

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

API 47-069-00172 County Ohio District Triadelphina
Quad Valley Grove Pad Name Roy Ferrell OHI Field/Pool Name _____
Farm name Roy Ferrell OHI 210H Well Number 836178
Operator (as registered with the OOG) Chesapeake Appalachia, L.L.C.
Address P.O. Box 18496 City Oklahoma City State OK Zip 73154-0496

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4432659.54 Easting 540014.12
Landing Point of Curve Northing 4432889.83 Easting 540551.50
Bottom Hole Northing 4430882.15 Easting 541369.56

Elevation (ft) 1,205' 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)
SOBM

Date permit issued 8-30-2013 Date drilling commenced 8-25-2013 Date drilling ceased 1-18-2014
Date completion activities began 4/11/2014 Date completion activities ceased 4/16/2014
Verbal plugging (Y/N) N Date permission granted _____ Granted by _____

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

Freshwater depth(s) ft 324' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 800' Void(s) encountered (Y/N) depths Y 623'
Coal depth(s) ft 623' Cavern(s) encountered (Y/N) depths N

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APPROVED

NAME: Eric Blend

DATE: 9.22.16

JUN 21 2016

WV Department of
Environmental Protection

Reviewed by:

EB

10/28/2016

API 47-069 - 00172 Farm name Roy Ferrell OHI 210H Well number 836178

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	24"	20"	118'	New	J-55 / 94#		Y
Surface	17 1/2"	13 3/8"	707'	New	J-55 / 54.5#		Y
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,190'	New	J-55 / 40#		Y
Intermediate 2							
Intermediate 3							
Production	8 3/4" / 8 1/2"	5 1/2"	14,784'	New	P-110 / 20#		Y
Tubing							
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Driven						
Surface	Class A	672 / 366	15.60	1.20 / 1.18	1,238.28	Surface	8
Coal							
Intermediate 1	Class A	742	15.60	1.24	920.08	Surface	8
Intermediate 2							
Intermediate 3							
Production	Class A	975 / 1,880	15.60	1.36 / 1.19	3,563.2	201'	8
Tubing							

Drillers TD (ft) 14,784' Loggers TD (ft) 14,784'

Deepest formation penetrated Marcellus Plug back to (ft) _____

Plug back procedure _____

Kick off depth (ft) 6,321'

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 / Coal - Run centralizers in the middle and top of the first joint, top of the third joint and every 4th joint to surface.

Production - Run 1st centralizer 3' from Shoe, 2nd at top of the first joint and then one every 3rd joint to TOC.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____ RECEIVED Office of Oil and Gas

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____ JUN 21 2016

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____ WV Department of Environmental Protection

API 47- 069 - 00172 Farm name Roy Ferrell OHI 210H Well number 836178

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	Attached				

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)
	Attached							

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Please insert additional pages as applicable.

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API 47- 069 - 00172 Farm name Roy Ferrell OHI 210H Well number 836178

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6,650	TVD	7,624 MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1,600 psi Bottom Hole 4,369 psi DURATION OF TEST 168 hrs

OPEN FLOW Gas 2,919 mcfpd Oil 109 bpd NGL _____ bpd Water 170 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
Ss/Shale	90	330	90	330	
Ls/Shale	330	650	330	650	
Pittsburgh Coal	644	690	644	690	
Ss/Shale	690	1640	1040	1640	
Shale	1640	1820	1640	1820	
Ss	1820	2030	1820	2030	
Ss/Shale	2030	2150	2030	2150	
Shale	2150	6465	2150	6905	
Geneseo	6465	6485	6905	6935	Gas 2000u
Tully	6485	6517	6935	6981	Gas 500u
Hamilton	6517	6650	6981	7624	Gas 1000u
Marcellus	6650	6661	7624	7776	Gas 2500u
TD		6766		14784	

Please insert additional pages as applicable.

Drilling Contractor Nomac Drilling
Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349

Logging Company Nomac Drilling
Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349

Cementing Company Schlumberger
Address 1080 U.S. 33 City Weston State WV Zip 26452

Stimulating Company Weatherford, Artificial Lift Systems
Address 286 Weatherford BLVD City Buckhannon State WV Zip 26201

Please insert additional pages as applicable.

Completed by Jessica Greathouse Telephone 304-353-5240
Signature [Signature] Title Manager - Regulatory Operations Date 6/14/2016

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

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PERFORATION RECORD ATTACHMENT

Well Name and Number: Roy Ferrell OHI 210H

API No. 47-069-00172

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PERFORATION RECORD		STIMULATION RECORD										
		Date	Interval Perforated		Total Number of Shots	Date	Interval Treated	Fluid		Propping Agent		Average Injection Rate
			From	To				Type	Amount	Type	Amount	
1	4/11/2014	14422	14620	35	4/11/2014	14422	14620	SLK Wtr	7687	Sand	358290	80
2	4/12/2014	14168	14372	35	4/12/2014	14168	14372	SLK Wtr	7835	Sand	357180	84
3	4/12/2014	13915	14119	35	4/12/2014	13915	14119	SLK Wtr	7846	Sand	358360	84.7
4	4/13/2014	13661	13865	35	4/13/2014	13661	13865	SLK Wtr	7690	Sand	357860	85.1
5	4/13/2014	13407	13611	35	4/13/2014	13407	13611	SLK Wtr	7456	Sand	357700	85
6	4/13/2014	13153	13357	35	4/13/2014	13153	13357	SLK Wtr	7272	Sand	357380	85
7	4/13/2014	12900	13104	35	4/13/2014	12900	13104	SLK Wtr	7369	Sand	357380	85
8	4/13/2014	12646	12850	35	4/13/2014	12646	12850	SLK Wtr	7403	Sand	357980	84.9
9	4/13/2014	12393	12596	35	4/13/2014	12393	12596	SLK Wtr	7426	Sand	357280	85
10	4/14/2014	12138	12342	35	4/14/2014	12138	12342	SLK Wtr	7258	Sand	357700	85
11	4/14/2014	11885	12089	35	4/14/2014	11885	12089	SLK Wtr	7281	Sand	357540	86
12	4/14/2014	11631	11835	35	4/14/2014	11631	11835	SLK Wtr	7149	Sand	357460	84
13	4/14/2014	11377	11581	35	4/14/2014	11377	11581	SLK Wtr	7471	Sand	357780	84.8
14	4/14/2014	11123	11327	35	4/14/2014	11123	11327	SLK Wtr	7375	Sand	357960	84.7
15	4/14/2014	10870	11074	35	4/14/2014	10870	11074	SLK Wtr	4033	Sand	357160	84.5
16	4/15/2014	10616	10820	35	4/15/2014	10616	10820	SLK Wtr	7219	Sand	359160	84
17	4/15/2014	10362	10566	35	4/15/2014	10362	10566	SLK Wtr	8113	Sand	357780	85
18	4/15/2014	10108	10312	35	4/15/2014	10108	10312	SLK Wtr	7219	Sand	357660	83.7
19	4/15/2014	9855	10059	35	4/15/2014	9855	10059	SLK Wtr	7283	Sand	357940	84.9
20	4/15/2014	9601	9805	35	4/15/2014	9601	9805	SLK Wtr	7248	Sand	357220	84.4
21	4/16/2014	9347	9551	35	4/16/2014	9347	9551	SLK Wtr	7376	Sand	357860	85
22	4/16/2014	9093	9297	35	4/16/2014	9093	9297	SLK Wtr	7295	Sand	357780	82.1
23	4/16/2014	8840	9044	35	4/16/2014	8840	9044	SLK Wtr	6750	Sand	357740	85
24	4/16/2014	8586	8790	35	4/16/2014	8586	8790	SLK Wtr	7331	Sand	358080	85.5
25	4/16/2014	8332	8536	35	4/16/2014	8332	8536	SLK Wtr	7268	Sand	357300	85.4
26	4/16/2014	8078	8282	35	4/16/2014	8078	8282	SLK Wtr	7200	Sand	357900	85
27	4/16/2014	7825	8029	35	4/16/2014	7825	8029	SLK Wtr	7220	Sand	357360	85

10/28/2016



Well Name: Roy Ferrell OHI 210H

Drilling Rig: N/A

Directional Drilling: N/A

Drilling Engineer: TBD

Formation: Marcellus

Drilling Mud: N/A

Superintendent: N/A

County, State: Ohio, WV

Cement Surface: N/A

Asset Manager: N/A

Surface Latitude: 40.043149

Surface Longitude: -80.531148

Cement Longstrings: N/A

Geologist: N/A

BH Latitude: 40.027056

BH Longitude: -80.515356

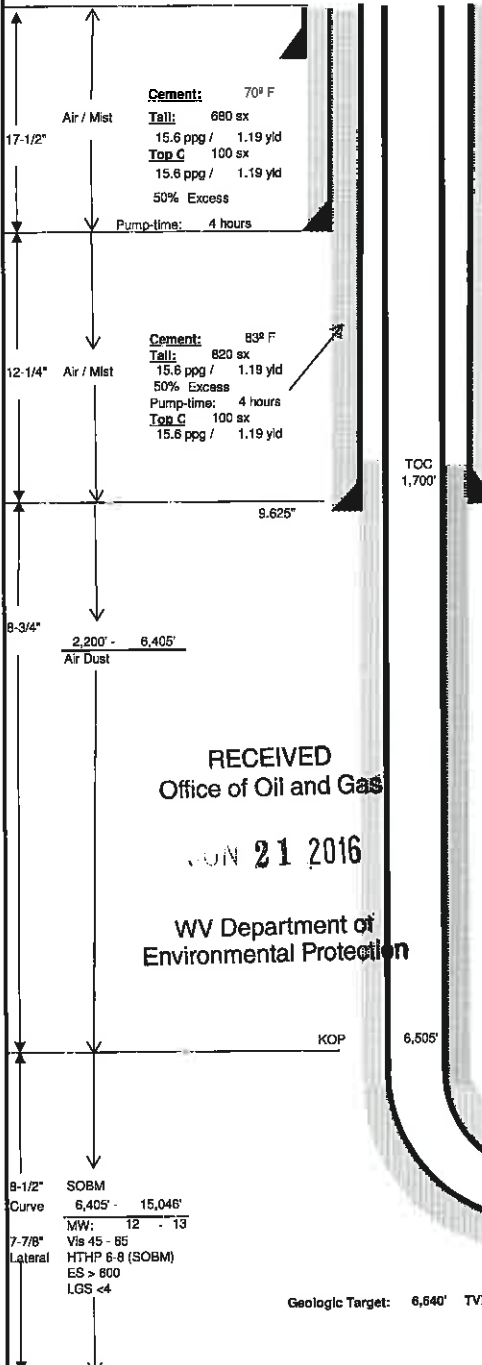
Wellhead: N/A

Land: N/A

KB Elevation: 1214'

Ground Elevation: 1196'

AFE #: N/A



Wellhead Equipment	
Tree Description	
Tubing Head **	Blanking Cap
"B" Section	11" x 6M x 7-1/16" 10M
"A" Section	9-5/8" SOW x 11" 5M

** Space out such that Blanking Cap is no more than 30" above grade.

Casing Detail					
	Size	Wt	Grd	Conn.	From: To:
Surface	13.375	54.5 #	J-55	STC	0' 740'
Interm	9.625	40 #	J-55	LTC	0' 2,200'
Prod	5.5	20 #	P-110	GBCD	0' 15,046'

Casing Design						
	Size	ID	Coil	Burst	Tens	MU torq
Surface	13.375	12.615	1130	2740	514	5140
Interm	9.625	8.835	2570	3950	520	5200
Prod	5.5	4.778	12200	12360	641	8530

BIG INJUN 1,746' KBTVD
BASE BIG INJUN 2,043' KBTVD

Surface Nudge for Anti-Collision purposes.

Directional Drilling Details								
Section	TMD	Inc.	Azimuth	TVD	BUR	DLS	+N-S	+E-W
Surface	0.00'	0.00	0.00	0.00'	0.00	0.00	0.0'	0.0'
Surface	100'	0.00	0.00	100'	0.00	0.00	0.0'	0.0'
Surface	200'	0.00	0.00	200'	0.00	0.00	0.0'	0.0'
Surface	300'	0.00	0.00	300'	0.00	0.00	0.0'	0.0'
Surface	525'	0.00	0.00	525'	0.00	0.00	0.0'	0.0'
KOP1	2,300'	0.00	0.00	2,300'	0.00	0.00	0.0'	0.0'
Hold	3,656'	27.11	47.28	3,606'	2.00	2.00	213.5'	231.3'
KOP2	6,505'	27.11	47.28	6,142'	0.00	0.00	1,094.5'	1,185.2'
Landing Pt	7,325'	89.30	157.42	6,641'	7.58	12.00	754.8'	1,582.8'
TD	15,046'	89.30	157.42	6,735'	0.00	0.00	-6,373.8'	4,547.2'
VS Plane	157.42						VS Length	7,631.25'
							Lateral Length ==>	7,721.00'

Plat Date 5/30/13

Logging Program		
Run	Log Type	Interval
1	TBD	TBD
2	TBD	TBD

Mudlogger operational at Surface

Formation Depths (TVD)	
BASE BIG INJUN	2,043'
GENESECO	6,438'
TULLY	6,468'
HAMILTON	6,496'
MARCELLUS	6,629'
ONONDAGA	6,674'

Geologic Target: 6,640' TVD @ 0° VS w/ 0.70 degrees/100 ft Down-dip

PBHL 5.5'
TMD: 15,046'
TVD: 6,735'
Inclination: 89.30 deg

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Gyro the 1st well on the pad at KOP.
Ensure all Surveys are referenced to Grid North!!

Drawn by: TBD
Date: 8/15/2013

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	4/11/2014
State:	WEST VIRGINIA
County:	OHIO
API Number:	4706900172
Operator Name:	CHEESAPEAKE APPALACHIA LLC
Well Name and Number:	ROY FERRELL OHJ 210H
Longitude:	-80 531148
Latitude:	40 043149
Long/Lat Projection:	NAD27
Production Type:	GAS
True Vertical Depth (TVD):	6,774
Total Water Volume (gal)*:	5,415,732

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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
Fresh Water	CHEESAPEAKE ENERGY	Carrier/Base Fluid	Water	007732-18-5	100.00%	77.94400%	
Recycled Produced Water	CHEESAPEAKE ENERGY	Carrier/Base Fluid	Water	007732-18-5	100.00%	2.94210%	
EC6110A	NALCO	Anti-Bacterial Agent	Ethanol Glutaraldehyde (Pentanediol) Quaternary Ammonium Compounds	000064-17-5 000111-30-8 NA	5.00% 60.00% 10.00%	0.00149% 0.01787% 0.00298%	
EC6629A	NALCO	Scale Inhibitor	No Hazardous Components	NONE		0.00000%	
Northern White Sand	WEATHERFORD	Proppant - Natural	Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	100.00%	12.00108%	
100 Mesh Sand	WEATHERFORD	Proppant - Natural	Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	100.00%	5.15535%	
ACID	WEATHERFORD	Acid	Hydrochloric Acid	007647-01-0	15.00%	0.19310%	
HYDROCHLORIC, WP9684L	WEATHERFORD	pH Adjusting Agent	Water	007732-18-5	85.00%	1.09425%	
WG15L	WEATHERFORD	Gelling Agent	Potassium Hydroxide	000584-08-7	60.00%	0.02246%	
WFR-65LA	WEATHERFORD	Friction Reducer	Petroleum Distillate Hydrotreated Light	001310-58-3 064742-47-8	40.00% 70.00%	0.01497% 0.01464%	
	WEATHERFORD	Friction Reducer	Ammonium Acetate	000631-61-8	5.00%	0.00724%	
	WEATHERFORD	Friction Reducer	Petroleum Distillate Hydrotreated Light	064742-47-8	40.00%	0.05788%	

WIC-641L	WEATHERFORD	Iron Control Agent	Citric Acid	000077-92-9	70.00%	0.00315%
WBK-133 OXIDIZER	WEATHERFORD	Breaker	Ammonium Persulfate	007727-54-0	100.00%	0.00057%
WAI-251LC	WEATHERFORD	Corrosion Inhibitor	2-Butoxyethanol (Ethylene Glycol Monobutyl Ether) Branched-Ethoxylated Nonyl Phenol (Branched-Nonyl Phenol Ethoxylate)	000111-76-2 068412-54-4	7.00% 10.00%	0.00005% 0.00007%
			Cinnamaldehide	000104-55-2	10.00%	0.00007%
			Dimethyl Formamide	000068-12-2	40.00%	0.00028%
			Ethylene Glycol	000107-21-1	60.00%	0.00041%
			Isopropanol (Isopropyl Alcohol, Propan-2-ol)	000067-63-0	7.00%	0.00005%
			Tar bases, quinoline derivs, benzyl chloride-quaternized	072480-70-7	13.00%	0.00009%
			Triethyl Phosphate	000078-40-0	7.00%	0.00005%

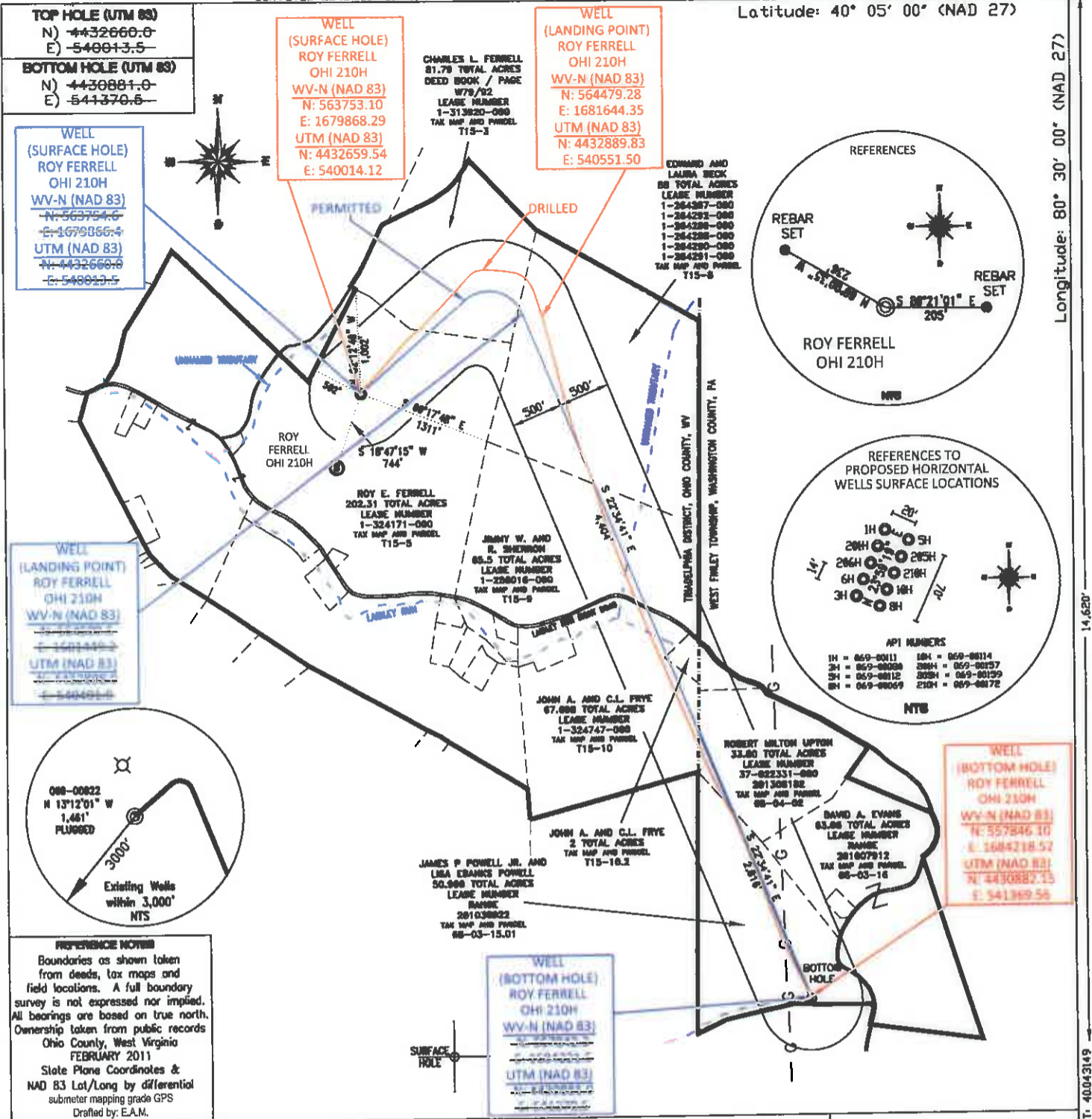
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Additional Ingredients Not Listed on MSDS						
EC6110A, EC6629A	NALCO	Anti-Bacterial Agent, Scale Inhibitor	Methanol (Methyl Alcohol) Proprietary Acrylate Polymer Proprietary Quaternary Ammonium Salt	000067-56-1 TRADE SECRET TRADE SECRET		0.00967% 0.00967% 0.00967%
WAI-251LC, WFR-65LA, WGA-15L, WIC-641L, WPB-584L	WEATHERFORD	Corrosion Inhibitor, Friction Reducer, Gelling Agent, Iron Control Agent, pH Adjusting Agent	Water Alcohols ethoxylated C12-16 Guar Gum Potassium Carbonate Proprietary Alcohol Proprietary Ethoxylated Nonylphenol Proprietary Friction Reducer Additive Sorbitan Water	007732-18-5 068551-12-2 009000-30-0 000584-08-7 TRADE SECRET TRADE SECRET TRADE SECRET 008007-43-0 007732-18-5		0.03268% 0.01515% 0.01515% 0.02485% 0.00024% 0.00024% 0.14497% 0.01515% 0.00325%

* 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%

"Additional Ingredients Not Listed on MSDS" component information were obtained directly from the supplier. As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of this information should be directed to the supplier who provided it.

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.



TOP HOLE (UTM 83)
N) 4432660.0
E) 548813.5

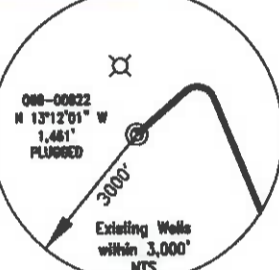
BOTTOM HOLE (UTM 83)
N) 4430881.0
E) 541370.5

WELL (SURFACE HOLE)
ROY FERRELL
OHI 210H
WV-N (NAD 83)
N: 563754.6
E: 1679868.4
UTM (NAD 83)
N: 4432660.0
E: 548813.5

WELL (SURFACE HOLE)
ROY FERRELL
OHI 210H
WV-N (NAD 83)
N: 563753.10
E: 1679868.29
UTM (NAD 83)
N: 4432659.54
E: 540014.12

WELL (LANDING POINT)
ROY FERRELL
OHI 210H
WV-N (NAD 83)
N: 564479.28
E: 1681644.35
UTM (NAD 83)
N: 4432889.83
E: 540551.50

WELL (LANDING POINT)
ROY FERRELL
OHI 210H
WV-N (NAD 83)
N: 563754.6
E: 1679868.4
UTM (NAD 83)
N: 4432660.0
E: 548813.5



REFERENCE NOTES
Boundaries as shown taken from deeds, tax maps and field locations. A full boundary survey is not expressed nor implied. All bearings are based on true north. Ownership taken from public records Ohio County, West Virginia FEBRUARY 2011 State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS Drafted by: E.A.M.

FILE #: CHE 034
DRAWING #: 1975
SCALE: PLAT = (1"=1400')
TICK MARK = (1"=2000')

MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SOURCE SUBMETER MAPPING OF ELEVATION: 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: *[Signature]*

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



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

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

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

WATERSHED: WHEELING CREEK

COUNTY/DISTRICT: OHIO/TRIADELPHIA

SURFACE OWNER: ROY E. FERRELL

OIL & GAS ROYALTY OWNER: ROY E. FERRELL

LEASE NUMBERS: _____

DATE: MAY 10, 2016

OPERATOR'S WELL #: ROY FERRELL OHI 210H AS-DRILLED

API WELL #: 47 69 00172
STATE COUNTY PERMIT

AS-BUILT
ELEVATION: 1196.0'

QUADRANGLE: VALLEY GROVE WV.

ACREAGE: 202.31 +/-

ACREAGE: 591.30 +/10/28/2016

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

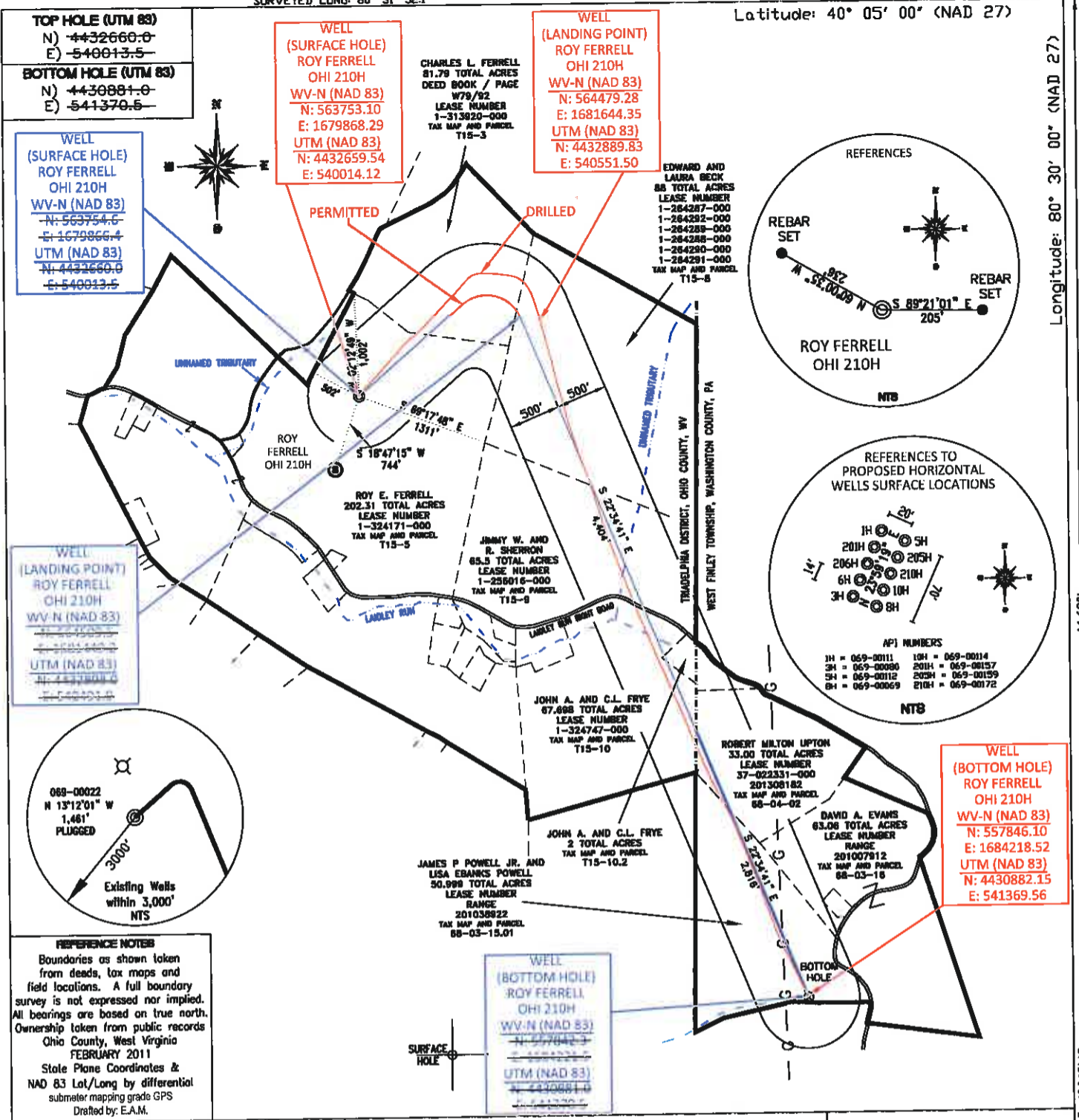
TARGET FORMATION: MARCELLUS

WELL OPERATOR: CHESAPEAKE APPALACHIA, LLC.

ADDRESS: PO BOX 18496

CITY: OKLAHOMA CITY STATE: OK ZIP CODE: 73154-0496

AS-DRILLED DEPTH: TVD: 6,766.446' TMD: 14,784'
DESIGNATED AGENT: JESSICA GREATHOUSE
ADDRESS: PO Box 6070
CITY: CHARLESTON STATE: WV ZIP CODE: 25301



TOP HOLE (UTM 83)
N) 4432660.0
E) 540013.5

BOTTOM HOLE (UTM 83)
N) 4430881.0
E) 541370.5

WELL (SURFACE HOLE) ROY FERRELL OHI 210H WV-N (NAD 83)
N: 563754.6
E: 1679866.4
UTM (NAD 83)
N: 4432660.0
E: 540013.5

WELL (LANDING POINT) ROY FERRELL OHI 210H WV-N (NAD 83)
N: 564479.28
E: 1681644.35
UTM (NAD 83)
N: 4432889.83
E: 540551.50

WELL (BOTTOM HOLE) ROY FERRELL OHI 210H WV-N (NAD 83)
N: 557846.10
E: 1684218.52
UTM (NAD 83)
N: 4430882.15
E: 541369.56

REFERENCE NOTES
Boundaries as shown taken from deeds, tax maps and field locations. A full boundary survey is not expressed nor implied. All bearings are based on true north. Ownership taken from public records Ohio County, West Virginia FEBRUARY 2011 State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS Drafted by: E.A.M.

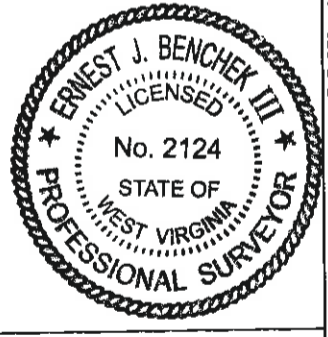
FILE #: CHE 034
DRAWING #: 1975
SCALE: PLAT = (1"=1400')
TICK MARK = (1"=2000')

MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SOURCE SUBMETER MAPPING OF ELEVATION: 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: *[Signature]*
L.L.S. #2124 : Ernest J. Benchek III



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

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

WATERSHED: WHEELING CREEK

COUNTY/DISTRICT: OHIO/TRIADELPHIA

SURFACE OWNER: ROY E. FERRELL

OIL & GAS ROYALTY OWNER: ROY E. FERRELL

LEASE NUMBERS: _____

DATE: MAY 10, 2016

OPERATOR'S WELL #: ROY FERRELL OHI 210H AS-DRILLED

API WELL #: 47 69 00172
STATE COUNTY PERMIT

AS-BUILT
ELEVATION: 1196.0'

QUADRANGLE: VALLEY GROVE WV.

ACREAGE: 202.31 +/-
ACREAGE: 591.30 +/- 10/28/2016

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

WELL OPERATOR : CHESAPEAKE APPALACHIA, LLC.

ADDRESS: PO BOX 18496

CITY: OKLAHOMA CITY STATE: OK ZIP CODE: 73154-0496

AS-DRILLED DEPTH: TVD: 6,766.446' TMD: 14,784'
DESIGNATED AGENT : JESSICA GREATHOUSE
ADDRESS: PO Box 6070
CITY: CHARLESTON STATE: WV ZIP CODE: 25301

SURFACE HOLE DEC. LAT: 40043149 SURVEYED LAT: 40° 02' 35.3"