WR-35
Rev. 8/23/13

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

API 47 - 061 - 01673 County Monongalia District Clay
Quad Blacksville, WV Pad Name Yost Field/Pool Name Blacksville
Farm name Yost Heritage Inc. Well Number 3H
Operator (as registered with the OOG) Northeast Natural Energy LLC
Address 707 Virginia St. Suite 1200 City Charleston State WV Zip 25301

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4388287.5 Easting 567091.7
Landing Point of Curve Northing 4388347.7 Easting 567038.7
Bottom Hole Northing 4390172.4 Easting 565725.6

Elevation (ft) 1,492' 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 Based Mud for horizontal section -BIO-BASE 365, CALCIUM CHLORIDE POWDER, G-SEAL PLUS, HRP, LIME, M-I WATE (BARITE), M-I-X II MEDIUM, MEGADRIL P SYSTEM, MEGADRIL P SYSTEM RENTAL, MEGAMUL, SAFE-CARB 250, VERSATHIN HF, VERSAWET, VG-PLUS, VINSEAL MEDIUM, WALNUT NUT PLUG MEDIUM

Date permit issued 5-27-2014 Date drilling commenced 9-4-2014 Date drilling ceased 1-1-2015
Date completion activities began 3-7-2015 Date completion activities ceased 4-6-2015
Verbal plugging (Y/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 1,378' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2,410' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 320', 712' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by: 10/30/2015

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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	30	24	50'	N	N/A	N/A	Y- grouted back to surface
Surface	17.5	13 3/8	1,450'	N	54.5	N/A	N- grouted back to surface
Coal							
Intermediate 1	12.25	9 5/8	2,638'	N	40	N/A	Y to 18 bbls
Intermediate 2							
Intermediate 3							
Production	8.5	5.5	16,052'	N	20	N/A	Estimated top @ 2000'
Tubing	4.771	2.875	8,493'	N	6.5	N/A	
Packer type and depth set		No packer set					

Comment Details A good cement return was not seen at surface during the surface casing cement job. The inspector was contacted and a top off job was successfully performed to get cement to surface.

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	4,500 psi ready mix	36.4		.75	27.27	CTS	48
Surface	Class A	1,104	15.2	1.27	1,271	CTS	8
Coal							
Intermediate 1	Class A	852	15.2	1.26	1,074	CTS	8
Intermediate 2							
Intermediate 3							
Production	50/50 Premium NE-1 3% R-3 3% MPA170	3,343	14.5	1.17	2,661	CTS	48
Tubing							

Drillers TD (ft) Pilot: 8,488' ; Horizontal: 16,074' Loggers TD (ft) Pilot: 8,458' ; Horizontal: 16,052'

Deepest formation penetrated Pilot: Oriskany ; Horizontal: Marcellus Plug back to (ft) 6,575'

Plug back procedure Plugged Back Pilot Hole with Solid Cement to 6,575'. Please see attached cement report.

Kick off depth (ft) 6,743'

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: bow spring centralizers every 3rd joint or aprox 120'

Intermediate: bow spring centralizers every 3rd joint or aprox 120'

Production: Hard bodied spiral centralizers every other joint or aprox 60' from TD to KOP then bow spring from KOP to 9 5/8" every forth joint or aprox 140'

WAS WELL COMPLETED AS SHOT HOLE ■ Yes ☐ No DETAILS Completed in a multi-stage plug and perforate manner.
(See Attached Details).

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 MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
					*See Attached Documentation

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations 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)

Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS		
Marcellus Shale	8,280' TVD	16,052' MD	

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ■ Open Flow OIL TEST ☐ Flow ☐ Pump

SHUT-IN PRESSURE Surface 4615 psi Bottom Hole _____ psi DURATION OF TEST 48 hrs

OPEN FLOW Gas 6672 mcfpd Oil _____ bpd NGL _____ bpd Water _____ 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_2S, ETC)
	0		0		* Please See Attached

Please insert additional pages as applicable.

Drilling Contractor Pioneer 63
Address 1250 NE Loop 410 Suite 1000 City San Antonio State TX Zip 78209

Logging Company Baker Hughes
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Cementing Company Baker Hughes
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Stimulating Company Schlumberger
Address 1080 US-33 City Weston State WV Zip 26452

Please insert additional pages as applicable.

Completed by Zack Arnold Telephone 304.241.5752 Ext. 7105
Signature _____ Title General Manager - Operations Date 8-4-2015

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

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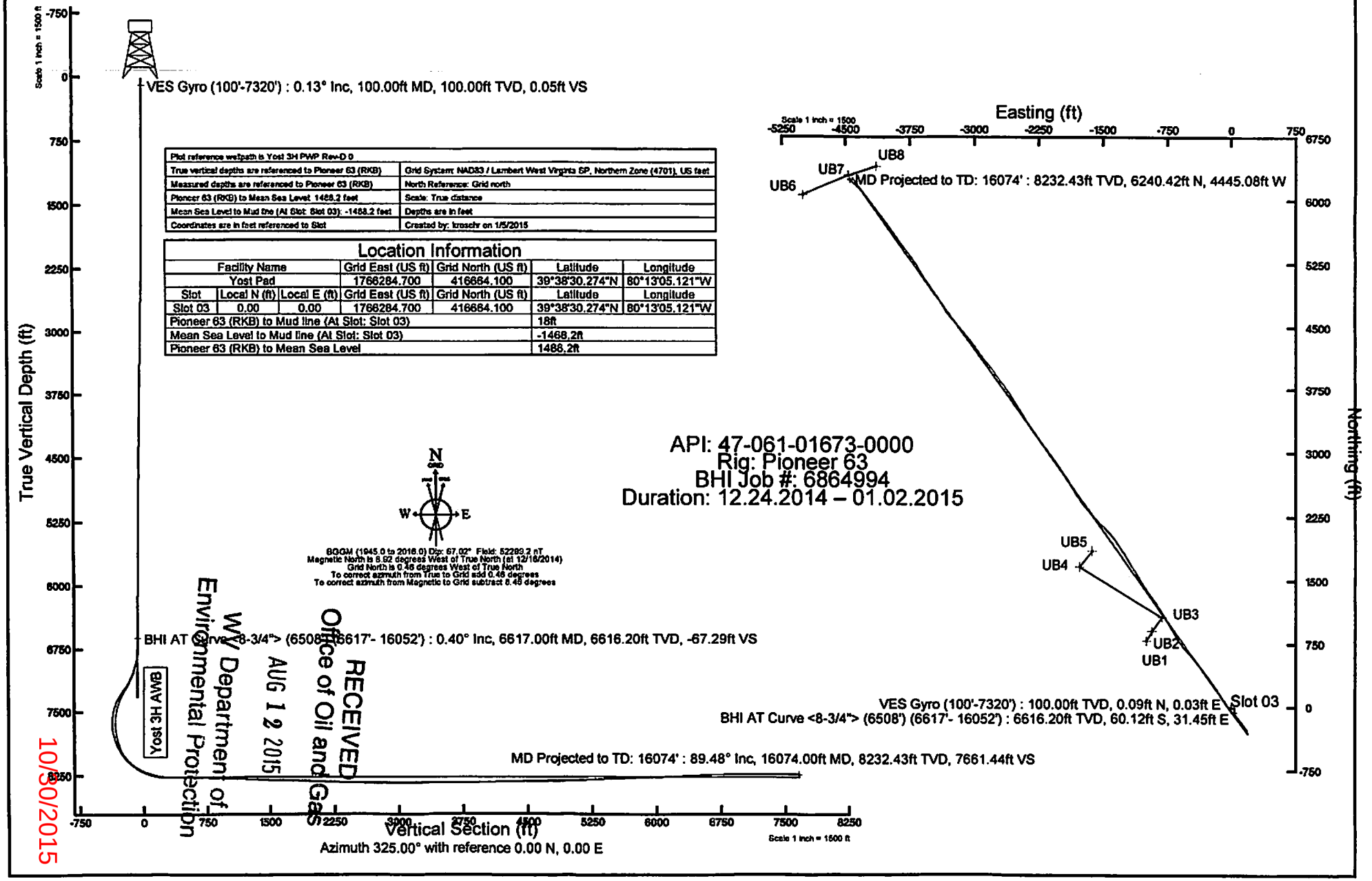
NORTHEAST NATURAL ENERGY, LLC

Location: Monongalia County, WV
Field: Monongalia
Facility: Yost Pad

Slot: Slot 03
Well: Yost 3H
Wellbore: Yost 3H PWB



Plot reference wellpath is Yost 3H PWP Rev-D 0	
True vertical depths are referenced to Pioneer 63 (RKB)	Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet
Measured depths are referenced to Pioneer 63 (RKB)	North Reference: Grid north
Pioneer 63 (RKB) to Mean Sea Level: 1468.2 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot 03): -1468.2 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: troschr on 1/5/2015

Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Yost Pad			1766284.700	416664.100	39°38'30.274"N	80°13'05.121"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot 03	0.00	0.00	1766284.700	416664.100	39°38'30.274"N	80°13'05.121"W
Pioneer 63 (RKB) to Mud line (At Slot: Slot 03)					18ft	
Mean Sea Level to Mud line (At Slot: Slot 03)					-1468.2ft	
Pioneer 63 (RKB) to Mean Sea Level					1468.2ft	

API: 47-061-01673-0000
Rig: Pioneer 63
BHI Job #: 6864994
Duration: 12.24.2014 – 01.02.2015

10/30/2015

Yost 3H API# 47-061-01673

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, H2S, etc)
Sand/Shale/Silt	0	930	0		sand/shale/silt
Limestone	930	960			limestone
Siltstone/Limestone	960	1220			siltstone/limestone
Limestone	1220	1250			limestone
Sandstone	1250	1310			sandstone
Siltstone/Limestone	1310	1410			siltstone/limestone
Sand/Silt	1410	1480			sand/silt
Sand/Shale	1480	7801			sand/shale
Middlesex	7801	7960	7853	8033	shale
Geneseo	7960	8028	8033	8085	shale
Tully	8028	8057	8085	8149	limestone
Hamilton	8057	8184	8149	8343	shale
Marcellus	8184	8255	8343		shale
Onondaga	8255	8277			limestone
Huntersville	8277	8334			chert
Oriskany	8334				sandstone

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ACTUAL WELLPATH REPORT (CSV version)
Prepared by Baker Hughes
Software System: WellArchitect® 4.0.1

REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC
Area	Monongalia County, WV
Field	Monongalia
Facility	Yost Pad
Slot	Slot 03
Well	Yost 3H
Wellbore	Yost 3H AWB
Wellpath	Yost 3H AWP Proj:16074
Sidetrack	(none)

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet
North Reference	Grid
Scale	0.999941
Convergence at slot	0.46° West
Software System	WellArchitect® 4.0.1
User	Kroschr
Report Generated	1/5/2015 at 3:03:41 PM
DataBase/Source file	WA_NorthEast/ev3536.xml

WELLPATH LOCATION

	Local Nort [ft]	Local East [ft]	Easting [US ft]	Northing [US ft]	Latitude	Longitude
Slot Location	0	0	1766285	416664.1	39°38'30.2	80°13'05.121"W
Facility Reference Pt			1766285	416664.1	39°38'30.2	80°13'05.121"W
Field Reference Pt			1777686	440640.7	39°42'28.1	80°10'41.690"W

WELLPATH DATUM

Calculation method	Minimum curvature
Horizontal Reference Point	Slot
Vertical Reference Point	Pioneer 63 (RKB)
MD Reference Point	Pioneer 63 (RKB)
Field Vertical Reference	Mean Sea Level
Pioneer 63 (RKB) to Facility Vertical Datum	18.00ft
Pioneer 63 (RKB) to Mean Sea Level	1486.20ft
Pioneer 63 (RKB) to Mud Line at Slot (Slot 03)	18.00ft
Section Origin	N 0.00, E 0.00 ft
Section Azimuth	325.00°

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WELLPATH DATA † = Interpolated/extrapolated station

	MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Di [ft]	Closure Di [°]	DLS [°/100ft]
†	0	0	21.876	0	0	0	0	1766284.7	416664.1	39°38'30.274"N	80°13'05.121"W	0	0	0
	18	0	21.876	18	0	0	0	1766284.7	416664.1	39°38'30.274"N	80°13'05.121"W	0	0	0
	108	0.142	21.876	108	0.06	0.1	0.04	1766284.74	416664.2	39°38'30.275"N	80°13'05.120"W	0.11	21.876	0.16
	208	0.073	208.325	208	0.1	0.16	0.06	1766284.76	416664.26	39°38'30.275"N	80°13'05.120"W	0.17	19.496	0.21
	308	0.055	229.401	308	0.07	0.08	-0.01	1766284.69	416664.18	39°38'30.274"N	80°13'05.121"W	0.08	353.04	0.03
	408	0.089	202.607	408	0.02	-0.03	-0.08	1766284.62	416664.07	39°38'30.273"N	80°13'05.122"W	0.08	249.757	0.05

508	0.056	187.425	508	-0.06	-0.15	-0.11	1766284.59	416663.95	39°38'30.272"N	80°13'05.122"W	0.19	217.03	0.04
608	0.126	186.109	608	-0.18	-0.31	-0.13	1766284.57	416663.79	39°38'30.271"N	80°13'05.122"W	0.33	202.978	0.07
708	0.111	166.487	708	-0.35	-0.51	-0.12	1766284.58	416663.59	39°38'30.269"N	80°13'05.122"W	0.52	193.122	0.04
808	0.135	183.757	808	-0.53	-0.72	-0.1	1766284.6	416663.38	39°38'30.267"N	80°13'05.122"W	0.73	188.193	0.04
908	0.153	168.445	908	-0.75	-0.97	-0.08	1766284.62	416663.13	39°38'30.264"N	80°13'05.122"W	0.97	184.998	0.04
1008	0.115	174.305	1008	-0.96	-1.2	-0.05	1766284.65	416662.9	39°38'30.262"N	80°13'05.121"W	1.2	182.294	0.04
1108	0.161	162.21	1108	-1.18	-1.43	0	1766284.7	416662.67	39°38'30.260"N	80°13'05.121"W	1.43	179.808	0.05
1208	0.197	149.337	1208	-1.48	-1.72	0.14	1766284.84	416662.38	39°38'30.257"N	80°13'05.119"W	1.72	175.487	0.05
1308	0.065	127.245	1308	-1.71	-1.9	0.27	1766284.97	416662.2	39°38'30.255"N	80°13'05.117"W	1.92	171.954	0.14
1408	0.135	144.759	1408	-1.88	-2.03	0.38	1766285.08	416662.07	39°38'30.254"N	80°13'05.116"W	2.06	169.351	0.08
1508	0.196	171.953	1508	-2.15	-2.29	0.47	1766285.17	416661.81	39°38'30.251"N	80°13'05.114"W	2.34	168.341	0.1
1608	0.19	160.038	1608	-2.46	-2.62	0.55	1766285.25	416661.48	39°38'30.248"N	80°13'05.113"W	2.68	168.059	0.04
1708	0.217	162.186	1708	-2.8	-2.96	0.67	1766285.37	416661.15	39°38'30.245"N	80°13'05.112"W	3.03	167.255	0.03
1808	0.269	180.403	1807.99	-3.18	-3.37	0.72	1766285.42	416660.73	39°38'30.240"N	80°13'05.111"W	3.45	167.865	0.09
1908	0.329	177.938	1907.99	-3.61	-3.89	0.73	1766285.43	416660.21	39°38'30.235"N	80°13'05.111"W	3.96	169.329	0.06
2008	0.372	166.678	2007.99	-4.15	-4.49	0.82	1766285.52	416659.61	39°38'30.229"N	80°13'05.110"W	4.57	169.679	0.08
2108	0.372	128.923	2107.99	-4.76	-5.01	1.15	1766285.85	416659.09	39°38'30.224"N	80°13'05.106"W	5.14	167.128	0.24
2208	0.99	90.385	2207.98	-5.58	-5.22	2.26	1766286.96	416658.88	39°38'30.222"N	80°13'05.091"W	5.69	156.585	0.74
2308	1.172	96.293	2307.96	-6.75	-5.34	4.14	1766288.84	416658.76	39°38'30.221"N	80°13'05.067"W	6.76	142.207	0.21
2408	1.543	94.107	2407.94	-8.28	-5.55	6.5	1766291.2	416658.55	39°38'30.219"N	80°13'05.037"W	8.55	130.486	0.37
2508	1.61	95.702	2507.9	-10.04	-5.79	9.24	1766293.94	416658.31	39°38'30.217"N	80°13'05.002"W	10.9	122.049	0.08
2608	1.865	99.411	2607.85	-12.1	-6.19	12.25	1766296.95	416657.91	39°38'30.213"N	80°13'04.964"W	13.72	116.824	0.28
2708	1.918	100.822	2707.8	-14.44	-6.77	15.5	1766300.19	416657.33	39°38'30.208"N	80°13'04.922"W	16.91	113.609	0.07
2808	1.674	104.752	2807.75	-16.75	-7.46	18.55	1766303.25	416656.64	39°38'30.201"N	80°13'04.883"W	19.99	111.903	0.27
2908	1.47	109.972	2907.71	-18.92	-8.27	21.17	1766305.87	416655.83	39°38'30.194"N	80°13'04.849"W	22.73	111.336	0.25
3008	1.472	111.722	3007.68	-21.04	-9.18	23.57	1766308.27	416654.92	39°38'30.185"N	80°13'04.819"W	25.29	111.286	0.04
3108	1.262	112.973	3107.65	-23.05	-10.09	25.78	1766310.47	416654.01	39°38'30.176"N	80°13'04.790"W	27.68	111.373	0.21
3208	1.128	118.898	3207.63	-24.86	-10.99	27.65	1766312.35	416653.11	39°38'30.167"N	80°13'04.766"W	29.76	111.681	0.18
3308	1.175	124.206	3307.61	-26.71	-12.04	29.36	1766314.06	416652.06	39°38'30.157"N	80°13'04.744"W	31.74	112.305	0.12
3408	1.08	133.809	3407.59	-28.59	-13.27	30.89	1766315.59	416650.83	39°38'30.145"N	80°13'04.725"W	33.62	113.255	0.21
3508	0.941	142.944	3507.57	-30.34	-14.58	32.06	1766316.76	416649.52	39°38'30.132"N	80°13'04.709"W	35.22	114.454	0.21
3608	0.928	147.03	3607.56	-31.97	-15.92	33	1766317.7	416648.18	39°38'30.119"N	80°13'04.697"W	36.64	115.749	0.07
3708	0.88	144.096	3707.55	-33.54	-17.22	33.89	1766318.59	416646.88	39°38'30.106"N	80°13'04.686"W	38.01	116.932	0.07
3808	0.846	155.786	3807.54	-35.04	-18.51	34.64	1766319.34	416645.59	39°38'30.093"N	80°13'04.676"W	39.28	118.119	0.18
3908	0.836	155.204	3907.53	-36.48	-19.85	35.25	1766319.95	416644.25	39°38'30.080"N	80°13'04.668"W	40.46	119.381	0.01
4008	0.847	157.664	4007.51	-37.92	-21.19	35.84	1766320.54	416642.91	39°38'30.067"N	80°13'04.660"W	41.64	120.599	0.04
4108	0.976	157.446	4107.5	-39.47	-22.66	36.45	1766321.14	416641.44	39°38'30.053"N	80°13'04.653"W	42.92	121.876	0.13
4208	0.814	163.711	4207.49	-40.97	-24.13	36.97	1766321.67	416639.97	39°38'30.038"N	80°13'04.646"W	44.15	123.134	0.19
4308	0.801	169.047	4307.48	-42.29	-25.5	37.3	1766322	416638.6	39°38'30.025"N	80°13'04.641"W	45.19	124.356	0.08
4408	0.8	168.919	4407.47	-43.56	-26.87	37.57	1766322.27	416637.23	39°38'30.011"N	80°13'04.638"W	46.19	125.574	0
4508	0.922	173.224	4507.46	-44.91	-28.36	37.8	1766322.5	416635.75	39°38'29.996"N	80°13'04.635"W	47.25	126.876	0.14
4608	0.85	179.072	4607.45	-46.23	-29.9	37.91	1766322.6	416634.2	39°38'29.981"N	80°13'04.633"W	48.28	128.262	0.12
4708	0.849	180.921	4707.44	-47.45	-31.38	37.91	1766322.6	416632.72	39°38'29.967"N	80°13'04.633"W	49.21	129.618	0.03
4808	0.961	186.132	4807.42	-48.68	-32.95	37.81	1766322.5	416631.15	39°38'29.951"N	80°13'04.634"W	50.15	131.077	0.14
4908	0.984	189.186	4907.41	-49.93	-34.64	37.58	1766322.28	416629.47	39°38'29.934"N	80°13'04.637"W	51.11	132.666	0.06
5008	1.082	197.211	5007.39	-51.12	-36.38	37.16	1766321.86	416627.72	39°38'29.917"N	80°13'04.642"W	52.01	134.394	0.08
5108	1.055	193.212	5107.38	-52.31	-38.18	36.67	1766321.37	416625.92	39°38'29.899"N	80°13'04.648"W	52.94	136.16	0.08
5208	1.027	193.461	5207.36	-53.52	-39.95	36.25	1766320.95	416624.15	39°38'29.882"N	80°13'04.653"W	53.95	137.777	0.03
5308	1.195	195.359	5307.34	-54.78	-41.83	35.77	1766320.47	416622.27	39°38'29.863"N	80°13'04.659"W	55.04	139.665	0.17
5408	0.971	191.48	5407.32	-56.03	-43.66	35.32	1766320.02	416620.44	39°38'29.845"N	80°13'04.665"W	56.16	141.027	0.24
5508	1.009	191.455	5507.31	-57.22	-45.36	34.98	1766319.68	416618.75	39°38'29.828"N	80°13'04.669"W	57.28	142.359	0.14
5608	1.009	199.546	5607.29	-58.34	-47.05	34.51	1766319.21	416617.05	39°38'29.811"N	80°13'04.675"W	58.35	143.74	0.14
5708	0.923	199.58	5707.28	-59.31	-48.64	33.95	1766318.64	416615.46	39°38'29.796"N	80°13'04.682"W	59.31	145.087	0.09

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5808	0.877	200.986	5807.27	-60.21	-50.11	33.4	1766318.1	416613.99	39°38'29.781"N	80°13'04.689"W	60.22	146.314	0.05
5908	0.842	191.331	5907.25	-61.14	-51.55	32.98	1766317.68	416612.56	39°38'29.767"N	80°13'04.694"W	61.2	147.385	0.15
6008	0.807	195.889	6007.24	-62.1	-52.94	32.65	1766317.35	416611.16	39°38'29.753"N	80°13'04.698"W	62.2	148.341	0.07
6108	0.851	197.311	6107.23	-62.99	-54.33	32.23	1766316.93	416609.77	39°38'29.739"N	80°13'04.703"W	63.17	149.32	0.05
6208	0.848	193.371	6207.22	-63.94	-55.76	31.84	1766316.54	416608.34	39°38'29.725"N	80°13'04.708"W	64.21	150.272	0.06
6308	0.779	190.707	6307.21	-64.91	-57.15	31.54	1766316.24	416606.96	39°38'29.711"N	80°13'04.712"W	65.28	151.102	0.08
6408	0.571	187.703	6407.2	-65.75	-58.31	31.35	1766316.05	416605.79	39°38'29.700"N	80°13'04.714"W	66.2	151.735	0.21
6508	0.52	174.194	6507.2	-66.51	-59.25	31.33	1766316.03	416604.85	39°38'29.691"N	80°13'04.714"W	67.03	152.133	0.14
6617	0.4	169.38	6616.2	-67.29	-60.12	31.45	1766316.15	416603.98	39°38'29.682"N	80°13'04.713"W	67.85	152.385	0.12
6680	0.17	158.26	6679.2	-67.58	-60.42	31.53	1766316.22	416603.68	39°38'29.679"N	80°13'04.712"W	68.15	152.447	0.37
6743	0.61	152.04	6742.19	-68	-60.81	31.72	1766316.42	416603.3	39°38'29.675"N	80°13'04.709"W	68.58	152.453	0.7
6806	5.43	166.92	6805.09	-71.1	-64.01	32.55	1766317.25	416600.1	39°38'29.644"N	80°13'04.698"W	71.81	153.046	7.69
6870	10.55	158.48	6868.45	-79.61	-72.41	35.39	1766320.08	416591.69	39°38'29.561"N	80°13'04.661"W	80.6	153.957	8.19
6933	14.18	146.59	6929.99	-92.94	-84.23	41.75	1766326.45	416579.88	39°38'29.445"N	80°13'04.578"W	94.01	153.631	7.01
6996	16.87	142.7	6990.68	-109.79	-97.94	51.54	1766336.24	416566.16	39°38'29.310"N	80°13'04.452"W	110.68	152.244	4.58
7060	20.44	142.88	7051.31	-130.25	-114.25	63.92	1766348.62	416549.86	39°38'29.150"N	80°13'04.292"W	130.91	150.773	5.58
7123	23.56	142.99	7109.72	-153.83	-133.08	78.14	1766362.84	416531.03	39°38'28.965"N	80°13'04.108"W	154.32	149.579	4.95
7186	26.37	142.54	7166.83	-180.4	-154.24	94.23	1766378.93	416509.87	39°38'28.757"N	80°13'03.900"W	180.75	148.577	4.47
7248	28.82	142.34	7221.77	-209.09	-177	111.74	1766396.43	416487.11	39°38'28.533"N	80°13'03.674"W	209.32	147.736	3.95
7312	30.44	141.96	7277.4	-240.69	-201.99	131.16	1766415.85	416462.13	39°38'28.288"N	80°13'03.424"W	240.83	147.003	2.55
7375	24.17	143.88	7333.35	-269.55	-225	148.61	1766433.3	416439.12	39°38'28.062"N	80°13'03.198"W	269.65	146.555	10.05
7438	20.31	145.33	7391.65	-293.38	-244.42	162.44	1766447.13	416419.7	39°38'27.871"N	80°13'03.019"W	293.47	146.392	6.19
7501	16.02	147.08	7451.5	-313.01	-260.71	173.39	1766458.08	416403.4	39°38'27.711"N	80°13'02.878"W	313.1	146.374	6.86
7564	9.86	150.76	7512.87	-327.08	-272.73	180.76	1766465.44	416391.39	39°38'27.593"N	80°13'02.782"W	327.19	146.465	9.86
7627	4.79	155.23	7575.34	-335.04	-279.83	184.49	1766469.18	416384.29	39°38'27.523"N	80°13'02.734"W	335.17	146.603	8.09
7689	1.27	260.03	7637.27	-337.3	-282.3	184.9	1766469.59	416381.82	39°38'27.498"N	80°13'02.728"W	337.46	146.776	8.48
7752	6.68	316.51	7700.1	-333.38	-279.76	181.69	1766466.38	416384.36	39°38'27.523"N	80°13'02.770"W	333.58	146.998	9.64
7816	10.54	319.59	7763.37	-323.87	-272.6	175.33	1766460.02	416391.52	39°38'27.594"N	80°13'02.852"W	324.12	147.252	6.07
7879	14.77	322.46	7824.83	-310.1	-261.84	166.7	1766451.39	416402.28	39°38'27.699"N	80°13'02.963"W	310.4	147.517	6.79
7942	18.61	322.2	7885.16	-292.03	-247.52	155.64	1766440.33	416416.59	39°38'27.840"N	80°13'03.106"W	292.39	147.839	6.1
8005	24.89	318	7943.65	-268.81	-229.71	140.59	1766425.28	416434.41	39°38'28.015"N	80°13'03.300"W	269.32	148.531	10.26
8069	33.17	317.41	7999.56	-238.03	-206.77	119.7	1766404.39	416457.34	39°38'28.240"N	80°13'03.570"W	238.92	149.934	12.95
8132	40.08	319.26	8050.09	-200.72	-178.68	94.76	1766379.46	416485.43	39°38'28.515"N	80°13'03.891"W	202.26	152.06	11.11
8195	46.7	320.68	8095.85	-157.63	-145.54	66.97	1766351.67	416518.57	39°38'28.841"N	80°13'04.250"W	160.21	155.291	10.62
8257	54.13	322.12	8135.33	-109.98	-108.21	37.21	1766321.91	416555.9	39°38'29.207"N	80°13'04.634"W	114.42	161.024	12.12
8321	61.37	323.9	8169.46	-55.92	-64.98	4.69	1766289.39	416599.12	39°38'29.632"N	80°13'05.054"W	65.15	175.871	11.55
8384	66.79	324.74	8196.99	0.71	-18.97	-28.34	1766256.36	416645.13	39°38'30.084"N	80°13'05.481"W	34.1	236.199	8.69
8448	71.06	325.76	8220	60.42	30.09	-62.36	1766222.34	416694.19	39°38'30.566"N	80°13'05.921"W	69.24	295.758	6.84
8511	75.47	326.57	8238.14	120.72	80.19	-95.94	1766188.76	416744.29	39°38'31.059"N	80°13'06.355"W	125.04	309.891	7.11
8574	79.21	327.42	8251.94	182.14	131.74	-129.42	1766155.29	416795.83	39°38'31.565"N	80°13'06.788"W	184.67	315.509	6.08
8637	83.56	327.8	8261.38	244.35	184.32	-162.77	1766121.94	416848.41	39°38'32.082"N	80°13'07.220"W	245.91	318.552	6.93
8700	89.88	327.06	8264.98	307.16	237.3	-196.62	1766088.1	416901.38	39°38'32.603"N	80°13'07.658"W	308.17	320.356	10.1
8763	89.63	326.16	8265.25	370.13	289.9	-231.29	1766053.43	416953.98	39°38'33.120"N	80°13'08.107"W	370.86	321.417	1.48
8826	88.83	324.82	8266.09	433.12	341.81	-266.97	1766017.74	417005.89	39°38'33.631"N	80°13'08.568"W	433.71	322.008	2.48
8889	88.71	323.09	8267.45	496.09	392.73	-304.04	1765980.68	417056.81	39°38'34.131"N	80°13'09.047"W	496.66	322.255	2.75
8953	88.61	322.21	8268.94	560.02	443.59	-342.85	1765941.87	417107.67	39°38'34.630"N	80°13'09.549"W	560.65	322.3	1.38
9016	88.34	321.89	8270.62	622.92	493.25	-381.58	1765903.14	417157.32	39°38'35.118"N	80°13'10.049"W	623.62	322.274	0.66
9079	88.15	321.62	8272.55	685.79	542.71	-420.56	1765864.16	417206.78	39°38'35.604"N	80°13'10.552"W	686.59	322.227	0.52
9142	88.06	320.41	8274.63	748.6	591.65	-460.17	1765824.55	417255.72	39°38'36.084"N	80°13'11.064"W	749.5	322.175	1.92
9205	88.12	320.19	8276.73	811.35	640.1	-500.39	1765784.34	417304.16	39°38'36.560"N	80°13'11.583"W	812.48	321.884	0.36
9269	88.62	318.98	8278.55	875.04	688.8	-541.87	1765742.86	417352.86	39°38'37.038"N	80°13'12.118"W	876.52	321.809	2.04
9333	88.43	320.16	8280.2	938.73	737.5	-583.36	1765701.38	417401.56	39°38'37.516"N	80°13'12.653"W	940.33	321.656	1.87
9396	88.43	326.39	8281.93	1001.65	787.96	-621	1765663.74	417452.01	39°38'38.012"N	80°13'13.140"W	1003.25	321.758	9.89

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9460	87.69	332.26	8284.1	1065.4	842.94	-653.62	1765631.12	417506.99	39°38'38.552"N	80°13'13.562"W	1066.66	322.21	9.24
9523	87.6	331.25	8286.69	1127.91	898.4	-683.41	1765601.34	417562.44	39°38'39.098"N	80°13'13.949"W	1128.79	322.74	1.61
9587	87.66	328.3	8289.33	1191.62	953.64	-715.59	1765569.15	417617.68	39°38'39.642"N	80°13'14.366"W	1192.27	323.116	4.61
9649	87.69	330.27	8291.85	1253.4	1006.9	-747.23	1765537.51	417670.94	39°38'40.165"N	80°13'14.776"W	1253.87	323.42	3.18
9712	87.54	330.22	8294.47	1316.08	1061.54	-778.47	1765506.28	417725.58	39°38'40.703"N	80°13'15.181"W	1316.39	323.746	0.25
9776	88.31	329.55	8296.79	1379.8	1116.87	-810.56	1765474.19	417780.9	39°38'41.247"N	80°13'15.596"W	1380	324.03	1.59
9838	88.03	328.27	8298.77	1441.63	1169.93	-842.56	1765442.19	417833.96	39°38'41.769"N	80°13'16.011"W	1441.75	324.239	2.11
9901	88.34	325.59	8300.76	1504.55	1222.7	-876.92	1765407.84	417886.72	39°38'42.288"N	80°13'16.456"W	1504.65	324.352	4.28
9964	88.46	325.07	8302.52	1567.53	1274.49	-912.74	1765372.02	417938.51	39°38'42.797"N	80°13'16.919"W	1567.62	324.391	0.85
10027	88.25	324.33	8304.33	1630.5	1325.89	-949.13	1765335.63	417989.9	39°38'43.302"N	80°13'17.389"W	1630.59	324.403	1.22
10090	88.49	325.59	8306.12	1693.47	1377.44	-985.29	1765299.47	418041.46	39°38'43.808"N	80°13'17.857"W	1693.56	324.424	2.04
10153	88.19	326.57	8307.95	1756.43	1429.7	-1020.43	1765264.34	418093.71	39°38'44.322"N	80°13'18.311"W	1756.51	324.483	1.63
10217	88.15	327.89	8309.99	1820.35	1483.49	-1055.05	1765229.72	418147.5	39°38'44.851"N	80°13'18.759"W	1820.4	324.58	2.06
10279	87.97	329.79	8312.09	1882.17	1536.51	-1087.11	1765197.66	418200.51	39°38'45.372"N	80°13'19.175"W	1882.2	324.72	3.08
10342	87.72	329.1	8314.46	1944.94	1590.72	-1119.11	1765165.65	418254.72	39°38'45.906"N	80°13'19.589"W	1944.95	324.873	1.16
10405	88.28	328.41	8316.66	2007.77	1644.55	-1151.77	1765133	418308.55	39°38'46.435"N	80°13'20.012"W	2007.77	324.994	1.41
10468	88.25	330.75	8318.57	2070.53	1698.85	-1183.65	1765101.12	418362.85	39°38'46.969"N	80°13'20.426"W	2070.54	325.134	3.71
10531	88.12	330.72	8320.56	2133.19	1753.78	-1214.44	1765070.34	418417.77	39°38'47.509"N	80°13'20.825"W	2133.21	325.299	0.21
10594	88.28	324.97	8322.54	2196.05	1807.07	-1247.94	1765036.84	418471.06	39°38'48.033"N	80°13'21.258"W	2196.1	325.372	9.13
10657	88.49	326.51	8324.32	2259.02	1859.12	-1283.39	1765001.39	418523.1	39°38'48.545"N	80°13'21.717"W	2259.07	325.382	2.47
10720	88.52	328.22	8325.96	2321.94	1912.15	-1317.35	1764967.43	418576.13	39°38'49.066"N	80°13'22.157"W	2322.01	325.436	2.71
10783	88.65	326.42	8327.52	2384.87	1965.16	-1351.35	1764933.43	418629.14	39°38'49.587"N	80°13'22.597"W	2384.95	325.485	2.86
10846	89.2	321.5	8328.7	2447.83	2016.07	-1388.4	1764896.38	418680.05	39°38'50.088"N	80°13'23.076"W	2447.9	325.446	7.86
10909	89.26	317.97	8329.55	2510.54	2064.14	-1429.11	1764855.68	418728.11	39°38'50.559"N	80°13'23.601"W	2510.58	325.303	5.6
10971	89.32	314.86	8330.32	2571.84	2109.04	-1471.85	1764812.94	418773.01	39°38'51.000"N	80°13'24.152"W	2571.84	325.09	5.02
11035	89.39	314.02	8331.04	2634.75	2153.84	-1517.54	1764767.26	418817.81	39°38'51.439"N	80°13'24.741"W	2634.76	324.833	1.32
11098	89.42	316.14	8331.69	2696.8	2198.45	-1562.02	1764722.78	418862.41	39°38'51.876"N	80°13'25.314"W	2696.86	324.606	3.37
11161	89.48	318.39	8332.3	2759.22	2244.72	-1604.77	1764680.03	418908.68	39°38'52.330"N	80°13'25.865"W	2759.35	324.439	3.57
11224	89.54	318.63	8332.83	2821.81	2291.91	-1646.5	1764638.3	418955.87	39°38'52.793"N	80°13'26.404"W	2822.02	324.307	0.39
11287	89.6	320.8	8333.31	2884.54	2339.96	-1687.23	1764597.57	419003.92	39°38'53.265"N	80°13'26.929"W	2884.82	324.206	3.45
11350	89.72	323.5	8333.68	2947.46	2389.7	-1725.88	1764558.92	419053.66	39°38'53.753"N	80°13'27.428"W	2947.77	324.163	4.29
11413	89.78	326.21	8333.96	3010.45	2441.21	-1762.15	1764522.66	419105.16	39°38'54.259"N	80°13'27.897"W	3010.76	324.177	4.3
11476	90.22	328.34	8333.96	3073.4	2494.21	-1796.2	1764488.61	419158.16	39°38'54.780"N	80°13'28.338"W	3073.67	324.24	3.45
11539	89.72	330	8333.99	3136.23	2548.3	-1828.49	1764456.32	419212.25	39°38'55.313"N	80°13'28.756"W	3136.44	324.339	2.75
11601	90.09	329.54	8334.09	3198.01	2601.87	-1859.7	1764425.11	419265.81	39°38'55.839"N	80°13'29.161"W	3198.16	324.444	0.95
11665	90	328.64	8334.04	3261.85	2656.78	-1892.58	1764392.24	419320.72	39°38'56.379"N	80°13'29.587"W	3261.95	324.536	1.41
11728	89.94	325.97	8334.07	3324.79	2709.8	-1926.61	1764358.21	419373.73	39°38'56.901"N	80°13'30.027"W	3324.88	324.588	4.24
11791	89.97	325.19	8334.12	3387.79	2761.77	-1962.22	1764322.6	419425.7	39°38'57.411"N	80°13'30.488"W	3387.87	324.606	1.24
11854	90.09	326.14	8334.09	3450.78	2813.79	-1997.75	1764287.07	419477.71	39°38'57.923"N	80°13'30.948"W	3450.86	324.626	1.52
11918	89.88	326.69	8334.11	3514.76	2867.1	-2033.15	1764251.67	419531.03	39°38'58.447"N	80°13'31.406"W	3514.83	324.658	0.92
11981	89.85	324.23	8334.26	3577.76	2918.99	-2068.87	1764215.96	419582.92	39°38'58.957"N	80°13'31.868"W	3577.81	324.672	3.91
12044	90.34	323.07	8334.15	3640.74	2969.73	-2106.21	1764178.62	419633.65	39°38'59.455"N	80°13'32.350"W	3640.8	324.655	2
12107	90.4	321.99	8333.74	3703.68	3019.73	-2144.54	1764140.3	419683.65	39°38'59.946"N	80°13'32.845"W	3703.76	324.619	1.72
12170	90.77	323.18	8333.1	3766.62	3069.77	-2182.81	1764102.02	419733.68	39°39'00.438"N	80°13'33.340"W	3766.71	324.585	1.98
12234	90.95	325.6	8332.14	3830.6	3121.79	-2220.07	1764064.77	419785.7	39°39'00.949"N	80°13'33.822"W	3830.7	324.581	3.79
12298	91.05	326.33	8331.02	3894.58	3174.82	-2255.88	1764028.95	419838.72	39°39'01.470"N	80°13'34.285"W	3894.67	324.602	1.46
12361	91.51	324.95	8329.62	3957.56	3226.81	-2291.43	1763993.41	419890.71	39°39'01.981"N	80°13'34.745"W	3957.65	324.621	2.51
12423	91.26	325.07	8328.12	4019.54	3277.59	-2326.97	1763957.87	41994149	39°39'02.480"N	80°13'35.204"W	4019.63	324.621	0.45
12486	91.54	322.98	8326.58	4082.51	3328.56	-2363.97	1763920.88	419992.45	39°39'02.981"N	80°13'35.683"W	4082.6	324.617	3.35
12549	91.26	327.8	8325.04	4145.47	3380.38	-2399.73	1763885.12	420044.27	39°39'03.490"N	80°13'36.145"W	4145.56	324.629	7.66
12613	90.96	331.27	8323.8	4209.25	3435.52	-2432.17	1763852.68	420099.41	39°39'04.032"N	80°13'36.566"W	4209.3	324.702	5.14
12676	90.74	331.47	8322.86	4271.85	3490.81	-2462.35	1763822.5	420154.7	39°39'04.576"N	80°13'36.957"W	4271.88	324.802	0.47
12740	90.95	326.22	8321.92	4335.68	3545.56	-2495.45	1763789.41	420209.44	39°39'05.115"N	80°13'37.386"W	4335.69	324.861	8.21

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12803	90.8	328.16	8320.96	4398.62	3598.5	-2529.58	1763755.28	420262.38	39°39'05.635"N	80°13'37.828"W	4398.63	324.895	3.09
12866	90.55	328.07	8320.21	4461.53	3651.99	-2562.85	1763722	420315.86	39°39'06.161"N	80°13'38.259"W	4461.53	324.94	0.42
12929	90.68	326.48	8319.54	4524.47	3704.98	-2596.91	1763687.95	420368.86	39°39'06.682"N	80°13'38.700"W	4524.47	324.973	2.53
12992	91.14	324.45	8318.54	4587.46	3756.87	-2632.62	1763652.24	420420.74	39°39'07.192"N	80°13'39.162"W	4587.46	324.979	3.3
13055	91.26	323.02	8317.22	4650.43	3807.66	-2669.87	1763614.99	420471.52	39°39'07.691"N	80°13'39.643"W	4650.43	324.962	2.28
13119	91.29	324.89	8315.79	4714.4	3859.39	-2707.52	1763577.34	420523.25	39°39'08.199"N	80°13'40.130"W	4714.4	324.949	2.92
13181	91.32	326.36	8314.38	4776.37	3910.55	-2742.52	1763542.35	420574.41	39°39'08.702"N	80°13'40.582"W	4776.38	324.958	2.37
13244	91.2	324.65	8313	4839.35	3962.45	-2778.19	1763506.68	420626.31	39°39'09.212"N	80°13'41.044"W	4839.36	324.965	2.72
13308	91.57	322.46	8311.45	4903.31	4013.92	-2816.19	1763468.68	420677.77	39°39'09.718"N	80°13'41.535"W	4903.31	324.946	3.47
13371	91.54	321.87	8309.74	4966.21	4063.66	-2854.82	1763430.05	420727.51	39°39'10.206"N	80°13'42.034"W	4966.22	324.911	0.94
13434	92.37	322.48	8307.59	5029.1	4113.39	-2893.43	1763391.44	420777.24	39°39'10.695"N	80°13'42.533"W	5029.11	324.877	1.63
13497	92.5	325.17	8304.91	5092.02	4164.19	-2930.58	1763354.3	420828.04	39°39'11.194"N	80°13'43.013"W	5092.04	324.864	4.27
13560	92.99	326.2	8301.9	5154.94	4216.17	-2966.06	1763318.83	420880.01	39°39'11.704"N	80°13'43.472"W	5154.96	324.874	1.81
13624	92.89	323.82	8298.61	5218.85	4268.53	-3002.7	1763282.18	420932.37	39°39'12.219"N	80°13'43.946"W	5218.87	324.875	3.72
13687	92.93	323.61	8295.41	5281.76	4319.25	-3039.94	1763244.95	420983.08	39°39'12.717"N	80°13'44.427"W	5281.77	324.862	0.34
13749	92.89	322.37	8292.27	5343.64	4368.69	-3077.21	1763207.68	421032.52	39°39'13.203"N	80°13'44.909"W	5343.66	324.84	2
13813	92.93	321.3	8289.02	5407.46	4418.94	-3116.71	1763168.18	421082.77	39°39'13.696"N	80°13'45.419"W	5407.49	324.804	1.67
13875	92.46	321.43	8286.1	5469.26	4467.32	-3155.38	1763129.52	421131.15	39°39'14.171"N	80°13'45.918"W	5469.31	324.766	0.79
13938	92.16	320.11	8283.56	5532.04	4516.08	-3195.19	1763089.71	421179.9	39°39'14.650"N	80°13'46.433"W	5532.11	324.72	2.15
14002	92.16	317.8	8281.15	5595.63	4564.31	-3237.18	1763047.72	421228.13	39°39'15.123"N	80°13'46.974"W	5595.74	324.654	3.61
14065	92	320.69	8278.86	5658.27	4612	-3278.28	1763006.63	421275.82	39°39'15.591"N	80°13'47.505"W	5658.41	324.594	4.59
14128	92.09	325.99	8276.61	5721.18	4662.49	-3315.85	1762969.05	421326.3	39°39'16.087"N	80°13'47.990"W	5721.33	324.58	8.41
14190	91.94	331.17	8274.43	5783	4715.34	-3348.14	1762936.76	421379.16	39°39'16.607"N	80°13'48.409"W	5783.12	324.623	8.35
14253	91.81	330.13	8272.37	5845.66	4770.23	-3379.01	1762905.9	421434.03	39°39'17.147"N	80°13'48.809"W	5845.75	324.688	1.66
14317	91.54	327.47	8270.5	5909.49	4824.94	-3412.14	1762872.77	421488.75	39°39'17.685"N	80°13'49.238"W	5909.55	324.733	4.18
14380	91.48	326.56	8268.84	5972.42	4877.77	-3446.43	1762838.48	421541.57	39°39'18.204"N	80°13'49.682"W	5972.48	324.757	1.45
14442	91.91	326.05	8267.01	6034.38	4929.33	-3480.81	1762804.1	421593.13	39°39'18.711"N	80°13'50.127"W	6034.43	324.772	1.08
14505	92.06	324.94	8264.82	6097.34	4981.21	-3516.47	1762768.44	421645.01	39°39'19.221"N	80°13'50.589"W	6097.38	324.78	1.78
14569	92.56	325.14	8262.24	6161.29	5033.62	-3553.12	1762731.8	421697.41	39°39'19.736"N	80°13'51.062"W	6161.33	324.783	0.84
14632	92.52	327.49	8259.45	6224.2	5085.99	-3588.02	1762696.9	421749.78	39°39'20.251"N	80°13'51.514"W	6224.24	324.798	3.73
14695	92.89	330.43	8256.48	6286.98	5139.9	-3620.47	1762664.45	421803.69	39°39'20.781"N	80°13'51.935"W	6287	324.84	4.7
14759	92.93	329.71	8253.23	6350.64	5195.3	-3652.36	1762632.57	421859.08	39°39'21.326"N	80°13'52.348"W	6350.65	324.892	1.13
14822	92.93	327.63	8250.01	6413.43	5249.04	-3685.07	1762599.85	421912.81	39°39'21.854"N	80°13'52.772"W	6413.43	324.929	3.3
14885	92.64	325.77	8246.95	6476.32	5301.63	-3719.62	1762565.31	421965.4	39°39'22.371"N	80°13'53.219"W	6476.33	324.947	2.98
14948	92.8	323.6	8243.96	6539.25	5352.97	-3755.99	1762528.94	422016.75	39°39'22.876"N	80°13'53.690"W	6539.25	324.944	3.45
15011	92.31	324.22	8241.15	6602.17	5403.83	-3793.07	1762491.87	422067.6	39°39'23.375"N	80°13'54.169"W	6602.18	324.934	1.25
15074	91.97	323.42	8238.8	6665.12	5454.65	-3830.23	1762454.7	422118.41	39°39'23.874"N	80°13'54.649"W	6665.12	324.924	1.38
15137	91.66	324.29	8236.8	6728.07	5505.5	-3867.37	1762417.57	422169.26	39°39'24.374"N	80°13'55.129"W	6728.08	324.914	1.47
15201	91.63	326.73	8234.96	6792.04	5558.22	-3903.59	1762381.35	422221.98	39°39'24.892"N	80°13'55.598"W	6792.04	324.919	3.81
15264	90.99	323.75	8233.52	6855.01	5609.96	-3939.5	1762345.44	422273.71	39°39'25.400"N	80°13'56.063"W	6855.02	324.922	4.84
15327	91.02	325.47	8232.42	6918	5661.31	-3975.98	1762308.97	422325.06	39°39'25.905"N	80°13'56.534"W	6918.01	324.919	2.73
15390	90.22	323.79	8231.74	6980.99	5712.67	-4012.44	1762272.5	422376.42	39°39'26.410"N	80°13'57.006"W	6981	324.917	2.95
15453	90.28	321.89	8231.46	7043.94	5762.88	-4050.49	1762234.45	422426.63	39°39'26.903"N	80°13'57.498"W	7043.95	324.898	3.02
15517	90.49	322.71	8231.03	7107.87	5813.52	-4089.63	1762195.32	422477.26	39°39'27.400"N	80°13'58.003"W	7107.89	324.875	1.32
15579	90.03	323.27	8230.75	7169.83	5863.02	-4126.95	1762158	422526.77	39°39'27.886"N	80°13'58.486"W	7169.85	324.858	1.17
15642	90	323.78	8230.73	7232.81	5913.68	-4164.4	1762120.55	422577.42	39°39'28.384"N	80°13'58.970"W	7232.84	324.847	0.81
15705	89.94	323.54	8230.77	7295.79	5964.43	-4201.74	1762083.22	422628.17	39°39'28.882"N	80°13'59.452"W	7295.82	324.837	0.39
15768	89.94	323.16	8230.83	7358.77	6014.98	-4239.34	1762045.62	422678.71	39°39'29.379"N	80°13'59.938"W	7358.8	324.824	0.6
15831	90	323.32	8230.86	7421.74	6065.45	-4277.04	1762007.92	422729.18	39°39'29.875"N	80°14'00.426"W	7421.76	324.81	0.27
15895	89.82	318.67	8230.97	7485.56	6115.17	-4317.31	1761967.65	422778.89	39°39'30.363"N	80°14'00.946"W	7485.62	324.798	7.12
15962	89.42	312.71	8231.41	7551.65	6163.09	-4364.09	1761920.87	422826.81	39°39'30.833"N	80°14'01.549"W	7551.75	324.698	8.92
16021	89.51	312.88	8231.96	7609.31	6203.17	-4407.39	1761877.58	422866.89	39°39'31.225"N	80°14'02.107"W	7609.49	324.606	0.33
16052	89.48	315.4	8232.23	7639.75	6224.76	-4429.63	1761855.34	422888.48	39°39'31.437"N	80°14'02.393"W	7639.91	324.562	8.13

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16074	89.48	315.4	8232.43	7661.44	6240.42	-4445.08	1761839.9	422904.14	39°39'31.590"N	80°14'02.592"W	7661.69	324.538	0

HOLE AND CASING SECTIONS Ref Wellbore: Yost 3H AWB Ref Wellpath: Yost 3H AWP Proj:16074

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
13.375in Casing	18	1458	1440	18	1458	0	0	-2.14	0.44
9.625in Casing	18	2646	2628	18	2645.83	0	0	-6.4	13.47

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape	Comment
Yost 3H LP Rev-6		8263	203.23	-177.02	1766108	416867.3	39°38'32.2	80°13'07.404"W	point	
Yost 3H PBHL Rev-4		8263	6260.08	-4418.07	1761867	422923.8	39°39'31.7	80°14'02.249"W	point	
UB1		8500	790.39	-998.06	1765287	417454.4	39°38'38.0	80°13'17.960"W	point	
UB2		8500	907.17	-934.39	1765350	417571.2	39°38'39.1	80°13'17.158"W	point	
UB3		8500	1074.49	-814.12	1765471	417738.5	39°38'40.8	80°13'15.638"W	point	
UB4		8500	1671.37	-1773.18	1764512	418335.4	39°38'46.6	80°13'27.959"W	point	
UB5		8500	1853.15	-1628.73	1764656	418517.1	39°38'48.4	80°13'26.131"W	point	
UB6		8500	6065.92	-4999.34	1761286	422729.7	39°39'29.8	80°14'09.661"W	point	
UB7		8500	6295.33	-4465.88	1761819	422959	39°39'32.1	80°14'02.864"W	point	
UB8		8500	6402.64	-4140.52	1762144	423066.4	39°39'33.2	80°13'58.715"W	point	

WELLPATH COMPOSITION Ref Wellbore: Yost 3H AWB Ref Wellpath: Yost 3H AWP Proj:16074

Log Name/Comment	Start MD [ft]	End MD [ft]	Pos Unc Model
01 VES Gyro (100'-7320')	18	6508	Generic gyro - northseeking (Standard)
02_BHI AT Curve <8-3/4"> (6508') (6617'- 16052')	6508	16052	NaviTrak (AT Curve Short Spaced)
Projection to bit	16052	16074	Blind Drilling (std)

COMMENTS

Wellpath general comments
API:
Rig: Pioneer 63
BHI Job#:
Duration:
VES Gyro (100'-7320')
BHI AT Curve <8-3/4> (6508') (6617'- 16052')"
MD Projected to TD: 16074'

10/30/2015

CEMENT JOB REPORT

BAKER HUGHES

CUSTOMER	DATE	F.R. #	SERV. SUPV.
NORTHEAST NATURAL ENER	07-SEP-14	10011097198	Jason H Matheny
LEASE & WELL NAME	**LOCATION**		**COUNTY-PARISH-BLOCK**
YOST 3H - API 47061016730000	DAYBROOK		Monongalia West Virginia
DISTRICT	**DRILLING CONTRACTOR RIG #**		**TYPE OF JOB**
Clarksburg	PERFORMACE 1		Surface

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
BJ Cement Plug, Rubber, Top 13-3/8	Guide Shoe, Cement Nose 13-3/8 i						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES: SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
WATER AHEAD		0	8.34	0	0	00:00	200	
GEL/FLAKE		0	8.56	0	0	00:00	25	
H2O		0	8.34	0	0	00:00	10	
PNE-1 2% CAL2 /FLAKE ON SIDE		1,104	15.2	1.27	5.77	03:30	249.7	151.66
H2O		0	8.34	0	0	00:00	217	
250# SUGAR		0	0	0	0	00:00	0	
300# FLAKE		0	0	0	0	00:00	0	
1 13.375 TRP		0	0	0	0	00:00	0	

Available Mix Water 500 Bbl. Available Displ. Fluid 500 Bbl. TOTAL 701.7 151.66

HOLE SIZE	% EXCESS	DEPTH	TBG-CSG-D.P. ID	OD	WGT.	TYPE	MD	TVD	GRADE	COLLAR DEPTHS SHOE	FLOAT	STAGE
17.5	30	1480	12.62	13.38	54.5	CSG	1450	1450	J-55	1450	1404	

LAST CASING ID	OD	WGT	TYPE	MD	TVD	PKR-CMT RET-BR PL-LINER BRAND & TYPE	DEPTH	PERF. DEPTH TOP	BTM	TOP CONN SIZE	THREAD	WELL FLUID TYPE	WGT.
23.	24	110	CSG	50	50	NO-PACKER	0	0	0	13.375	8RD	OTHER	0

DISPL. VOLUME VOLUME	UOM	DISPL. FLUID TYPE	WGT.	CAL. PSI BUMP PLUG	CAL. MAX PSI TO REV.	OP. MAX SQ. PSI	MAX TBG PSI RATED	Operator	MAX CSG PSI RATED	Operator	MIX WATER
220	BBLS	H2O	8.34	500	0	0	0	0	2711	600	TANKS

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL TIME HR:MIN.	PRESSURE - PSI PIPE	ANNULUS	RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	EXPLANATION
						SAFETY MEETING: BJ CREW [X] CO. REP. [X]
						TEST LINES 3900 PSI
						CIRCULATING WELL - RIG [ ] BJ
14:00	0	0	0	0	0	ARRIVED ON LOCATION
16:50	200	0	7	200	H2O	WATER AHEAD
17:15	250	0	5.5	25	GEL/FLAKE	PRE-FLUSH
17:20	240	0	5.5	10	H2O	SPACER
17:22	320	0	5.5	242	SLURRY	PNE-1 2% CACL2 + FLAKE ON SIDE
17:59	0	0	0	0	H2O	S/D RELEASE PLUG
18:01	200	0	8	0	H2O	START DISPLACEMENT
18:45	600	0	0	220	H2O	END DISPLACEMENT
18:55	0	0	0	0	N/A	BLEED OFF/RIG OUT

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
[Y] N	480	[Y] N	0	697	600	Y [N]	

CEMENT JOB REPORT

BAKER HUGHES

CUSTOMER	DATE	F.R. #	SERV. SUPV.
NORTHEAST NATURAL ENER	11-SEP-14	10011098389	Ron Bland
LEASE & WELL NAME	**LOCATION**		**COUNTY-PARISH-BLOCK**
YOST 3H - API 47061016730000	DAY BROOK WV		Monongalia West Virginia
DISTRICT	**DRILLING CONTRACTOR RIG #**		**TYPE OF JOB**
Clarksburg			Intermediate

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
9-5/8" Top Cem Plug, Nitrile cvr, Phe	Float Collar, Auto Fill, 9-5/8 - 8rd						
	Float Shoe 9-5/8 - 8rd						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES: SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
PREM NE 1+ 1.5%CACL		852	15.2	1.26	5.76	02:30	191	116.73
500# GEL+ 50# FLAKE			8.34				25	
H2O			8.34				194.8	
400# SUGAR FOR PIT			8.34				50	
						TOTAL	460.8	116.73

Available Mix Water 500 Bbl. Available Displ. Fluid 500 Bbl.

HOLE SIZE	% EXCESS	DEPTH	TBG-CSG-D.P. ID	OD	WGT.	TYPE	MD	TVD	GRADE	COLLAR DEPTHS SHOE	FLOAT	STAGE
12.25	30	2680	8.835	9.625	40	CSG	2643	2643	J-55			

LAST CASING ID	OD	WGT	TYPE	MD	TVD	PKR-CMT RET-BR PL-LINER BRAND & TYPE	DEPTH	PERF. DEPTH TOP	BTM	TOP CONN SIZE	THREAD	WELL FLUID TYPE	WGT.
										9.625	8RD	OTHER	0

DISPL. VOLUME VOLUME	UOM	DISPL. FLUID TYPE	WGT.	CAL. PSI BUMP PLUG	CAL. MAX PSI TO REV.	OP. MAX SQ. PSI	MAX TBG PSI RATED	Operator	MAX CSG PSI RATED	Operator	MIX WATER
194.8	BBLS	H2O	8.34	930	0	0	0	0	2280	2140	TANKS
		400# SUGAR FOR P	8.34								

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL TIME HR:MIN.	PRESSURE - PSI PIPE	ANNULUS	RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	EXPLANATION
						SAFETY MEETING: BJ CREW [X] CO. REP. [X]
						TEST LINES 3200 PSI
						CIRCULATING WELL - RIG [ ] BJ [ ]
03:00						RIG IN SAFETY MEETING
05:30	3200					PSI TEST
05:32	190		6.4	170	H2O	PREFLUSH
06:00	220		6.4	25	GEL/FLAKE	PREFLUSH
06:04	220		6.4	10	H2O	SPACER
06:06	220		5.5	190	SLURRY	15.2#
06:41	0					SHUT DOWN DROP PLUG
06:42	250		5.5	194.8	H2O	DISP
07:20	1115					PLUG DOWN
07:21						BLEED OFF PSI FLOATS HELD SHUT IN HEAD

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
[Y] N	1115	[Y] N	18	589.8	0	Y [N]	

CEMENT JOB REPORT

BAKER HUGHES

CUSTOMER: NORTHEAST NATURAL ENER	DATE: 30-NOV-14	F.R. #: 10011121706	SERV. SUPV.: Jason H Matheny
LEASE & WELL NAME: YOST 3H - API 47061016730000	LOCATION: DAYBROOK		COUNTY-PARISH-BLOCK: Monongalia West Virginia
DISTRICT: Clarksburg	DRILLING CONTRACTOR RIG # PERFORMANCE #1		TYPE OF JOB: Plug Back

SIZE & TYPE OF PLUGS | LIST-CSG-HARDWARE | MECHANICAL BARRIERS MD TVD | HANGER TYPES MD TVD

MATERIALS FURNISHED BY BJ | LAB REPORT NO. | PHYSICAL SLURRY PROPERTIES

	SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
KCL H2O	0	9	0	0	00:00	600	
GEL	0	8.56	0	0	00:00	22	
CLASS H 1% CD-32 .7% SMS .4% R-3	230	17	1	3.72	03:30	41	20.39
GEL	0	8.56	0	0	00:00	7	
H2O	0	8.34	0	0	00:00	109.3	
KCL REVERSE OUT	0	9	0	0	00:00	160	
					TOTAL	939.3	20.39

Available Mix Water: 750 Bbl. Available Displ. Fluid: 750 Bbl.

HOLE SIZE	HOLE % EXCESS	HOLE DEPTH	TBG-CSG-D.P. ID	OD	WGT.	TYPE	MD	TVD	GRADE	COLLAR DEPTHS SHOE	FLOAT	STAGE
8.75	10	8800	4.276	5	19.5	DP	8469	8469	H-40			

LAST CASING ID	OD	WGT	TYPE	MD	TVD	PKR-CMT RET-BR PL-LINER BRAND & TYPE	DEPTH	PERF. DEPTH TOP	BTM	TOP CONN SIZE	THREAD	WELL FLUID TYPE	WGT.
8.6	9.625	40	CSG	2643	2643	NO-PACKER	0	0	0	4.5	IF	SYNTHETIC MUD	13

DISPL. VOLUME VOLUME	UOM	DISPL. FLUID TYPE	WGT.	CAL. PSI BUMP PLUG	CAL. MAX PSI TO REV.	OP. MAX SQ. PSI	MAX TBG PSI RATED	Operator	MAX CSG PSI RATED	Operator	MIX WATER
100	BBLS	H2O	8.34	0	0	0	8600	1400	0	0	TANKS

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL | EXPLANATION

TIME HR:MIN.	PRESSURE - PSI PIPE	ANNULUS	RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	EXPLANATION
						SAFETY MEETING: BJ CREW [X] CO. REP. [X]
						TEST LINES 4000 PSI
						CIRCULATING WELL - RIG [X] BJ [X]
21:30	0	0	0	0	0	ARRIVED ON LOCATION
02:30	1400	0	4	600	KCL	CIRCULATE ALL DRILL MUD OUT OF WELL BORE
06:30	0	0	0	0	H2O	RIG PULLS 22 STANDS TO 7080
07:20	215	0	5	22	GEL	SPACER AHEAD
07:25	350	0	5	41	SLURRY	PLUG CLASS H + ADDITIVES
07:36	280	0	5	7	GEL	SPACER BEHIND
07:37	60	0	5	0	H2O	START DISPLACEMENT
08:15	230	0	0	100	H2O	END DISPLACEMENT WAIT ON RIG TO PULL 22 STANDS
09:00	400	0	5	160	KCL	REVERSE OUT
09:50	0	0	0	0	H2O	BLEED OFF/RIG OUT

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
Y [N]	0	Y [N]	0	930	0	Y [N]	Jason Matheny

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WV Department of
Environmental Protection

10/30/2015

CEMENT JOB REPORT

BAKER HUGHES

CUSTOMER	DATE	F.R. #	SERV. SUPV.
NORTHEAST NATURAL ENER	03-JAN-15	10011129918	Brian Lough
LEASE & WELL NAME	**LOCATION**		**COUNTY-PARISH-BLOCK**
YOST 3H - API 47061016730000	CLAY		Monongalia West Virginia
DISTRICT	**DRILLING CONTRACTOR RIG #**		**TYPE OF JOB**
Clarksburg	PIONEER 63		Long String

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
5-1/2" Top Cem Plug, Nitri cvr, Phen	Float Collar, Al Flap, 5-1/2 - 8rd						
	Guide Shoe, Cement Nose, 5-1/2 i						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES: SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
H2O			8.34				5	
ULTRA FLUSH			13				97	
CLASS A 50/50 POZ+R-3+MPA-170		3,343	14.5	1.17	5.14	07:17	680	399.37
HALLIBURTON RETARDER IN FRESH H2O			8.4				10	
FRESH H2O			8.34				350	
200 LBS SUGAR ON THE SIDE			8.34				50	
						TOTAL	1192	399.37

Available Mix Water 750 Bbl. Available Displ. Fluid 750 Bbl.

HOLE SIZE	% EXCESS	DEPTH	TBG-CSG-D.P. ID	OD	WGT.	TYPE	MD	TVD	GRADE	COLLAR DEPTHS SHOE	FLOAT	STAGE
8.75	10	16079	4.778	5.5	20	CSG	16074		P-110	16074	16062	

LAST CASING ID	OD	WGT	TYPE	MD	TVD	PKR-CMT RET-BR PL-LINER BRAND & TYPE	DEPTH	PERF. DEPTH TOP	BTM	TOP CONN SIZE	THREAD	WELL FLUID TYPE	WGT.
8.8	9.625	40	CSG	2638						5.5	BUTT	SYNTHETIC MUD	12.5

DISPL. VOLUME VOLUME	UOM	DISPL. FLUID TYPE	WGT.	CAL. PSI BUMP PLUG	CAL. MAX PSI TO REV.	OP. MAX SQ. PSI	MAX TBG PSI RATED	Operator	MAX CSG PSI RATED	Operator	MIX WATER
357	BBLS	FRESH H2O	8.34	4000	0	0	0	0	10112	5000	TANK

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL TIME HR:MIN.	PRESSURE - PSI PIPE	ANNULUS	RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	EXPLANATION
						SAFETY MEETING: BJ CREW [X] CO. REP. [X]
						TEST LINES 7450 PSI
						CIRCULATING WELL - RIG [X] BJ [X]
09:35						ARRIVE ON LOCATION. JOB TIME 0600 HRS. LATE DUE TO ICE ON ROADWAYS
09:40						SPOT EQUIPMENT
10:00						SAFETY MEETING WITH BHI CREW
10:20						RIG INTO WELL & TANKS
12:15						SAFETY MEETING WITH RIG CREW & CO.MAN
12:41	900		5.5	5	H2O	LINE FILL
12:42	0		.2	.2	H2O	PRESSURE TEST BHI IRON TO 7450 PSI
12:45	812		5.4	97	FLUSH	ULTRA FLUSH HV
13:03	625		6.5	680	CEMENT	3343 SACKS OF CLASS A-50/50 POZ+.35% R-3+.2% MPA-170. TEMP - 53 DEGREES f
14:52	0		6	10	H2O	SHUT DOWN / FLUSH LINES / SPOT RETARDER TO HEAD / DROP PLUG
14:56	1550		7	10	H2O	HALLIBURTON RETARDER IN FRESH H2O
14:58	3900		7	350	H2O	FRESH H2O DISPLACEMENT
15:48	4000		3		H2O	LAND PLUG. 70 BBL ULTRA FLUSH RETURN TO 1/2 ROUND
15:52	0					RELEASE PRESSURE TO PUMPER./ 4 BBL H2O RETURNS
15:53	0					FLOATS HELD. / END JOB

CEMENT JOB REPORT

BAKER HUGHES

PRESSURE/RATE DETAIL

TIME HR:MIN.	PRESSURE - PSI PIPE	PRESSURE - PSI ANNULUS	RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE

EXPLANATION

SAFETY MEETING: BJ CREW [X] CO. REP. [X]

TEST LINES 7450 PSI

CIRCULATING WELL - RIG [X] BJ [X]

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT
[Y] N	4000	[Y] N	0	1150	0	Y [N]

SERVICE SUPERVISOR SIGNATURE:

Perforation Record

Stage Number	Report Date	Perforated from MD ft	Perforated to MD ft	Number of Perforations	Formation
1	3/30/2015	15,990	15,858	40	Marcellus Shale
2	3/30/2015	15,803	15,653	40	Marcellus Shale
3	3/31/2015	15,600	15,450	40	Marcellus Shale
4	3/31/2015	15,397	15,247	40	Marcellus Shale
5	3/31/2015	15,194	15,044	40	Marcellus Shale
6	3/31/2015	14,995	14,841	40	Marcellus Shale
7	3/31/2015	14,780	14,633	40	Marcellus Shale
8	3/31/2015	14,585	14,435	40	Marcellus Shale
9	4/1/2015	14,382	14,232	40	Marcellus Shale
10	4/1/2015	14,179	14,029	40	Marcellus Shale
11	4/1/2015	13,978	13,826	40	Marcellus Shale
12	4/1/2015	13,770	13,619	40	Marcellus Shale
13	4/1/2015	13,570	13,420	40	Marcellus Shale
14	4/1/2015	13,367	13,217	40	Marcellus Shale
15	4/3/2015	13,164	13,014	40	Marcellus Shale
16	4/3/2015	12,957	12,811	40	Marcellus Shale
17	4/2/2015	12,758	12,605	40	Marcellus Shale
18	4/3/2015	12,555	12,405	40	Marcellus Shale
19	4/3/2015	12,352	12,202	40	Marcellus Shale
20	4/3/2015	12,149	11,999	40	Marcellus Shale
21	4/3/2015	11,943	11,796	40	Marcellus Shale
22	4/3/2015	11,740	11,593	40	Marcellus Shale
23	4/3/2015	11,540	11,390	40	Marcellus Shale
24	4/4/2015	11,337	11,187	40	Marcellus Shale
25	4/4/2015	11,134	10,984	40	Marcellus Shale
26	4/4/2015	10,931	10,781	40	Marcellus Shale
27	4/4/2015	10,728	10,578	40	Marcellus Shale
28	4/4/2015	10,525	10,375	40	Marcellus Shale
29	4/4/2015	10,324	10,172	40	Marcellus Shale
30	4/5/2015	10,119	9,971	40	Marcellus Shale
31	4/5/2015	9,916	9,766	40	Marcellus Shale
32	4/5/2015	9,713	9,561	40	Marcellus Shale
33	4/5/2015	9,510	9,360	40	Marcellus Shale
34	4/5/2015	9,307	9,157	40	Marcellus Shale
35	4/5/2015	9,104	8,954	40	Marcellus Shale
36	4/5/2015	8,899	8,751	40	Marcellus Shale
37	4/6/2015	8,698	8,548	40	Marcellus Shale

Stimulation Record							
Stage Number	Report Date	Avg Treating Rate (BPM)	Avg Treating Pressure (psi)	Breakdown Pressure (psi)	ISIP (psi)	Total Proppant Amount (lbs)	Total Clean Fluid (Bbls)
1	3/30/2015	84	9,005	7,460	6,016	400,020	7,201
2	3/30/2015	76	9,097	9,073	5,454	398,880	7,186
3	3/31/2015	78	9,084	8,562	5,769	403,380	7,311
4	3/31/2015	80	9,012	8,904	6,627	403,390	8,391
5	3/31/2015	86	9,085	8,798	6,117	405,410	7,077
6	3/31/2015	85	9,152	7,918	5,076	401,660	7,263
7	3/31/2015	78	9,091	8,401	5,895	402,620	8,310
8	3/31/2015	87	8,978	7,358	6,691	403,100	6,776
9	4/1/2015	88	9,058	8,295	6,404	403,020	6,867
10	4/1/2015	84	9,043	8,662	6,246	402,660	7,075
11	4/1/2015	80	9,000	9,200	6,468	399,720	7,094
12	4/1/2015	84	8,816	8,309	6,594	400,540	6,781
13	4/1/2015	89	9,029	8,662	6,803	399,920	5,763
14	4/1/2015	88	9,105	8,282	N/A	323,540	4,812
15	4/3/2015	88	8,997	7,750	6,308	398,860	5,687
16	4/3/2015	89	8,963	7,223	5,895	405,520	5,564
17	4/2/2015	89	8,926	8,114	6,975	404,060	6,185
18	4/3/2015	86	9,024	8,400	5,983	306,760	5,267
19	4/3/2015	86	8,994	8,133	6,943	408,480	7,446
20	4/3/2015	92	9,030	8,368	7,124	400,780	5,560
21	4/3/2015	89	8,997	7,648	5,959	305,902	5,254
22	4/3/2015	66	9,063	7,826	5,420	402,400	5,635
23	4/3/2015	89	9,009	8,177	5,672	403,380	5,707
24	4/4/2015	87	8,940	8,850	N/A	402,140	6,664
25	4/4/2015	92	8,898	7,636	6,691	401,920	5,860
26	4/4/2015	89	8,763	8,513	6,659	397,020	7,205
27	4/4/2015	92	8,856	7,931	6,881	396,480	5,880
28	4/4/2015	77	8,782	7,808	6,149	405,880	6,337
29	4/4/2015	89	8,487	7,707	6,489	403,500	5,526
30	4/5/2015	91	8,856	8,095	6,594	348,840	5,704
31	4/5/2015	92	8,804	8,688	6,278	398,840	5,944
32	4/5/2015	86	8,720	7,786	6,659	401,200	6,452
33	4/5/2015	94	8,399	9,536	6,117	398,700	6,522
34	4/5/2015	93	8,864	7,929	6,530	393,700	6,922
35	4/5/2015	84	8,898	8,521	6,055	402,780	7,919
36	4/5/2015	91	8,823	8,892	5,769	413,560	7,139
37	4/6/2015	99	9,129	8,997	7,040	415,420	6,606

10/30/2015

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/30/2015
Job End Date:	4/6/2015
State:	West Virginia
County:	Monongalia
API Number:	47-061-01673-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Yost 3H
Longitude:	-80.21808900
Latitude:	39.64174200
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	8,334
Total Base Water Volume (gal):	10,542,588
Total Base Non Water Volume:	0

FracFocus Chemical Disclosure Registry

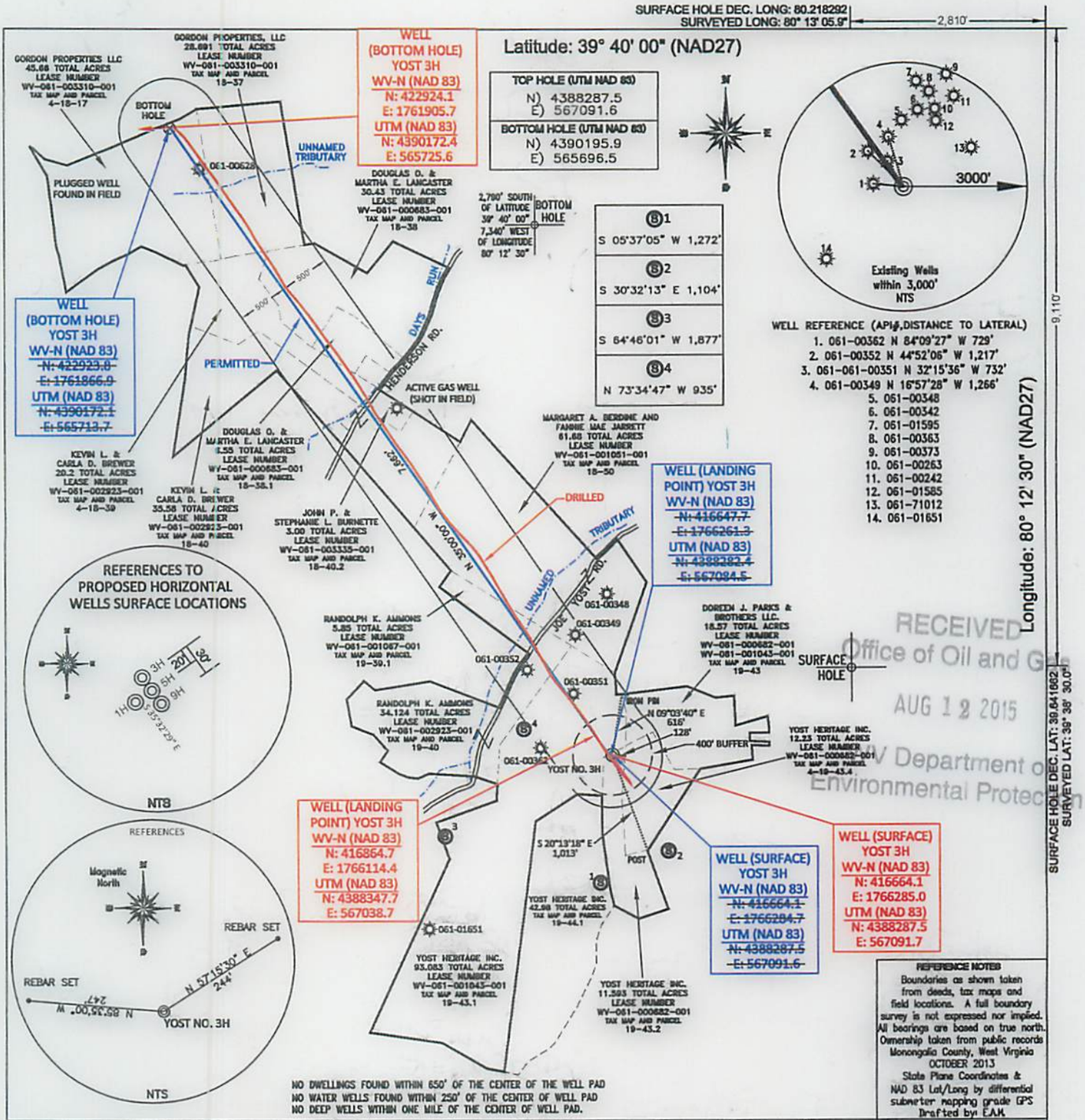
Hydraulic Fracturing Fluid Composition:

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
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Proppant Transport	Schlumberger	Corrosion Inhibitor, Bactericide (Myacide GA25), Scale Inhibitor, AntiFoam Agent, Acid, Breaker, Gelling Agent, Friction Reducer, Crosslinker, Iron Co					
			Water (Including Mix Water Supplied by Client)*	NA		85.39994	
			Quartz, Crystalline silica	14808-60-7	98.52290	14.38441	
			Hydrochloric acid	7647-01-0	0.76070	0.11106	
			Guar gum	9000-30-0	0.37245	0.05438	
			Ammonium sulfate	7783-20-2	0.12139	0.01772	
			Acrylamide, 2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer	38193-60-1	0.08960	0.01308	
			Glutaraldehyde	111-30-8	0.03632	0.00530	
			Diammonium peroxidisulphate	7727-54-0	0.02418	0.00353	
			Potassium borate	1332-77-0	0.01507	0.00220	
			Ethanol, 2,2',2"-nitrilotris-, 1,1',1"-tris(dihydrogen phosphate), sodium salt	68171-29-9	0.01109	0.00162	

			Polymer of 2-acrylamido-2-methylpropanesulfonic acid sodium salt and methyl acrylate	136793-29-8	0.00960	0.00140	
			Urea	57-13-6	0.00589	0.00086	
			Potassium hydroxide	1310-58-3	0.00557	0.00081	
			Glycerol	56-81-5	0.00491	0.00072	
			Trisodium ortho phosphate	7601-54-9	0.00488	0.00071	
			Sodium erythorbate	6381-77-7	0.00485	0.00071	
			Vinylidene chloride/methylacrylate copolymer	25038-72-6	0.00346	0.00050	
			Methanol	67-56-1	0.00253	0.00037	
			Non-crystalline silica (impurity)	7631-86-9	0.00216	0.00032	
			Fatty acids, tall-oil	61790-12-3	0.00176	0.00026	
			Thiourea, polymer with formaldehyde and 1-phenylethanone	68527-49-1	0.00145	0.00021	
			Sodium sulfate	7757-82-6	0.00137	0.00020	
			Ethylene Glycol	107-21-1	0.00139	0.00020	
			Alcohols, C14-15, ethoxylated (7EO)	68951-67-7	0.00069	0.00010	
			Propargyl alcohol	107-19-7	0.00046	0.00007	
			Polypropylene glycol	25322-69-4	0.00029	0.00004	
			2-propenamid	79-06-1	0.00029	0.00004	
			Tetrasodium ethylenediaminetetraacetate	64-02-8	0.00015	0.00002	
			Hexadec-1-ene	629-73-2	0.00015	0.00002	
			Magnesium silicate hydrate (talc)	14807-96-6	0.00011	0.00002	
			1-Octadecene (C18)	112-88-9	0.00008	0.00001	
			poly(tetrafluoroethylene)	9002-84-0	0.00004	0.00001	
			Dimethyl siloxanes and silicones	63148-62-9	0.00008	0.00001	
			Siloxanes and silicones, dimethyl, reaction products with silica	67762-90-7	0.00001		
			Formaldehyde	50-00-0	0.00001		
			Copper(II) sulfate	7758-98-7			
			Decamethyl cyclopentasiloxane	541-02-6	0.00001		
			Dodecamethylcyclohexasiloxane	540-97-6			
			Octamethylcyclotetrasiloxane	556-67-2	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(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



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Office of Oil and Gas
AUG 12 2015
WV Department of Environmental Protection

FILE #: NNE10
DRAWING #: 2297
SCALE: PLAT – 1" = 1400' TICK MARK – 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

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: _____

L.L.S. #2124 : Ernest J. Benchek III

ERNEST J. BENCHEK III LICENSED No. 2124 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

DATE: AUGUST 4, 2015

OPERATOR'S WELL #: YOST NO. 3H AS-DRILLED

API WELL #: 47 (STATE) 61 (COUNTY) 01673 H6A (PERMIT)

Well Type: ☐ Oil ☐ Waste Diposal ☐ Production ☒ Deep
☒ Gas ☐ Liquid Injection ☐ Storage ☐ Shallow

WATERSHED: DUNKARD CREEK
AS-BUILT ELEVATION: 1,492'
COUNTY/DISTRICT: MONONGALIA / CLAY
QUADRANGLE: BLACKSVILLE, WV
SURFACE OWNER: YOST HERITAGE INC.
ACREAGE: 11.593 +/- 10/30/2015
OIL & GAS ROYALTY OWNER: JOE POGUE ET AL
ACREAGE: 407.24 +/-
LEASE NUMBERS: _____

DRILL ☒ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☒
PLUG OFF FORMATION ☐ PERFORATE NEW FORMATION ☐ PLUG & ABANDON ☐
CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY): _____

TARGET FORMATION: MARCELLUS
ESTIMATED DEPTH: PILOT 8,488' TVD: 8,280' TMD: 16,052'
WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC
DESIGNATED AGENT: JOHN ADAMS
ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
CITY: CHARLESTON STATE: WV ZIP CODE: 25301
CITY: CHARLESTON STATE: WV ZIP CODE: 25301