

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

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Office of Oil and Gas

AUG 29 2017

WV Department of
Environmental Protection

API 47-035-03027 County Jackson District Ripley
Quad Sandyville Pad Name DeBerry Field/Pool Name Ripley Storage
Farm name Deberry, Michael W. & Billie J. Well Number 12597
Operator (as registered with the OOG) Columbia Gas Transmission, LLC
Address PO Box 1273 City Charleston State WV Zip 25314

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4303576.7 m Easting 440595.3 m
Landing Point of Curve Northing N/A Easting N/A
Bottom Hole Northing 4303783.6 m Easting 440749.2 m

Elevation (ft) 804 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 storage
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)
fresh water based w/ NaCl, KCl, polymer, starch, biocide, pH control, etc.

Date permit issued 3/3/17 Date drilling commenced 5/25/17 Date drilling ceased 6/16/17
Date completion activities began 6/21/17 Date completion activities ceased 7/18/17
Verbal plugging (Y/N) N/A 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 none Open mine(s) (Y/N) depths N
Salt water depth(s) ft 650 (trace) Void(s) encountered (Y/N) depths N
Coal depth(s) ft none Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: _____

APPROVED

NAME: Jamie Stevens
DATE: 10/26/2017

11/10/2017

API 47-035 - 03027 Farm name Deberry, Michael W. & Billie J. Well number 12597

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24	20	30 GL	New	L/S 65.5	none	N
Surface	17.5	13.375	565	New	J-55 54.5	none	Y
Coal							
Intermediate 1	12.25	9.625	2559	New	J-55 36	none	Y
Intermediate 2	8.75	7	5151	New	N-80 23	none	N
Intermediate 3							
Production	6.25	4.5	5311	New	P-110 11.6	none	N
Tubing							
Packer type and depth set							

Comment Details All depths in WR-35 referenced to rig floor (16 ft above GL), except where designated.

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	Type I	26	15	1.0	26	3 GL	3
Surface	Class A	470	15.6	1.20	564	0 GL	8
Coal							
Intermediate 1	Class A	520 lead / 350 tail	15.6 / 15.6	5.20 / 5.23	4534	0 GL	12
Intermediate 2	Class A	100 lead / 70 tail	15.6 / 15.6	5.26 / 5.36	901	4070	24
Intermediate 3							
Production	Pozmix / Class A	150 lead / 100 tail	13.1 / 15.6	1.71 / 1.23	379	2006	24
Tubing							

Drillers TD (ft) 5313 Loggers TD (ft) 5313
 Deepest formation penetrated Helderberg Plug back to (ft) N/A
 Plug back procedure _____

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Kick off depth (ft) 2613

APR 29 2017

Check all wireline logs run caliper density deviated/directional induction neutron resistivity gamma ray temperature sonic

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Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

13.375" casing: three (3) centralizers on jts 1, 2, and on top t.
9.625" casing: eight (8) centralizers on jts 1, 2, 11, 21, 31, 41, 51, and 61.
7" casing: twelve (12) centralizers on jts 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12.
4.5" casing: ten (1) centralizers on jts 1, 3, 5, 7, 9, 10, 11, 12, 13, and 14.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

API 47- 035 - 03027 Farm name Deberry, Michael W. & Billie J. Well number 12597

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	6/23/17	5194	5222	168	Oriskany

Please insert additional pages as applicable.

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STIMULATION INFORMATION PER STAGE

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Complete a separate record for each stimulation stage.

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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)
1	7/7/17	16	3600	2150	3680	25200	539	252 MSCF

Please insert additional pages as applicable.

APPROVED
NAME: *Jamie Stevens*
DATE: *10/20/2017*

11/10/2017

API 47- 035 - 03027 Farm name Deberry, Michael W. & Billie J. Well number 12597

PRODUCING FORMATION(S) DEPTHS
Oriskany (natural gas storage) 5007 TVD 5194 MD

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GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1254 psi Bottom Hole _____ psi DURATION OF TEST 0.75 hrs

OPEN FLOW Gas Oil NGL Water GAS MEASURED BY
9400 mcfpd _____ bpd _____ bpd _____ bpd 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		
Salt Sand			1724	1833	
Little Lime			1838	1861	
Big Lime			1864	1998	
Big Injun			2023	2109	
Sunbury Shale			2469		
Berea			2492	2499	
Marcellus			5081	5089	
Onondaga			5089	5194	
Oriskany			5194	5272	storage gas
Helderberg			5272	5313	

Please insert additional pages as applicable.

Drilling Contractor Yost Drilling, LLC
Address 313 Steele Hill Road City Mt. Morris State PA Zip 15349

Logging Company Baker Hughes
Address 106 Island Ave City Buckhannon State WV Zip 26201

Cementing Company C&J Energy Services
Address 1650 Hackers Creek Rd City Jane Lew State WV Zip 26378

Stimulating Company Reliance Well Services, LLC
Address 1250 Tower Lane City Erie State PA Zip 16505

Please insert additional pages as applicable.

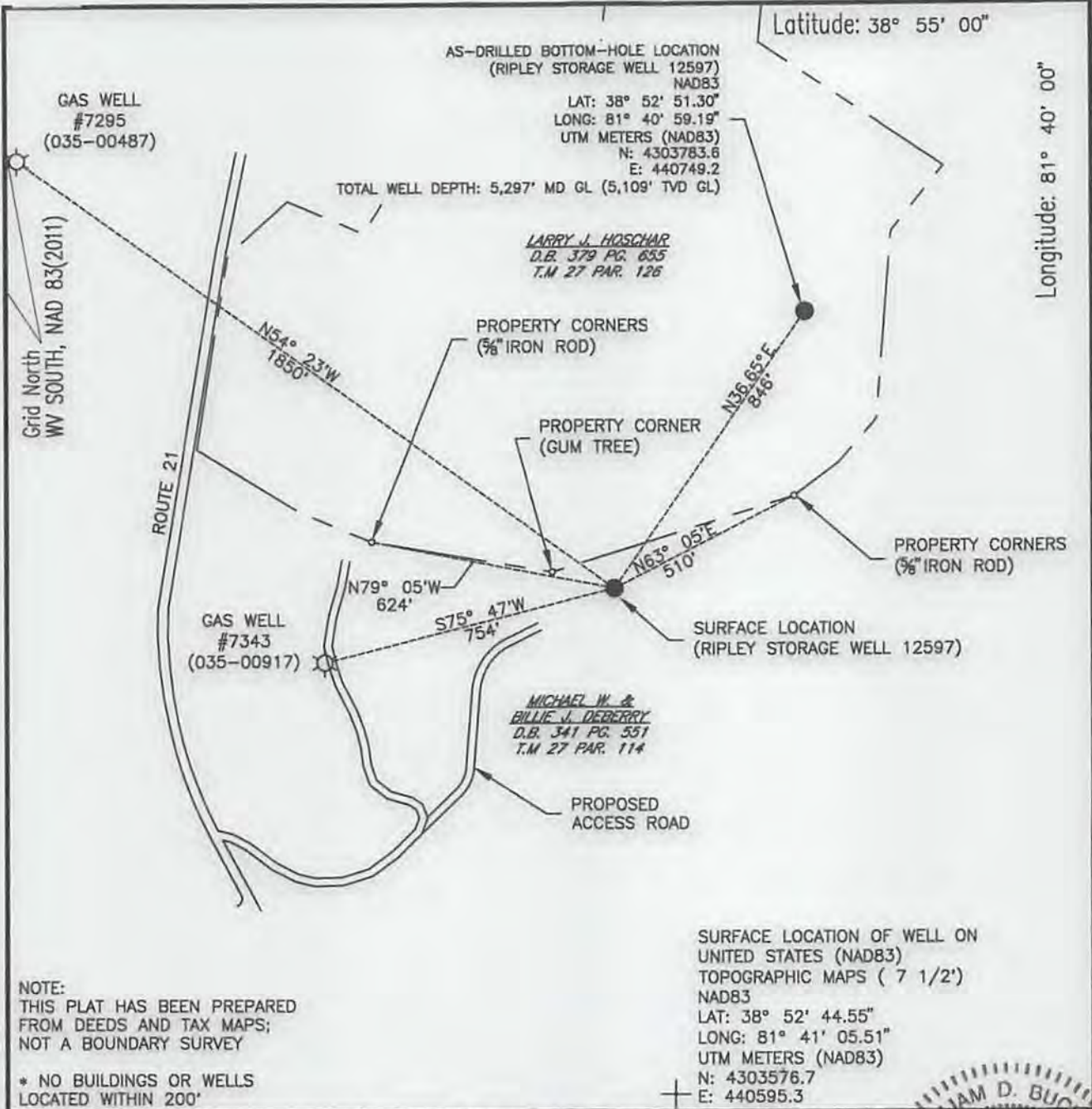
Completed by James Amos Telephone 304-483-0073
Signature  Title Sr WET Engineer Date 8/28/17

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

5,223'

Latitude: 38° 55' 00"

Longitude: 81° 40' 00"



13,763'

NOTE:
THIS PLAT HAS BEEN PREPARED
FROM DEEDS AND TAX MAPS;
NOT A BOUNDARY SURVEY

* NO BUILDINGS OR WELLS
LOCATED WITHIN 200'

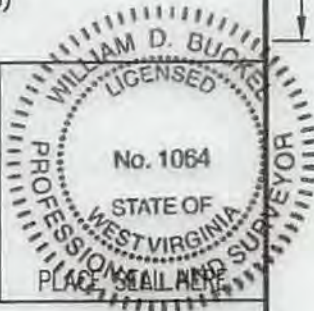
SURFACE LOCATION OF WELL ON
UNITED STATES (NAD83)
TOPOGRAPHIC MAPS (7 1/2')
NAD83
LAT: 38° 52' 44.55"
LONG: 81° 41' 05.51"
UTM METERS (NAD83)
N: 4303576.7
E: 440595.3

FILE #: _____
DRAWING #: 12597
SCALE: 1" = 400'
MINIMUM DEGREE OF ACCURACY: 1:2,500'
PROVEN SOURCE OF ELEVATION: STATIC GPS SURVEY WITH TIES TO NGS DATA

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: *William D. Bucker*

R.P.E.: _____ L.L.S.: 1064



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



DATE: AUGUST 1, 2017
OPERATOR'S WELL #: RIPLEY 12597
API WELL #: 47 035 03027
STATE COUNTY PERMIT

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

WATERSHED: MUD RUN ELEVATION: 804'

COUNTY/DISTRICT: JACKSON / RIPLEY QUADRANGLE: SANDYVILLE

SURFACE OWNER: MICHAEL W. & BILLIE J. DEBERRY ACREAGE: 132

OIL & GAS ROYALTY OWNER: OTIS COAST AND KATIE COAST LEASE NO. 1052291-000 (SURFACE) 1052786-000 (BOTTOM HOLE) ACREAGE: 50

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

TARGET FORMATION: ORISKANY SANDSTONE (STORAGE RESERVOIR) AS-DRILLED DEPTH: 5178 FT. MD GL 4991 FT. TVD GL

WELL OPERATOR COLUMBIA GAS TRANSMISSION DESIGNATED AGENT PAUL AMICK
Address 1700 MACCORKLE AVE. SE PO BOX 1273 Address 1700 MACCORKLE AVE. SE PO BOX 1273

City CHARLESTON State WV Zip Code 25325-1273 City CHARLESTON State WV Zip Code 25325-1273

11/10/2017

11/10/2017

City CHARLESTON State WV Zip Code 25325-1273 City CHARLESTON State WV Zip Code 25325-1273
 Address 1700 MACCORKLE AVE. SE PO BOX 1273 Address 1700 MACCORKLE AVE. SE PO BOX 1273
 WELL OPERATOR COLUMBIA GAS TRANSMISSION DESIGNATED AGENT PAUL AMICK
 TARGET FORMATION: ORISKANY SANDSTONE (STORAGE RESERVOIR) AS-DRILLED DEPTH: 4991 FT. MD GL. 5178 FT. MD GL.
 CLEAN OUT & REPLUG OTHER CHANGE SPECIFY: _____
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 OIL & GAS ROYALTY OWNER: LEASE NO. 1052291-000 (SURFACE) 1052788-000 (BOTTOM HOLE) ACREAGE: 50
 SURFACE OWNER: MICHAEL W. & BILLIE J. DEBERRY ACREAGE: 132
 COUNTY/DISTRICT: JACKSON \ RIPLEY QUADRANGLE: SANDYVILLE ELEVATION: 804'

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

CHARLESTON, WV 25304
 801 57TH STREET
 OFFICE OF OIL & GAS
 WDEP

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

OF ELEVATION: WITH TIES TO NGSD DATA
 PROVEN SOURCE: STATIC GPS SURVEY
 OF ACCURACY: 1:2,500'
 SCALE: 1" = 400'
 DRAWING #: 12597
 FILE #:

R.P.E.: L.L.S.: 1084
 Signed: _____
 THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
 LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY
 BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY
 PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND
 I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS



E: 440598.3 N: 4303278.7
 UTM METERS (NAD83) LONG: 81° 41' 05.21" LAT: 38° 52' 44.52"
 TOPOGRAPHIC MAPS (7 1/2)
 UNITED STATES (NAD83)
 SURFACE LOCATION OF WELL ON

LOCATED WITHIN 200'.
 * NO BUILDINGS OR WELLS
 NOT A BOUNDARY SURVEY
 FROM DEEDS AND TAX MAPS;
 THIS PLAT HAS BEEN PREPARED
 NOTE:

PROPOSED
 ACCESS ROAD

MICHAEL W. &
 BILLIE J. DEBERRY
 O.B. 241 P.C. 331
 T.M. 27 PAR. 114

SURFACE LOCATION
 (RIPLEY STORAGE WELL 12597)

GAS WELL
 #7343
 (035-00817)

LARRY J. HOSCHMAN
 O.B. 279 P.C. 653
 T.M. 27 PAR. 128

TOTAL WELL DEPTH: 5287'. MD GL. (5108'. TMD GL.)
 UTM METERS (NAD83) N: 4303283.8 E: 440748.2
 LONG: 81° 40' 59.19" LAT: 38° 52' 51.30"
 (RIPLEY STORAGE WELL 12597)
 AS-DRILLED BOTTOM-HOLE LOCATION

Longitude: 81° 04' 00"

Latitude: 38° 55' 00"

12,182'

5,233'

1105' X 83' (1105) X 83' (1105) X 83'

GAS WELL
 #7295
 (035-00487)

ROUTE 51

PROPERTY CORNERS
 (IRON ROD)

PROPERTY CORNER
 (GUM TREE)

PROPERTY CORNERS
 (IRON ROD)

