

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

API 47-051-01994 County Marshall District Clay  
Quad Glen Easton Pad Name Hicks Pad A Field/Pool Name \_\_\_\_\_  
Farm name Thomas E. Hicks Well Number Hicks M09H  
Operator (as registered with the OOG) Chevron Appalachia, LLC (49449935)  
Address 700 Cherrington Parkway City Coraopolis State PA Zip 15108

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 501922.730 Easting 1626612.880  
Landing Point of Curve Northing 498908.450 Easting 1623704.940  
Bottom Hole Northing 493096.960 Easting 1628306.980

Elevation (ft) 1167' 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, fluid loss, emulsifiers, rheological control

Date permit issued 4/4/2018 Date drilling commenced 8/30/2018 Date drilling ceased 8/17/2019  
Date completion activities began 10/18/2019 Date completion activities ceased 3/12/2020  
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

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Freshwater depth(s) ft n/a Open mine(s) (Y/N) depths N  
Salt water depth(s) ft n/a Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 698', 1290' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:

*Jim Wehner*  
4/15/2020

API 47-051 - 01994

Farm name Thomas E. Hicks

Well number Hicks M09H

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	26"	20"	60'	N	X-52 / 78.67		Y
Surface	17-1/2"	13-3/8"	522'	N	J-55 / 54.50		Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2054'	N	L-80 / 40		Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	15852'	N	P-110EC / 20		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 Cement					Surface	8
Surface	Class A	419	15.6	1.20	503	Surface	8
Coal							
Intermediate 1	Class A	689	15.6	1.19	820	Surface	8
Intermediate 2							
Intermediate 3							
Production	Class A	2500	15.0	1.23	3070	Surface	8
Tubing							

Drillers TD (ft) 15878

Loggers TD (ft) 15878

Deepest formation penetrated Marcellus

Plug back to (ft) \_\_\_\_\_

Plug back procedure \_\_\_\_\_

Kick off depth (ft) 7188'

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: (1) on shoe track with slip collar and (1) per joint over coupling to surface.

INTERMEDIATE: (1) on shoe track with slip collar and (1) per three joints over coupling.

PRODUCTION: (1) centralizer every joint in the lateral and curve and (1) every other joint from KOP to surface.

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

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

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





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PERFORATION RECORD					
Stage No.	Perforation Date	Perforated From TMD Ft.	Perforated To TMD Ft.	Number of Perforations	Formation(s)
1	1/2/2020	15612	15713	47	Marcellus
2	1/3/2020	15410	15570	47	Marcellus
3	1/3/2020	15210	15370	47	Marcellus
4	1/3/2020	15010	15170	47	Marcellus
5	1/4/2020	14810	14970	47	Marcellus
6	1/5/2020	14610	14770	47	Marcellus
7	1/6/2020	14410	14570	47	Marcellus
8	1/6/2020	14210	14370	47	Marcellus
9	1/6/2020	14010	14170	47	Marcellus
10	1/7/2020	13810	13970	47	Marcellus
11	1/7/2020	13610	13770	47	Marcellus
12	1/7/2020	13410	13570	47	Marcellus
13	1/8/2020	13210	13370	47	Marcellus
14	1/8/2020	13010	13170	47	Marcellus
15	1/8/2020	12810	12970	47	Marcellus
16	1/9/2020	12610	12770	47	Marcellus
17	1/9/2020	12410	12570	47	Marcellus
18	1/9/2020	12210	12370	47	Marcellus
19	1/10/2020	12010	12170	47	Marcellus
20	1/10/2020	11810	11970	47	Marcellus
21	1/10/2020	11610	11770	47	Marcellus
22	1/11/2020	11410	11570	47	Marcellus
23	1/11/2020	11210	11370	47	Marcellus
24	1/11/2020	11010	11170	47	Marcellus
25	1/12/2020	10810	10970	47	Marcellus
26	1/12/2020	10610	10770	47	Marcellus
27	1/13/2020	10410	10570	47	Marcellus
28	1/13/2020	10210	10370	47	Marcellus
29	1/13/2020	10010	10170	47	Marcellus
30	1/13/2020	9810	9970	47	Marcellus
31	1/14/2020	9610	9770	47	Marcellus
32	1/14/2020	9410	9570	47	Marcellus
33	1/14/2020	9210	9370	47	Marcellus
34	1/15/2020	9010	9170	47	Marcellus
35	1/15/2020	8810	8970	47	Marcellus
36	1/15/2020	8610	8770	47	Marcellus
37					
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Please insert additional copies of this page if additional rows/stages are needed.

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STIMULATION INFORMATION / STAGE								
Complete a separate record for each stimulation stage. (Please insert additional lines for additional stages or additional pages as applicable).								
Stg No.	Stimulation Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	1/2/2020	99.4	8312	5463	4091	400861	9282	n/a
2	1/3/2020	99.6	8561	4530	4142	400377	9665	n/a
3	1/3/2020	100.5	8625	5141	4568	400081	9918	n/a
4	1/3/2020	100.1	8671	5846	5068	400722	9675	n/a
5	1/4/2020	97.8	8494	4888	4722	400180	9685	n/a
6	1/5/2020	100.4	8669	5314	4687	400904	9696	n/a
7	1/6/2020	99.7	8536	6068	4813	399250	9673	n/a
8	1/6/2020	99.8	8466	5102	4750	400107	9748	n/a
9	1/6/2020	99.8	8361	4917	4799	400681	9566	n/a
10	1/7/2020	99	8323	5489	4820	400482	9529	n/a
11	1/7/2020	98.9	8134	4666	4527	399997	9689	n/a
12	1/7/2020	99.6	8266	5560	4311	402266	9518	n/a
13	1/8/2020	99.5	7576	3913	4738	399861	9603	n/a
14	1/8/2020	99.6	7933	4565	4371	400520	9646	n/a
15	1/8/2020	99.7	7688	4033	4478	399987	9449	n/a
16	1/9/2020	100.6	7785	3847	4528	401213	9569	n/a
17	1/9/2020	99.3	8032	4100	5000	409066	9643	n/a
18	1/9/2020	100.3	7903	4785	4564	399937	9469	n/a
19	1/10/2020	99.6	7818	5401	4541	401093	9388	n/a
20	1/10/2020	99.6	7762	4004	4987	400202	9458	n/a
21	1/10/2020	99.7	7709	3505	4656	400082	9383	n/a
22	1/11/2020	100	7477	4379	4645	401564	9497	n/a
23	1/11/2020	100.1	7441	3976	4546	400171	9468	n/a
24	1/11/2020	100.1	7423	5690	4387	400512	9338	n/a
25	1/12/2020	100.1	7425	4483	4888	401675	9423	n/a
26	1/12/2020	99.4	7511	4673	4514	399995	9326	n/a
27	1/13/2020	99.8	7672	5598	4582	400059	9352	n/a
28	1/13/2020	100.2	7628	5282	5476	400477	9374	n/a
29	1/13/2020	100.1	7465	6450	4612	400441	9371	n/a
30	1/13/2020	99.9	7335	4901	4711	400100	9280	n/a
31	1/14/2020	100.8	7391	5639	4564	401155	9350	n/a
32	1/14/2020	100.1	7344	5541	4312	402907	9390	n/a
33	1/14/2020	99.8	7351	5512	4385	400275	9237	n/a
34	1/15/2020	100	7337	5210	4333	400084	9257	n/a
35	1/15/2020	100.7	7186	4468	4386	404116	9386	n/a
36	1/15/2020	99.8	7141	4878	4568	400767	9710	n/a
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Well Number: Hicks M09H

Lithology/Tops	MD Top	MD Base	TVD Top	TVD Base	Describe rock type and record quantity and type of fluid (Freshwater, Brine, Oil, Gas, H2S, Etc.)
<b>Pittsburgh Coal</b>	698	704	676	682	coal
<b>Conemaugh</b>	704	1096	704	1096	shale & siltstone transitioning to shale & limestone at base; gas shows
<b>Allegheny</b>	1096	1304	1096	1304	limey siltstones and shales; oil show
<b>Clairion Coal</b>	1290	1,297	1290	1297	coal
<b>Salt Sands</b>	1,304	1,545	1304	1544	interbedded sands and shales; gas shows
<b>Mauch Chunk</b>	1,545	1,666	1544	1665	sandy/silty shales
<b>Big Lime</b>	1,666	1,733	1665	1731	siltstone transitioning to limestone base
<b>Burgoon</b>	1,733	1,952	1731	1947	sandstone
<b>Weir Shale</b>	1,952	2,070	1947	2070	shale; brine
<b>CHQA</b>	7508	7646	6057	6133	siltstone/shale, gas shows
<b>MDLX</b>	7646	7694	6133	6159	shale
<b>PYAN</b>	7694	7749	6159	6190	siltstone/shale, gas show
<b>BRKT</b>	7749	7795	6190	6214	shale
<b>BRKT.a</b>	7795	7824	6214	6229	shale
<b>TLLY</b>	7824	7903	6229	6266	limestone, gas shows
<b>S5</b>	7903	8136	6266	6336	shale, gas shows
<b>S3</b>	8136	8242	6336	6359	shale, gas shows
<b>STFD</b>	8242	8249	6359	6361	limestone
<b>S2.B</b>	8249	8289	6361	6367	shale, gas shows
<b>S2.A</b>	8289		6367		shale, gas shows
<b>TD</b>	15,878				

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DRILLING CONTRACTORS		
Driller	Driller	Driller
Name Rocky Mountain Drilling	Name Highlands Drilling LLC	Name Precision Drilling Holdings Company
Address 185 North Vernal Avenue, Suite 2	Address 900 Virginia Street East	Address 10350 Richmond Avenue, Suite 700
City - State - Zip Vernal, UT 84078	City - State - Zip Charlestown, WV 25301	City - State - Zip Houston, TX 77042

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/22/2020
Job End Date:	1/15/2020
State:	West Virginia
County:	Marshall
API Number:	47-051-01994-00-00
Operator Name:	Chevron USA Inc.
Well Name and Number:	Hicks M09H
Latitude:	39.87166400
Longitude:	-80.83480300
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,438
Total Base Water Volume (gal):	14,364,462
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	Chevron	Carrier/Base Fluid	Water	7732-18-5	100.00000	88.18718	None
Sand	Upp	Proppant	Crystalline Silica in the form of Quartz	14808-60-7	99.90000	10.60686	None
FR-11	Upp	Friction reducer	Water	7732-18-5	55.00000	0.04368	None
			CHEMPLEX-Polymer_00019	Trade Secret	25.00000	0.01985	None
			Hydrotreated Petroleum Distillate	64742-47-8	25.00000	0.01985	None
			Sodium Chloride	7647-14-5	15.00000	0.01191	None
			Alcohol Ethoxylate Surfactants	68551-12-2	3.00000	0.00238	None
			Oleic Acid Diethanolamide	93-83-4	3.00000	0.00238	None
			Ammonium Chloride	12125-02-9	2.00000	0.00159	None
			Polyoxyethylene Sorbitan Monoleate	9005-65-6	1.00000	0.00079	None
HCl Acid (7.5%)	Upp	Acidizing	Hydrochloric Acid	7647-01-0	7.50000	0.07918	None
K-BAC 1020	Upp	Bioocide					

Submitted 1/27/20



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Other Chemical(s)	Listed Above	See Trade Name(s) List	Ingredients shown above are subject to 29 CFR 1910.1200(f) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.	Ingredients shown below are Non-MSDS.	Ingredients shown below are Non-MSDS.	Ingredients shown below are Non-MSDS.	Ingredients shown below are Non-MSDS.	Ingredients shown below are Non-MSDS.
			Polyethylene glycol	25322-68-3	50.00000	0.01042	None	
			Water	7732-18-5	30.00000	0.00625	None	
			2,2-Dibromo-3-nitropropionamide	10222-01-2	21.00000	0.00438	None	
Scale Hib PE-18	JPP	Scale Inhibitor	Ethylene glycol	107-21-1	40.00000	0.00712	None	
			Proprietary Scale Inhibitor	Proprietary	30.00000	0.00534	None	
17L	JPP	Iron Control Agent	Ethylene Glycol	107-21-1	20.00000	0.00416	None	
			Ammonium glycolate	35249-89-9	20.00000	0.00416	None	
			Hydroxyacetic acid	79-14-1	5.00000	0.00104	None	
Unihib G	JPP	Acid Inhibitor	Butyl diglycol	112-34-5	75.00000	0.00062	None	
			Alcohol, C10-16, ethoxylated	88002-97-1	50.00000	0.00041	None	
			Methanol	67-56-1	5.00000	0.00004	None	
			Formaldehyde	50-00-0	1.00000	0.00001	None	
			Thiourea	62-56-6	1.00000	0.00001	None	
			Water	7732-18-5	55.00000	0.04368		
			Hydrotreated Petroleum Distillate	64742-47-8	25.00000	0.01985		
			Sodium Chloride	7647-14-5	15.00000	0.01191		
			Polyethylene glycol	25322-68-3	50.00000	0.01042		
			Ethylene glycol	107-21-1	40.00000	0.00712		
			Water	7732-18-5	30.00000	0.00625		
			Ammonium glycolate	35249-89-9	20.00000	0.00416		
			Alcohol Ethoxylate Surfactants	88551-12-2	3.00000	0.00238		
			Oleic Acid Diethanolamide	93-83-4	3.00000	0.00238		
			Ammonium Chloride	12125-02-9	2.00000	0.00159		
			Hydroxyacetic acid	79-14-1	5.00000	0.00104		
			Polyoxyethylene Sorbitan Monoleate	9005-65-6	1.00000	0.00079		
			Alcohol, C10-16, ethoxylated	88002-97-1	50.00000	0.00041		
			Methanol	67-56-1	5.00000	0.00004		
			Formaldehyde	50-00-0	1.00000	0.00001		
			Thiourea	62-56-6	1.00000	0.00001		

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water  
 \*\* Information is based on the maximum potential for concentration and thus the total may be over 100%  
 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(f) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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REFERENCE WELLPATH IDENTIFICATION  
 Operator CHEVRON APPALACHIA, LLC  
 Area Marshall County, WV  
 Field Marshall County  
 Facility Hicks Pad  
 Slot #09  
 Well Hicks M09H  
 Wellbore Hicks M09H AWP  
 Wellpath Hicks M09H AWP Proj: 15878'  
 Sidetrack (none)

REPORT SETUP INFORMATION

Projection NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet  
 North Refe TRUE  
 Scale 0.99995  
 Convergen 0.78° West  
 Software S WellArchitect® 5.1  
 User Jacostec  
 Report Ger 8/21/2019 at 11:27  
 Database:\WA\_MPL\_EASTERNUUS\_Defn\ev351.xml

WELLPATH Local North Local East Easting Northing Latitude Longitude

	[ft]	[ft]	[US ft]	[US ft]		
Slot Locatic	-67.19	45.14	1626613	501922.7	39°52'17.9	80°43'05.290"W
Facility Ref			1626569	501990.5	39°52'18.6	80°43'05.869"W
Field Refer			1644569	516963.8	39°54'48.9	80°39'17.476"W

WELLPATH DATUM

Calculation Minimum curvature  
 Horizontal Slot  
 Vertical Re Precision 560 (RKB)  
 MD Refere Precision 560 (RKB)  
 Field Vertic Mean Sea Level  
 Precision 5 25.00ft  
 Precision 5 1165.00ft  
 Precision 5 25.00ft  
 Section Ori N 0.00, E 0.00 ft  
 Section Azi 140.90°

WELLPATH DATA + = interpolated/extrapolated station

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure	Dis Closure	Dir DLS	Build Rate	Turn Rate
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]
0	0	0	152.25	0	0	0	1626613	501922.7	39°52'17.9	80°43'05.2	0	0	0	0	0
25	0	0	152.25	25	0	0	1626613	501922.7	39°52'17.9	80°43'05.2	0	0	0	0	0
101	0.23	152.25	101	0.15	-0.13	0.07	1626613	501922.6	39°52'17.9	80°43'05.2	0.15	152.25	0.3	0.3	200.33
126	0.5	175.81	126	0.29	-0.29	0.1	1626613	501922.4	39°52'17.9	80°43'05.2	0.31	160.446	1.21	1.08	94.24

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151	0.42	193.84	151	0.43	-0.49	0.09	1626613	501922.2	39°52'17.9	80°43'05.2	0.49	169.689	0.66	-0.32	72.12
176	0.64	183.06	176	0.59	-0.71	0.06	1626613	501922	39°52'17.9	80°43'05.2	0.72	175.275	0.96	0.88	-43.12
201	0.66	186.87	201	0.8	-1	0.03	1626613	501921.7	39°52'17.9	80°43'05.2	1	178.026	0.19	0.08	15.24
226	0.65	184.53	225.99	1	-1.28	0.01	1626613	501921.5	39°52'17.9	80°43'05.2	1.28	179.734	0.11	-0.04	-9.36
251	0.59	194.07	250.99	1.18	-1.55	-0.04	1626613	501921.2	39°52'17.9	80°43'05.2	1.55	181.353	0.48	-0.24	38.16
276	0.55	196.36	275.99	1.32	-1.79	-0.1	1626613	501920.9	39°52'17.9	80°43'05.2	1.79	183.255	0.18	-0.16	9.16
301	0.68	179.53	300.99	1.51	-2.05	-0.13	1626613	501920.7	39°52'17.9	80°43'05.2	2.06	183.745	0.88	0.52	-67.32
326	0.53	194.22	325.99	1.69	-2.31	-0.16	1626613	501920.4	39°52'17.9	80°43'05.2	2.32	183.995	0.86	-0.6	58.76
351	0.58	176.67	350.99	1.86	-2.55	-0.18	1626613	501920.2	39°52'17.9	80°43'05.2	2.56	184.093	0.71	0.2	-70.2
376	0.64	189.48	375.99	2.06	-2.81	-0.2	1626613	501919.9	39°52'17.9	80°43'05.2	2.82	184.028	0.59	0.24	51.24
401	0.73	197.95	400.98	2.24	-3.1	-0.27	1626612	501919.6	39°52'17.9	80°43'05.2	3.11	184.977	0.54	0.36	33.88
426	0.76	202.72	425.98	2.4	-3.41	-0.38	1626612	501919.3	39°52'17.9	80°43'05.2	3.43	186.419	0.28	0.12	19.08
451	0.84	200.71	450.98	2.57	-3.73	-0.51	1626612	501919.3	39°52'17.9	80°43'05.2	3.77	187.815	0.34	0.32	-8.04
453.97	0.86	200.48	453.95	2.6	-3.77	-0.53	1626612	501919.9	39°52'17.9	80°43'05.2	3.81	187.961	0.68	0.67	-7.74
474	0.8	192.95	473.98	2.76	-4.05	-0.61	1626612	501918.7	39°52'17.9	80°43'05.2	4.1	188.587	0.62	-0.3	-37.59
504	0.89	203.62	503.97	2.99	-4.47	-0.75	1626612	501918.3	39°52'17.9	80°43'05.3	4.53	189.553	0.6	0.3	35.57
556	1.07	200.55	555.97	3.42	-5.29	-1.08	1626612	501917.5	39°52'17.9	80°43'05.3	5.4	191.577	0.36	0.35	-5.9
568	1.06	193.26	567.96	3.55	-5.51	-1.15	1626612	501917.2	39°52'17.9	80°43'05.3	5.62	191.788	1.13	-0.08	-60.75
599	1.24	198	598.96	3.9	-6.1	-1.32	1626611	501916.6	39°52'17.9	80°43'05.3	6.24	192.189	0.66	0.58	15.29
629	1.17	198.52	628.95	4.25	-6.7	-1.52	1626611	501916.1	39°52'17.9	80°43'05.3	6.87	192.744	0.24	-0.23	1.73
661	1.02	202.21	660.95	4.56	-7.28	-1.73	1626611	501915.5	39°52'17.9	80°43'05.3	7.48	193.355	0.52	-0.47	11.53
691	1.09	202.92	690.94	4.82	-7.79	-1.94	1626611	501915.5	39°52'17.9	80°43'05.3	8.02	193.987	0.24	0.23	2.37
723	1.24	201.74	722.93	5.13	-8.39	-2.19	1626611	501914.4	39°52'17.9	80°43'05.3	8.67	194.608	0.47	0.47	-3.69
755	1.49	203.19	754.92	5.49	-9.09	-2.48	1626610	501913.7	39°52'17.9	80°43'05.3	9.42	195.247	0.79	0.78	4.53
786	1.75	205.23	785.91	5.89	-9.89	-2.84	1626610	501912.9	39°52'17.8	80°43'05.3	10.29	196.014	0.86	0.84	6.58
816	2.14	208.93	815.9	6.29	-10.8	-3.3	1626609	501912	39°52'17.8	80°43'05.3	11.29	197.022	1.37	1.3	12.33
851	2.67	207.69	850.86	6.86	-12.09	-4	1626609	501910.7	39°52'17.8	80°43'05.3	12.73	198.308	1.52	1.51	-3.54
880	3.14	209.07	879.83	7.42	-13.38	-4.7	1626608	501909.4	39°52'17.8	80°43'05.3	14.18	199.352	1.64	1.62	4.76
909	3.46	209.92	908.78	8.03	-14.83	-5.52	1626607	501908.6	39°52'17.8	80°43'05.3	15.83	200.418	1.39	1.31	7.09
941	3.88	212.19	940.71	8.72	-16.59	-6.58	1626606	501906.2	39°52'17.8	80°43'05.3	17.84	201.639	1.12	1.12	2.93
973	4.09	211.36	972.64	9.45	-18.48	-7.75	1626605	501904.4	39°52'17.8	80°43'05.3	20.04	202.757	0.68	0.66	-2.59
1001	4.34	210.94	1000.56	10.15	-20.24	-8.82	1626604	501902.6	39°52'17.7	80°43'05.4	22.08	203.536	0.9	0.89	-1.5
1033	4.49	214.65	1032.46	10.91	-22.31	-10.15	1626602	501900.6	39°52'17.7	80°43'05.4	24.51	204.466	1.01	0.47	11.59
1066	4.4	220.22	1065.37	11.51	-24.34	-11.7	1626601	501898.6	39°52'17.7	80°43'05.4	27	205.679	1.34	-0.27	16.88
1159	4.99	227.17	1158.05	12.43	-29.81	-16.97	1626596	501893.2	39°52'17.6	80°43'05.6	34.3	209.654	0.88	0.63	7.47
1253	7.4	232.43	1251.5	12.54	-36.28	-24.77	1626588	501886.8	39°52'17.5	80°43'05.8	43.93	214.321	2.63	2.56	5.6
1385	12.62	250.16	1381.47	7.55	-46.37	-45.09	1626567	501877	39°52'17.5	80°43'05.8	64.68	224.199	4.55	3.95	13.43
1479	16.66	252.58	1472.4	-0.82	-53.89	-67.61	1626545	501869.8	39°52'17.4	80°43'06.1	86.46	231.444	4.35	4.3	2.57
1573	17.9	247.19	1562.17	-9.85	-63.53	-93.79	1626518	501860.5	39°52'17.3	80°43'06.4	113.28	235.889	2.15	1.32	-5.73
1666	17.16	244.93	1650.85	-17.19	-74.88	-119.39	1626492	501849.5	39°52'17.2	80°43'06.8	140.93	237.905	1.08	-0.8	-2.43
1760	16.19	242.65	1740.89	-23.22	-86.78	-143.59	1626468	501837.9	39°52'17.1	80°43'07.1	167.78	238.854	1.24	-1.03	-2.43
1853	16.87	242.3	1830.05	-28.53	-99.01	-167.06	1626445	501826	39°52'17.0	80°43'07.4	194.19	239.347	0.74	0.73	-0.38
1947	17.01	241.39	1919.97	-33.72	-111.93	-191.2	1626420	501813.4	39°52'16.8	80°43'07.7	221.56	239.655	0.32	0.15	-0.97
2040	17.52	241.4	2008.78	-38.75	-125.15	-215.44	1626396	501800.5	39°52'16.7	80°43'08.0	249.15	239.848	0.55	0.55	0.01
2098	17.66	241.81	2064.07	-42.01	-133.48	-230.86	1626380	501792.4	39°52'16.6	80°43'08.2	266.67	239.964	0.32	0.24	0.71
2187	20.07	241.7	2148.28	-47.43	-147.1	-256.2	1626355	501779.1	39°52'16.5	80°43'08.5	295.43	240.138	2.71	2.71	-0.12
2277	25	243.4	2231.38	-54.44	-162.95	-286.82	1626324	501763.7	39°52'16.3	80°43'08.9	329.88	240.399	5.52	5.48	1.89
2366	26.98	242.26	2311.38	-62.49	-180.77	-321.51	1626289	501746.4	39°52'16.2	80°43'09.4	368.84	240.654	2.29	2.22	-1.28
2456	29.93	236.9	2390.51	-68.86	-202.54	-358.4	1626252	501725.1	39°52'15.9	80°43'09.8	411.67	240.529	4.33	3.28	-5.96
2545	30.16	230.19	2467.58	-70.9	-228.98	-394.19	1626216	501699.1	39°52'15.7	80°43'10.3	455.87	239.848	3.78	0.26	-7.54
2635	31.18	232.16	2544.99	-71.14	-257.75	-429.96	1626179	501670.8	39°52'15.4	80°43'10.8	501.3	239.058	1.59	1.13	2.19

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2724	34.08	237.82	2619.95	-74.65	-285.18	-469.27	1626140	501644	39°52'15.1	80°43'11.3	549.13	238.713	4.73	3.26	6.36
2814	36.11	239.68	2693.59	-81.73	-312	-513.52	1626095	501617.7	39°52'14.9	80°43'11.8	600.87	238.718	2.55	2.26	2.07
2903	40.7	238.43	2763.31	-89.54	-340.45	-560.9	1626047	501589.9	39°52'14.6	80°43'12.4	656.14	238.744	5.23	5.16	-1.4
2993	42.79	235.01	2830.47	-95.58	-373.35	-610.96	1625997	501557.7	39°52'14.3	80°43'13.1	716	238.572	3.43	2.32	-3.8
3082	43.33	232.32	2895.5	-98.51	-409.35	-659.9	1625948	501522.4	39°52'13.9	80°43'13.7	776.55	238.188	2.15	0.61	-3.02
3172	43.46	230.81	2960.9	-99.22	-447.79	-708.33	1625899	501484.6	39°52'13.5	80°43'14.3	838	237.7	1.16	0.14	-1.68
3261	43.5	230.64	3025.48	-99.04	-486.55	-755.74	1625851	501446.5	39°52'13.1	80°43'14.9	898.82	237.226	0.14	0.04	-0.19
3350	43.27	231.97	3090.16	-99.47	-524.77	-803.45	1625802	501408.9	39°52'12.8	80°43'15.5	959.64	236.849	1.06	-0.26	1.49
3440	43.56	233.83	3155.54	-101.63	-562.08	-852.78	1625753	501372.3	39°52'12.4	80°43'16.2	1021.35	236.611	1.46	0.32	2.07
3530	42.92	234.03	3221.1	-104.89	-598.38	-902.61	1625702	501336.7	39°52'12.0	80°43'16.8	1082.95	236.458	0.73	-0.71	0.22
3619	44.03	235.43	3285.69	-108.98	-633.73	-952.61	1625652	501302	39°52'11.7	80°43'17.5	1144.15	236.366	1.65	1.25	1.57
3709	44.27	236.62	3350.27	-114.58	-668.76	-1004.6	1625599	501267.7	39°52'11.3	80°43'18.1	1206.84	236.348	0.96	0.27	1.32
3799	44.3	236.63	3414.7	-120.74	-703.42	-1057.01	1625546	501233.7	39°52'10.6	80°43'18.8	1269.68	236.357	0.15	0.03	-0.21
3888	44.3	235.88	3478.39	-126.44	-738.04	-1108.64	1625494	501199.8	39°52'10.3	80°43'20.8	1331.83	236.348	0.43	0	-0.62
3978	44.3	235.83	3542.81	-131.87	-773.32	-1160.66	1625442	501165.3	39°52'10.3	80°43'21.8	1457.21	236.288	0.04	0	-0.06
4068	43.72	235.07	3607.53	-136.83	-808.78	-1212.16	1625390	501130.5	39°52'09.9	80°43'21.4	1518.76	236.176	0.87	-0.64	-0.84
4157	43.82	234.96	3671.8	-141.25	-844.08	-1262.6	1625339	501095.9	39°52'09.6	80°43'21.4	1578.54	236.236	0.14	0.11	-0.12
4247	43.78	234.45	3736.76	-145.38	-880.07	-1313.45	1625288	501060.6	39°52'09.2	80°43'22.1	1643.54	236.126	0.39	-0.04	-0.57
4337	44.22	235.25	3801.5	-149.69	-916.07	-1364.57	1625236	501025.3	39°52'08.9	80°43'22.7	1705.66	236.111	0.79	0.49	0.89
4426	44.32	236.18	3865.23	-154.9	-951.06	-1415.9	1625184	500991.3	39°52'08.5	80°43'23.4	1767.84	236.113	0.74	0.11	1.04
4515	44.32	237.12	3928.91	-161.13	-985.24	-1467.84	1625132	500957.5	39°52'08.2	80°43'24.1	1830.69	236.177	0.62	-0.01	0.89
4605	44.31	237.92	3993.31	-168.38	-1019.01	-1520.87	1625078	500924.5	39°52'07.9	80°43'24.7	1893.55	236.243	0.38	0.06	0.53
4695	44.36	238.4	4057.68	-176.33	-1052.19	-1574.31	1625025	500892	39°52'07.5	80°43'25.4	1955.68	236.317	0.29	-0.1	0.38
4784	44.27	238.74	4121.36	-184.63	-1084.61	-1627.36	1624971	500860.3	39°52'07.2	80°43'26.1	2018.48	236.381	0.58	0.04	-0.82
4874	44.31	238	4185.78	-192.8	-1117.57	-1680.87	1624917	500828.1	39°52'06.9	80°43'26.8	2080.61	236.422	0.41	-0.04	-0.58
4963	44.27	237.48	4249.49	-200.2	-1150.74	-1733.42	1624864	500795.7	39°52'06.6	80°43'27.5	2143.45	236.446	0.37	0.03	-0.53
5053	44.3	237	4313.92	-207.14	-1184.74	-1786.27	1624811	500762.4	39°52'06.2	80°43'28.1	2205.59	236.455	0.36	-0.03	-0.52
5142	44.27	236.54	4377.63	-213.5	-1218.8	-1838.25	1624758	500729	39°52'05.9	80°43'28.8	2268.44	236.447	0.58	0.06	-0.82
5232	44.32	235.8	4442.05	-219.27	-1253.79	-1890.46	1624706	500694.8	39°52'05.5	80°43'29.5	2330.58	236.421	0.51	-0.06	-0.72
5321	44.27	235.16	4505.75	-224.23	-1289.01	-1941.67	1624654	500660.2	39°52'05.2	80°43'30.1	2393.37	236.373	0.91	0	-1.3
5411	44.27	233.99	4570.2	-228.26	-1325.42	-1992.86	1624602	500624.5	39°52'04.8	80°43'30.8	2455.48	236.305	0.47	0.09	-0.66
5500	44.35	233.4	4633.89	-231.29	-1362.23	-2042.96	1624552	500588.4	39°52'04.5	80°43'31.4	2518.25	236.225	0.5	-0.08	-0.7
5590	44.28	232.77	4698.28	-233.69	-1400	-2093.23	1624501	500551.3	39°52'04.1	80°43'32.1	2580.4	236.14	0.27	0.26	-0.1
5679	44.51	232.68	4761.88	-235.67	-1437.71	-2142.78	1624451	500514.3	39°52'03.7	80°43'32.7	2643.4	236.057	0.03	0.02	-0.02
5769	44.53	232.66	4826.05	-237.62	-1475.97	-2192.95	1624400	500476.7	39°52'03.4	80°43'33.4	2705.79	235.986	0.5	0.15	0.67
5858	44.66	233.26	4889.42	-239.86	-1513.61	-2242.83	1624350	500439.7	39°52'03.0	80°43'34.0	2768.94	235.935	0.77	-0.13	1.08
5948	44.54	234.23	4953.51	-243	-1550.98	-2293.79	1624298	500403.1	39°52'02.6	80°43'34.7	2831.33	235.912	1.05	-0.04	1.49
6037	44.5	235.56	5016.96	-247.35	-1586.87	-2344.84	1624247	500367.9	39°52'02.3	80°43'35.3	2894.44	235.912	0.58	0.07	0.82
6127	44.56	236.3	5081.12	-252.88	-1622.23	-2397.12	1624194	500333.2	39°52'01.9	80°43'36.0	2956.88	235.926	0.39	-0.01	0.55
6216	44.55	236.79	5144.54	-259.02	-1656.65	-2449.21	1624142	500299.5	39°52'01.6	80°43'36.7	3019.57	235.951	1	-0.86	0.76
6306	43.78	237.47	5209.1	-265.83	-1690.68	-2501.88	1624088	500266.2	39°52'00.9	80°43'38.0	3081.26	236.039	0.62	0.62	1.07
6395	44.04	238.42	5273.22	-273.4	-1723.44	-2554.19	1624036	500232.4	39°52'00.6	80°43'38.4	3143.38	236.061	2.02	-0.01	-2.88
6484	44.59	238.47	5336.9	-281.56	-1755.98	-2607.17	1623982	500202.4	39°52'00.2	80°43'38.7	3206.53	236.016	3.45	-0.1	-4.92
6574	44.58	235.88	5401.01	-288.47	-1790.22	-2660.25	1623929	500168.8	39°52'00.2	80°43'39.4	3268.87	235.931	1.34	0.37	1.84
6663	44.49	231.5	5464.46	-291.5	-1827.16	-2710.53	1623878	500132.6	39°51'59.9	80°43'40.0	3331.6	235.865	0.29	-0.29	0.02
6753	44.23	231.52	5528.81	-292.17	-1866.32	-2759.78	1623828	500094.1	39°51'59.5	80°43'40.6	3393.74	235.826	0.85	-0.13	1.2
6842	44.56	233.16	5592.41	-293.74	-1904.36	-2809.07	1623778	500056.7	39°51'59.1	80°43'41.3	3456.08	235.801	0.33	0.04	0.47
6931	44.44	234.23	5655.89	-296.78	-1941.3	-2859.34	1623728	500020.5	39°51'58.8	80°43'41.9	3519.09	235.801	0.18	0.11	0.2
7021	44.48	234.65	5720.12	-300.67	-1977.95	-2910.62	1623676	499984.5	39°51'58.4	80°43'42.6	3581.49	235.78	0.33	0.04	0.47
7110	44.58	234.47	5783.57	-304.66	-2014.15	-2961.47	1623625	499949	39°51'58.0	80°43'43.2	3643.66	235.684	6.82	-1.17	-9.67
7200	43.53	225.77	5848.31	-303.85	-2054.16	-3009.43	1623576	499909.7	39°51'57.6	80°43'43.8	3643.66	235.684	6.82	-1.17	-9.67

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7289	43.6	217.38	5912.85	-293.93	-2099.96	-3050.06	1623535	499864.4	39°51'57.2	80°43'44.4	3703.06	235.453	6.49	0.08	-9.43
7379	46.4	209.47	5976.54	-274.75	-2153.04	-3084.96	1623499	499811.8	39°51'56.7	80°43'44.8	3761.99	235.088	6.95	3.11	-8.79
7468	53.45	201.4	6033.85	-245.31	-2214.52	-3113.93	1623469	499750.7	39°51'55.1	80°43'45.2	3821.08	234.581	10.52	7.92	-9.07
7558	57.47	190.76	6084.97	-202.95	-2285.62	-3134.25	1623448	499679.9	39°51'55.4	80°43'45.4	3879.12	233.899	10.71	4.47	-11.82
7647	56.66	179.31	6133.47	-149.5	-2359.83	-3140.82	1623441	499605.8	39°51'54.6	80°43'45.5	3928.55	233.081	10.83	-0.91	-12.87
7736	56.37	171.45	6182.63	-88.4	-2433.72	-3134.86	1623445	499531.9	39°51'53.9	80°43'45.4	3968.67	232.176	7.37	-0.33	-8.83
7826	59.43	165.52	6230.48	-20.85	-2508.35	-3119.59	1623460	499457.7	39°51'53.1	80°43'45.2	4002.96	231.198	6.53	3.4	-6.59
7915	65.77	161.09	6271.43	52.17	-2583.95	-3096.82	1623481	499381.1	39°51'52.4	80°43'45.0	4033.25	230.159	8.38	7.12	-4.98
8005	73.72	157.36	6302.57	132.27	-2662.79	-3066.84	1623510	499301.9	39°51'51.6	80°43'44.6	4061.52	229.034	9.65	8.83	-4.14
8094	76.11	154.22	6325.74	215.3	-2741.14	-3031.59	1623545	499223.1	39°51'50.8	80°43'44.1	4087.1	227.88	4.34	2.69	-3.53
8184	76.11	153.43	6347.35	300.45	-2819.55	-2993.05	1623582	499144.2	39°51'50.1	80°43'43.6	4111.96	226.71	0.85	0	-0.88
8273	81.75	153.32	6364.43	385.7	-2897.6	-2953.93	1623620	499065.6	39°51'49.3	80°43'43.1	4137.84	225.552	6.34	6.34	-0.12
8362	89.51	151.24	6371.21	472.63	-2976.09	-2912.67	1623660	498986.6	39°51'48.5	80°43'42.6	4164.22	224.383	9.02	8.72	-2.34
8452	90.34	147.69	6371.32	561.61	-3053.59	-2866.96	1623705	498908.5	39°51'47.8	80°43'42.0	4188.54	223.194	4.05	0.92	-3.94
8541	90.37	141.91	6370.77	650.36	-3126.29	-2815.68	1623755	498835.1	39°51'47.0	80°43'41.3	4207.34	222.008	6.49	0.03	-6.49
8630	88.77	139.2	6371.44	739.35	-3195	-2759.14	1623811	498765.6	39°51'46.4	80°43'40.6	4221.48	220.813	3.54	-1.8	-3.04
8720	88.92	147.02	6373.26	829.19	-3266.91	-2705.17	1623864	498693.3	39°51'45.7	80°43'39.9	4241.54	219.626	8.69	0.17	8.69
8809	90.28	146.21	6373.88	917.75	-3341.22	-2656.2	1623912	498618.3	39°51'44.9	80°43'39.3	4268.39	218.484	1.78	1.53	-0.91
8899	89.48	139.88	6374.07	1007.64	-3413.11	-2602.12	1623965	498545.4	39°51'44.2	80°43'38.6	4291.89	217.322	7.09	-0.89	-7.03
8989	88.89	137.2	6375.35	1097.54	-3480.54	-2542.54	1624024	498477.2	39°51'43.5	80°43'37.8	4310.3	216.148	3.05	-0.66	-2.98
9078	90.12	134.21	6376.12	1186.16	-3544.23	-2480.4	1624085	498412.6	39°51'42.9	80°43'37.0	4325.96	214.986	3.63	1.38	-3.36
9168	88.58	137.7	6377.14	1275.8	-3608.91	-2417.84	1624146	498347.1	39°51'42.3	80°43'36.2	4343.98	213.821	4.24	-1.71	3.88
9257	88.95	142.41	6379.06	1364.75	-3677.11	-2360.73	1624203	498278.2	39°51'41.6	80°43'35.5	4369.69	212.701	5.31	0.42	5.29
9346	89.26	142.69	6380.45	1453.7	-3747.75	-2306.62	1624256	498206.8	39°51'40.9	80°43'34.8	4400.7	211.611	0.47	0.35	0.31
9436	88.83	142.71	6381.95	1543.64	-3819.34	-2252.09	1624309	498134.5	39°51'40.2	80°43'34.1	4433.87	210.526	0.48	-0.48	0.02
9525	89.17	143.48	6383.5	1632.56	-3890.49	-2198.65	1624362	498062.6	39°51'39.5	80°43'33.4	4468.78	209.472	0.95	0.38	0.87
9614	88.61	143.09	6385.22	1721.47	-3961.82	-2145.46	1624414	497990.6	39°51'38.8	80°43'32.8	4505.44	208.437	0.77	-0.63	-0.44
9704	89.35	142.56	6386.83	1811.4	-4033.52	-2091.08	1624467	497918.1	39°51'38.1	80°43'32.1	4543.34	207.403	1.01	0.82	-0.59
9793	89.6	142.73	6387.64	1900.36	-4104.26	-2037.08	1624520	497846.7	39°51'37.4	80°43'31.4	4582	206.397	0.34	0.28	0.19
9882	88.95	142.69	6388.77	1989.31	-4175.06	-1983.17	1624573	497775.2	39°51'36.7	80°43'30.7	4622.13	205.408	0.73	-0.73	-0.04
9972	91.02	143.37	6388.79	2079.24	-4246.96	-1929.05	1624627	497702.5	39°51'36.0	80°43'30.0	4664.54	204.428	2.42	2.3	0.76
10062	90	140.79	6387.99	2169.21	-4317.95	-1873.74	1624681	497630.8	39°51'35.3	80°43'29.3	4706.98	203.458	3.08	-1.13	-2.87
10151	89.14	139.53	6388.66	2258.19	-4386.29	-1816.73	1624737	497561.7	39°51'34.6	80°43'28.5	4747.63	202.499	1.71	-0.97	-1.42
10240	89.42	139.95	6389.78	2347.17	-4454.2	-1759.22	1624794	497493.3	39°51'33.9	80°43'27.8	4789.02	201.552	0.57	0.31	0.47
10330	89.6	140.62	6390.55	2437.16	-4523.43	-1701.71	1624850	497423.3	39°51'33.2	80°43'27.1	4832.93	200.616	0.77	0.2	0.74
10419	88.68	140.88	6391.88	2526.15	-4592.34	-1645.41	1624905	497353.4	39°51'32.6	80°43'26.3	4878.21	199.712	1.07	-1.03	0.29
10509	89.41	139.04	6393.38	2616.12	-4661.23	-1587.52	1624962	497283.7	39°51'31.9	80°43'25.6	4924.15	198.808	2.2	0.81	-2.04
10598	89.32	140.41	6394.37	2705.09	-4729.13	-1529.99	1625019	497215.3	39°51'31.2	80°43'24.9	4970.46	197.928	1.54	-0.1	1.54
10688	89.45	140.43	6395.33	2795.09	-4798.49	-1472.65	1625075	497144.9	39°51'30.5	80°43'24.1	5019.38	197.061	0.15	0.14	0.02
10777	89.6	140.19	6396.07	2884.08	-4866.97	-1415.81	1625131	497075.7	39°51'29.8	80°43'23.4	5068.72	196.22	0.32	0.17	-0.27
10866	88.95	142.12	6397.2	2973.06	-4936.28	-1360	1625186	497005.6	39°51'29.2	80°43'22.7	5120.2	195.403	2.29	-0.73	2.17
10955	90.83	140.4	6397.37	3062.06	-5005.69	-1304.31	1625241	496935.4	39°51'28.5	80°43'22.0	5172.83	194.605	2.86	2.11	-1.93
11045	89.54	140.55	6397.08	3152.05	-5075.11	-1247.03	1625297	496865.3	39°51'27.8	80°43'21.2	5226.08	193.805	1.44	-1.43	0.17
11134	89.29	141.41	6397.99	3241.04	-5144.26	-1191	1625352	496795.4	39°51'27.1	80°43'20.5	5280.33	193.035	1.01	-0.28	0.97
11224	88.25	144.93	6399.92	3330.94	-5216.26	-1137.07	1625405	496722.6	39°51'26.4	80°43'19.8	5338.76	192.297	4.08	-1.16	3.91
11313	88.89	146.29	6402.14	3419.61	-5289.68	-1086.82	1625455	496648.5	39°51'25.7	80°43'19.2	5400.18	191.61	1.69	0.72	1.53
11403	88.8	144.82	6403.96	3509.29	-5363.89	-1035.93	1625504	496573.7	39°51'24.9	80°43'18.5	5463	190.931	1.64	-0.1	-1.63
11492	89.72	144.14	6405.11	3598.11	-5436.32	-984.23	1625555	496500.5	39°51'24.2	80°43'17.9	5524.69	190.262	1.29	1.03	-0.76
11581	88.4	138.86	6406.57	3687.06	-5505.93	-928.85	1625610	496430.2	39°51'23.5	80°43'17.2	5583.73	189.576	6.11	-1.48	-5.93
11670	88.52	141.61	6408.96	3776.01	-5574.31	-871.95	1625665	496361.3	39°51'22.9	80°43'16.4	5642.1	188.89	3.09	0.13	3.09
11760	89.14	144.56	6410.8	3865.92	-5646.25	-817.91	1625719	496288.4	39°51'22.1	80°43'15.7	5705.18	188.242	3.35	0.69	3.28

MAR 18 2020

WV Department of  
Environmental Protection

Well ID	Ref Wellbore	Hicks M09H AWB	Ref Wellbore	Hicks M09H AWP Proj: 15878'											
String/Diag	Start MD	End MD	Interval	Start TVD	End TVD	Start N/S	Start E/W	End N/S	End E/W						
[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]						
11849	89.66	146.39	6411.73	3954.62	-5719.57	-767.47	1625768	496214.4	39°51'21.4	80°43'15.1	5770.83	187.643	2.14	0.58	2.06
11938	90.22	143.46	6411.82	4043.39	-5792.4	-716.33	1625818	496140.9	39°51'20.7	80°43'14.4	5836.52	187.05	3.35	0.63	-3.29
12028	89.2	143.41	6412.28	4133.3	-5864.68	-662.72	1625871	496067.9	39°51'20.0	80°43'13.7	5902.01	186.447	1.13	-1.13	-0.06
12117	89.6	145	6413.21	4222.15	-5936.86	-610.67	1625922	495995.3	39°51'19.3	80°43'13.1	5968.19	185.873	1.84	0.45	1.79
12207	90.22	140.64	6413.35	4312.07	-6008.55	-556.29	1625975	495922.6	39°51'18.6	80°43'12.4	6034.25	185.29	4.89	0.69	-4.84
12296	89.97	135.13	6413.2	4400.92	-6074.55	-496.63	1626034	495855.8	39°51'17.9	80°43'11.6	6094.81	184.674	6.2	-0.28	-6.19
12385	89.48	139.12	6413.63	4489.7	-6139.76	-436.09	1626094	495789.8	39°51'17.3	80°43'10.8	6155.22	184.063	4.52	-0.55	4.48
12475	89.75	139.23	6414.24	4579.66	-6207.86	-377.25	1626152	495720.9	39°51'16.6	80°43'10.1	6219.31	183.478	0.32	0.3	0.12
12564	89.29	137.91	6414.98	4668.58	-6274.58	-318.37	1626209	495653.4	39°51'15.9	80°43'09.3	6282.65	182.905	1.57	-0.52	-1.48
12654	89.63	143.71	6415.83	4758.54	-6344.31	-261.52	1626265	495582.9	39°51'15.2	80°43'08.6	6349.69	182.36	6.46	0.38	6.44
12743	89.85	140.46	6416.23	4847.51	-6414.51	-206.84	1626319	495512.3	39°51'14.5	80°43'07.9	6417.84	181.847	3.66	0.25	-3.65
12832	88.71	138.19	6417.35	4936.46	-6482	-148.84	1626376	495443.7	39°51'13.9	80°43'07.1	6483.71	181.315	2.85	-1.28	-2.55
12922	89.57	142.22	6418.7	5026.42	-6551.13	-91.26	1626433	495373.8	39°51'13.2	80°43'06.4	6551.76	180.798	4.58	0.96	4.48
13011	89.75	140.33	6419.23	5115.42	-6620.56	-35.58	1626488	495303.6	39°51'12.5	80°43'05.7	6620.65	180.308	2.13	0.2	-2.12
13101	89.75	140.37	6419.62	5205.41	-6689.85	21.84	1626544	495233.5	39°51'11.8	80°43'05.0	6689.89	179.813	0.04	0	0.04
13190	89.29	141.57	6420.37	5294.41	-6758.98	77.89	1626599	495163.7	39°51'11.1	80°43'04.2	6759.43	179.34	1.44	-0.52	1.35
13280	89.32	137.77	6421.46	5384.36	-6827.58	136.12	1626656	495094.3	39°51'10.5	80°43'03.5	6828.93	178.858	4.22	0.03	-4.22
13369	89.02	141.41	6422.75	5473.31	-6895.32	193.8	1626713	495025.8	39°51'09.8	80°43'02.8	6898.05	178.39	4.1	-0.34	4.09
13458	89.82	137.93	6423.65	5562.28	-6963.16	251.39	1626770	494957.2	39°51'09.1	80°43'02.0	6967.69	177.932	4.01	0.9	-3.91
13548	90.03	137.43	6423.77	5652.13	-7029.7	311.98	1626830	494889.8	39°51'08.5	80°43'01.2	7036.62	177.459	0.6	0.23	-0.56
13637	90.28	129.35	6423.53	5740.3	-7090.79	376.6	1626893	494827.9	39°51'07.9	80°43'00.4	7100.78	176.96	9.08	0.28	-9.08
13727	89.45	132.81	6423.74	5828.96	-7149.92	444.43	1626960	494767.8	39°51'07.3	80°42'59.5	7163.72	176.443	3.95	-0.92	3.84
13816	89.91	139.15	6424.24	5917.59	-7213.89	506.25	1627021	494703.3	39°51'06.6	80°42'58.7	7231.63	175.986	7.14	0.52	7.12
13906	90.28	140.4	6424.09	6007.57	-7282.6	564.37	1627078	494633.5	39°51'06.0	80°42'58.0	7304.44	175.569	1.45	0.41	1.39
13995	90.8	134.95	6423.25	6096.39	-7348.37	624.27	1627137	494567.3	39°51'05.3	80°42'57.2	7374.84	175.144	6.15	0.58	-6.12
14085	90.18	137.93	6422.48	6186.1	-7413.58	686.28	1627199	494500.9	39°51'04.7	80°42'56.4	7445.28	174.711	3.38	-0.69	3.31
14174	90.15	138.15	6422.22	6274.99	-7479.76	745.78	1627257	494433.9	39°51'04.0	80°42'55.7	7516.85	174.306	0.25	-0.03	0.25
14264	90.15	140.45	6421.99	6364.95	-7547.99	804.47	1627315	494364.9	39°51'03.3	80°42'54.9	7590.74	173.916	2.56	0	2.56
14353	89.6	136.09	6422.18	6453.83	-7614.4	863.69	1627373	494297.7	39°51'02.7	80°42'54.2	7663.22	173.529	4.94	-0.62	-4.9
14443	89.26	143.04	6423.08	6543.75	-7682.85	922.03	1627431	494228.5	39°51'02.0	80°42'53.4	7737.98	173.157	7.73	-0.38	7.72
14532	89.42	137.75	6424.11	6632.71	-7751.39	978.74	1627486	494159.2	39°51'01.3	80°42'52.7	7812.94	172.804	5.95	0.18	-5.94
14622	89.32	135.55	6425.1	6722.45	-7816.83	1040.51	1627547	494092.9	39°51'00.7	80°42'51.9	7885.78	172.418	2.45	-0.11	-2.44
14711	88.83	136.41	6426.53	6811.11	-7880.82	1102.35	1627608	494028.1	39°51'00.1	80°42'51.1	7957.55	172.037	1.11	-0.55	0.97
14800	88.89	140.63	6428.3	6900	-7947.47	1161.28	1627666	493960.7	39°50'59.4	80°42'50.4	8031.87	171.687	4.74	0.07	4.74
14890	88.92	143.51	6430.02	6989.95	-8018.44	1216.58	1627721	493889.3	39°50'58.7	80°42'49.6	8110.21	171.373	3.2	0.03	3.2
14979	88.43	142.97	6432.08	7078.85	-8089.72	1269.83	1627773	493817.3	39°50'58.0	80°42'49.0	8188.78	171.079	0.82	-0.55	-0.61
15069	88.77	142.23	6434.28	7168.79	-8161.2	1324.48	1627827	493744.8	39°50'57.3	80°42'48.3	8267.97	170.782	0.9	0.38	-0.82
15159	89.35	142.19	6435.76	7258.75	-8232.31	1379.62	1627881	493672.9	39°50'56.6	80°42'47.6	8347.11	170.486	0.65	0.64	-0.04
15249	89.66	145.78	6436.54	7348.6	-8305.09	1432.53	1627933	493599.4	39°50'55.9	80°42'46.9	8427.74	169.985	4.47	0.34	3.99
15338	89.75	149.76	6436.99	7436.94	-8380.36	1479.99	1627979	493523.5	39°50'55.1	80°42'46.3	8510.05	169.539	1.22	-0.03	-1.22
15428	89.72	148.66	6437.41	7526	-8457.68	1526.05	1628024	493445.6	39°50'54.4	80°42'45.7	8594.25	169.772	4.29	0.44	4.27
15518	90.12	144.82	6437.54	7615.51	-8532.92	1575.4	1628072	493369.7	39°50'53.6	80°42'45.0	8677.13	169.263	8.1	-0.72	-8.07
15607	89.48	137.64	6437.85	7704.45	-8602.26	1631.1	1628127	493299.6	39°50'52.9	80°42'44.3	8755.54	168.961	0.92	0.66	0.99
15697	89.38	138.53	6438.74	7794.34	-8669.23	1691.22	1628186	493231.8	39°50'52.3	80°42'43.6	8832.66	168.666	1	-0.11	-0.64
15787	89.97	137.95	6439.25	7884.24	-8736.37	1751.16	1628245	493163.9	39°50'51.6	80°42'42.8	8910.14	168.443	3.38	-0.83	-3.27
15853	89.42	135.79	6439.6	7950.07	-8784.53	1796.28	1628290	493115.1	39°50'51.1	80°42'42.2	8966.3	168.357	0	0	0
15878	89.42	135.79	6439.86	7974.97	-8802.45	1813.71	1628307	493097.3	39°50'50.9	80°42'42.0	8987.36	168.357	0	0	0

HOLE AND CASING SECTIONS Ref Wellbore: Hicks M09H AWB Ref Wellbore: Hicks M09H AWP Proj: 15878'  
String/Diag Start MD End MD Interval Start TVD End TVD Start N/S Start E/W End N/S End E/W  
[ft] [ft] [ft] [ft] [ft] [ft] [ft] [ft] [ft] [ft]

26in Open	25	85	60	25	85	0	0	-0.08	0.04
20in Condu	25	85	60	25	85	0	0	-0.08	0.04
17.5in Ope	85	546	461	85	545.97	-0.08	0.04	-5.12	-1.02
13.375in C	25	521	496	25	520.97	0	0	-4.72	-0.86
12.25in Op	521	2112	1591	520.97	2077.39	-4.72	-0.86	-135.51	-234.64
9.625in Car	25	2055	2030	25	2023.08	0	0	-127.31	-219.41
8.5in Open	2112	15878	13766	2077.39	6439.86	-135.51	-234.64	-8802.45	1813.71
5.5in Casin	25	15878	15853	25	6439.86	0	0	-8802.45	1813.71

TARGETS

Name	TVD	North	East	Grid East	Grid North	Latitude	Longitude	Shape	Comment
	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			
Hicks M091	6372	-2934.49	-2952.71	1623621	499028.7	39°51'48.9	80°43'43.1	point	
Hicks - M0i	6377	-8801.59	1815.28	1628309	493097.8	39°50'51.0	80°42'42.0	point	
Hicks - M0i	6377	-2934.49	-2952.71	1623621	499028.7	39°51'48.9	80°43'43.1	point	
Hicks Pad -	6385	265.47	63.53	1626680	502187.3	39°52'20.6	80°43'04.4	polygon	
Hicks M091	6448	-8801.59	1815.28	1628309	493097.8	39°50'51.0	80°42'42.0	point	

WELLPATH COMPOSITION Ref Wellbore: Hicks M09H AWB Ref Wellpath: Hicks M09H AWP Proj: 15878'

Log Name/Start MD End MD Pos Unc Model

	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]
01_SDI Gyr	25	453.97	SDI Keeper v1.04						
02_SDI Gyr	453.97	1253	SDI Keeper v1.04						
04_APS EV	1253	2040	OWSG MWD rev2 + JFR1 + Multi-Station Correction						
05_BH AT (	2040	15853	OWSG MWD rev2 + JFR1 + Multi-Station Correction						
Projection	15853	15878	Blind Drilling (std)						

COMMENTS

Wellpath general comments  
 API: 47-051-01994-0000  
 BH Job#: 109886960  
 Rig: Precision 560  
 Duration: 8/8/2019 - 8/19/2019  
 01\_SDI Gyro <17-1/2> (100'-452.97)''  
 02\_SDI Gyro <12-1/4> (452.97) (473'-1252)''  
 04\_APS EM + MagVAR MSA <12-1/4> (453.97) (1385'-2040)''  
 05\_BH AT Curve+MagVAR MSA <8-1/2> (2040) (2098'-15853)''  
 Projected MD at TD: 15787'

RECEIVED  
 Office of Oil and Gas  
 MAR 18 2020  
 WV Department of  
 Environmental Protection





**Jackie M. Scholar**  
Regulatory Reporting Coordinator

March 16, 2020

**CERTIFIED MAIL: 7018 1830 0000 6083 3561**

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

RE: Well Operator's Report of Well Work WR-35  
**Hicks M09H**

Dear Sir/Madam,

Enclosed here within please find one (1) Well Operator's Report of Well Work WR-35, one (1) copy of the Plat on Mylar, one (1) copy of the FracFocus report, and one (1) copy of the Directional Survey for **Hicks M09H, (API 47-051-01994)**.

If you have any questions, please contact me at (412) 865-3422. Thank you.

Sincerely,  
Chevron Appalachia, LLC

Jackie M. Scholar

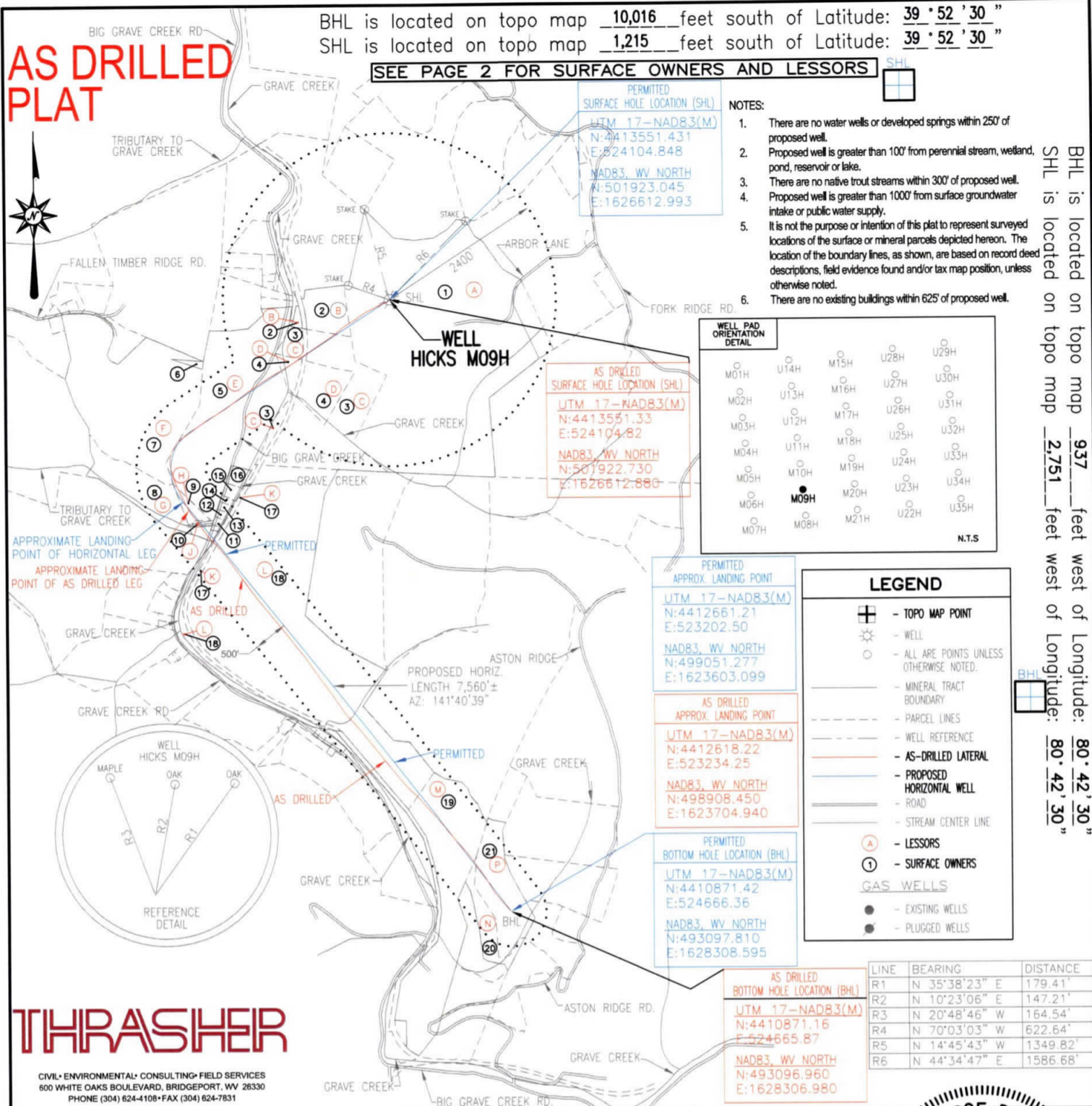
Enclosures

RECEIVED  
Office of Oil and Gas  
MAR 18 2020  
WV Department of  
Environmental Protection

BHL is located on topo map 10,016 feet south of Latitude: 39° 52' 30"  
 SHL is located on topo map 1,215 feet south of Latitude: 39° 52' 30"

**SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS**

# AS DRILLED PLAT



PERMITTED SURFACE HOLE LOCATION (SHL)  
 UTM 17-NAD83(M)  
 N:4413551.431  
 E:524104.848  
 NAD83, WV NORTH  
 N:501923.045  
 E:1626612.993

AS DRILLED SURFACE HOLE LOCATION (SHL)  
 UTM 17-NAD83(M)  
 N:4413551.33  
 E:524104.82  
 NAD83, WV NORTH  
 N:507922.730  
 E:1626612.880

- 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 native 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.
  - There are no existing buildings within 625' of proposed well.

WELL PAD ORIENTATION DETAIL

M01H	U14H	M15H	U28H	U29H
M02H	U13H	M16H	U27H	U30H
M03H	U12H	M17H	U26H	U31H
M04H	U11H	M18H	U25H	U32H
M05H	M10H	M19H	U24H	U33H
M06H	M09H	M20H	U23H	U34H
M07H	M08H	M21H	U22H	U35H

N.T.S.

**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
- LESSORS
- SURFACE OWNERS

**GAS WELLS**

- EXISTING WELLS
- PLUGGED WELLS

PERMITTED APPROX. LANDING POINT  
 UTM 17-NAD83(M)  
 N:4412661.21  
 E:523202.50  
 NAD83, WV NORTH  
 N:499051.277  
 E:1623603.099

AS DRILLED APPROX. LANDING POINT  
 UTM 17-NAD83(M)  
 N:4412618.22  
 E:523234.25  
 NAD83, WV NORTH  
 N:498908.450  
 E:1623704.940

PERMITTED BOTTOM HOLE LOCATION (BHL)  
 UTM 17-NAD83(M)  
 N:4410871.42  
 E:524666.36  
 NAD83, WV NORTH  
 N:493097.810  
 E:1628308.595

AS DRILLED BOTTOM HOLE LOCATION (BHL)  
 UTM 17-NAD83(M)  
 N:4410871.16  
 E:524665.87  
 NAD83, WV NORTH  
 N:493096.960  
 E:1628306.980

LINE	BEARING	DISTANCE
R1	N 35°38'23" E	179.41'
R2	N 10°23'06" E	147.21'
R3	N 20°48'46" W	164.54'
R4	N 70°03'03" W	622.64'
R5	N 14°45'43" W	1349.82'
R6	N 44°34'47" E	1586.68'

# THRASHER

CIVIL • ENVIRONMENTAL • CONSULTING • FIELD SERVICES  
 600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330  
 PHONE (304) 624-4108 • FAX (304) 624-7831

FILE #: HICKS M09H-AS DRILLED  
 DRAWING #: HICKS M09H-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: JANUARY 31, 2020  
 OPERATOR'S WELL #: HICKS M09H-AS DRILLED  
 API WELL #: 47 51 01994  
 STATE COUNTY PERMIT

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

WATERSHED: MIDDLE GRAVE CREEK-GRAVE CREEK ELEVATION: 1161.57'

COUNTY/DISTRICT: MARSHALL / CLAY QUADRANGLE: GLEN EASTON, WV 7.5'

SURFACE OWNER: THOMAS E. HICKS ACREAGE: 172.100±

OIL & GAS ROYALTY OWNER: CHRISTA DAWN HICKS ET AL ACREAGE: 648.023±

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION

PERFORATE NEW FORMATION  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE

(SPECIFY): AS DRILLED

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,320'± TMD: 16,888.73'±

WELL OPERATOR CHEVRON APPALACHIA, LLC DESIGNATED AGENT KENNETH E. TAWNEY  
 Address 700 CHERRINGTON PARKWAY Address 500 LEE STREET, EAST SUITE 1600  
 City CORAOPOLIS State PA Zip Code 15108 City CHARLESTON State WV Zip Code 25301-3202

BHL is located on topo map 937 feet west of Longitude: 80° 42' 30"  
 SHL is located on topo map 2,751 feet west of Longitude: 80° 42' 30"

# HICKS M09H PAGE 2 OF 2

## AS DRILLED PLAT

	LESSOR	DIST-TM/PAR
A	CHRISTA DAWN HICKS ET AL	4-8/37
B	SIDNEY P. POND ET UX	4-8/36.1
C	LILLIE LAVERN GAREY	4-8/36
D	SIDNEY P. POND ET UX	4-8/36.2
E	MABEL J. WILLIAMS	4-8/23
F	*BONAR FAMILY IREV TRST DTD 2/12/2009	4-8/18
G	*ROBERT D. RICHMOND ET UX	4-12/5
	*SUSAN V. PANNECK	
	*LINDA MARGARET JENKINS	
	*DANIEL EDWARD BRUNOFF	
	*GRETA BRUNOFF DURAN	
	*ZELMA PLATON GRUNOFF	
	*JOAN TOWNSEND SHRUM	
	*JEANNE K. GRAY	
	*DAVID MARK BURLEY	
	*JOAN MARIE FELDNER	
H	ROBERT D. RICHMOND ET UX	4-8/20
	CAROL J. RICHMOND	
	DAVID P. ROBINSON	
	CNX GAS COMPANY LLC	
	DIOCESES OF WHEELING - CHARLESTON	
	ROBERT S. WUERTHELE	
	MARK K. WUERTHELE	
	JEFFREY A. WUERTHELE	
	MICHAEL D. WUERTHELE	
	SISTERS OF ST. FRANCIS OF THE PROVIDENCE OF GOD	
MARY ANN BAKER		
ULMAN TRUST MARY ANN BAKER TRSTE		
SUSAN M. & BERNARD LUKE ZIDAR		
LAUREN M. TEKELY IRREVOCABLE TRUST		
M	HARRY ROUSH	4-11/3
N	HARRY ROUSH	4-11/6
P	ROY A. CLARK ET UX	4-10/9

PERMITTED  
SURFACE HOLE LOCATION (SHL)

UTM 17-NAD83(M)  
N:4413551.431  
E:524104.848

NAD83, WV NORTH  
N:501923.045  
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BOTTOM HOLE LOCATION (BHL)

UTM 17-NAD83(M)  
N:4410871.42  
E:524666.36

NAD83, WV NORTH  
N:493097.810  
E:1628308.595

	SURFACE OWNER	DIST-TM/PAR
1	THOMAS E. HICKS	4-8/37
2	VICKIE L. & SIDNEY P. POND	4-8/36.1
3	LILLIE LAVERN GAREY	4-8/36
4	SIDNEY P. POND ET UX	4-8/36.2
5	MABEL JUANITA WILLIAMS	4-8/23
6	HENRY W. & LINDA M. ASTON	4-8/19
7	*BONAR FAMILY IRREVOCABLE TR	4-8/18
8	*ROBERT D. & VIRGINIA RICHMOND	4-12/5
9	ROBERT D. & VIRGINIA RICHMOND	4-8/20
10	CAROL J. & DAVID P. ROBINSON	4-8/20.1
11	GLENN H. KESSELRING ET UX	4-8/21
12	SAMUEL HARLON & MISTY L. HALL	4-8/22
13	KERMIT E. PERSINGER ET UX	4-8/23.1
14	KERMIT E. PERSINGER ET UX	4-8/24
15	ANN M. STEVEY	4-8/23.2
16	MARILYN MARTIN	4-8/23.3
17	CONSOLIDATION COAL COMPANY/MURRAY ENERGY C/O LAND DEPT.	4-12/25
18	CITY OF MOUNDSVILLE	4-10/1
19	HARRY F. ROUSH ET UX	4-11/3
20	HARRY F. ROUSH ET UX	4-11/6
21	ROY A. & SANDRA F. CLARK	4-10/9

AS DRILLED  
SURFACE HOLE LOCATION (SHL)

UTM 17-NAD83(M)  
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E:524104.82

NAD83, WV NORTH  
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APPROX. LANDING POINT

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N:4410871.16  
E:524665.87

NAD83, WV NORTH  
N:493096.960  
E:1628306.980

**JANUARY 31, 2020**

\* - DENOTES PARCEL WITHIN 30 FEET OF PLANNED WELL BORE

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