14, ethoxylated	68439-50-9	0.02581	0.00324			
		Alcohols, C12-C16, ethoxylated	68551-12-2	0.02581	0.00324			
		Sorbitan monooleate	1338-43-8	0.02151	0.00270			
		Sodium thiosulphate	7772-98-7	0.02151	0.00270			
		Ethanol, 2,2',2"-nitrilotris-, 1,1',1"-tris (dihydrogen phosphate), sodium salt	68171-29-9	0.01767	0.00222			
		Ethoxylated oleylamine	26635-93-8	0.01075	0.00135			
		Trisodium ortho phosphate	7601-54-9	0.00777	0.00098			

				68071-95-4	0.00609	0.00077	
			Quaternary ammonium compounds, ethyl/bis (hydroxyethyl)tallow alkyl, ethoxylated, Et sulfates (salts)				
			Sodium Glycolate (impurity)	2836-32-0	0.00529	0.00066	
			Sodium erythorbate	6381-77-7	0.00418	0.00053	
			Methanol	67-56-1	0.00279	0.00035	
			Ethylene Glycol	107-21-1	0.00221	0.00028	
			Sodium hydroxide	1310-73-2	0.00177	0.00022	
			Trisodium Ethylenediaminetetraacetate (impurity)	150-38-9	0.00176	0.00022	
			Disodium Ethylene Diamine Tetra Acetate (impurity)	139-33-3	0.00176	0.00022	
			Reaction product of: acetophenone, formaldehyde, cyclohexylamine, methanol and acetic acid	224635-63-6	0.00115	0.00014	
			Trisodium nitriotriacetate (impurity)	5064-31-3	0.00088	0.00011	
			Guar gum	9000-30-0	0.00077	0.00010	
			Propan-2-ol	67-63-0	0.00072	0.00009	
			Cinnamaldehyde	104-55-2	0.00064	0.00008	
			Alcohol, C9-C11, Ethoxylated	68439-46-3	0.00048	0.00006	
			Acetic acid(impurity)	64-19-7	0.00012	0.00002	
			Acetophenone	98-86-2	0.00012	0.00002	
			Amines, tallow alkyl, ethoxylated	61791-26-2	0.00010	0.00001	
			Formaldehyde (impurity)	50-00-0	0.00008	0.00001	
			2-Propenamid (impurity)	79-06-1	0.00007	0.00001	
			Lactose	63-42-3	0.00003	0.00000	
			Non-crystalline silica (impurity)	7631-86-9	0.00000	0.00000	

		Maltodextrin	9050-36-6	0.00000	0.00000
		Dextrin	9004-53-9	0.00000	0.00000
		Hemicellulase enzyme	9012-54-8	0.00000	0.00000

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
 Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)