



API 47-170 - 6250 Farm name Jordan Family Partnership Well number 514318

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/fl	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	40'	New	A500 94#		Y
Surface	17-1/2"	13-3/8"	1037'	New	J55 54.5#	102', 957'	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	5242'	New	A500 40#	275', 3315', 5151'	Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	14569'	New	P110 20#		N
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	Class A	38	15.8	1.18	44.84	0	8
Surface	Class A	810	15.6	1.18	955.8	0	8
Coal							
Intermediate 1	Class A	355/1420	14.2/15.6	1.28/1.18	2130	0	8
Intermediate 2							
Intermediate 3							
Production	Class A/Class H	450/940	14.2/15.2	1.31/1.94	2413	5255	8
Tubing							

Drillers TD (ft) 14569' Loggers TD (ft) N/A  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 5296

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 centralizer at 40', 623', 973'  
Intermediate-bow spring centralizers ran at the shoe and every 500' to TD.  
Production- plastic centralizer on every joint from the shoe up to intermediate casing point at 5242'

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 \_\_\_\_\_





Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
FRESH WATER ZONE	1	1	717	717
SAND / SHALE	1	1	865	865
COAL	865	865	867	867
SAND / SHALE	867	867	1,277.00	1,277.00
COAL	1,277.00	1,277.00	1,280.00	1,280.00
SAND / SHALE	1,280.00	1,280.00	1,868.00	1,868.00
MAXTON	1,868.00	1,868.00	2,110.00	2,110.00
BIG LIME	2,110.00	2,110.00	2,514.00	2,514.00
WEIR	2,514.00	2,514.00	2,691.00	2,691.00
BEREA	2,691.00	2,691.00	2,708.00	2,708.00
GANTZ	2,708.00	2,708.00	2,767.00	2,767.00
50F	2,767.00	2,767.00	2,896.00	2,896.00
30F	2,896.00	2,896.00	2,921.00	2,921.00
GORDON	2,921.00	2,921.00	3,060.00	3,060.00
4TH	3,060.00	3,060.00	3,219.00	3,219.00
5TH	3,219.00	3,219.00	3,585.00	3,585.00
WARREN	3,585.00	3,585.00	3,806.00	3,806.00
SPEECHLEY	3,806.00	3,806.00	4,168.00	4,168.00
BALLTOWN A	4,168.00	4,168.00	4,547.00	4,547.00
BRADFORD	4,547.00	4,547.00	5,175.00	5,175.00
BENSON	5,175.00	5,175.00	5,568.00	5,563.20
ALEXANDER	5,568.00	5,563.20	6,348.00	6,197.70
ELK	6,348.00	6,197.70	6,880.00	6,611.40
SONYEA	6,880.00	6,611.40	7,048.00	6,741.20
MIDDLESEX	7,048.00	6,741.20	7,093.00	6,774.70
GENESEE	7,093.00	6,774.70	7,259.00	6,880.20
GENESE0	7,259.00	6,880.20	7,320.00	6,909.80
TULLY	7,320.00	6,909.80	7,375.00	6,932.30
HAMILTON	7,375.00	6,932.30	7,507.00	6,970.80
MARCELLUS	7,507.00	6,970.80	14,569.00	6,988.00

Well has not been flowed back or tested - Will send amended report when testing has been completed

**Stimulation Notes:**

Re-perforated stage 26 (26.1)

Performed additional injection tests on stage 3 and 31

**514318 - Perforations**

<b>Stage Number</b>	<b>Perforation Date</b>	<b>Top Perf Depth (ftKB)</b>	<b>Bottom Perf Depth (ftKB)</b>	<b>Number of Shots</b>	<b>Formation</b>
<b>Initiation Sleeve</b>	3/5/2014	14,539.00	14,541.00	10	MARCELLUS
<b>1</b>	3/6/2014	14,418.00	14,510.00	32	MARCELLUS
<b>2</b>	3/6/2014	14,268.00	14,390.00	40	MARCELLUS
<b>3</b>	3/6/2014	14,118.00	14,240.00	40	MARCELLUS
<b>4</b>	4/11/2014	13,968.00	14,088.00	40	MARCELLUS
<b>5</b>	4/11/2014	13,818.00	13,940.00	40	MARCELLUS
<b>6</b>	4/12/2014	13,668.00	13,790.00	40	MARCELLUS
<b>7</b>	4/12/2014	13,516.00	13,636.00	40	MARCELLUS
<b>8</b>	4/12/2014	13,368.00	13,490.00	40	MARCELLUS
<b>9</b>	4/12/2014	13,218.00	13,340.00	40	MARCELLUS
<b>10</b>	4/13/2014	13,068.00	13,190.00	40	MARCELLUS
<b>11</b>	4/13/2014	12,918.00	13,036.00	40	MARCELLUS
<b>12</b>	4/13/2014	12,768.00	12,890.00	40	MARCELLUS
<b>13</b>	4/13/2014	12,618.00	12,740.00	40	MARCELLUS
<b>14</b>	4/14/2014	12,468.00	12,590.00	40	MARCELLUS
<b>15</b>	4/14/2014	12,318.00	12,440.00	40	MARCELLUS
<b>16</b>	4/14/2014	12,168.00	12,290.00	40	MARCELLUS
<b>17</b>	4/15/2014	12,018.00	12,140.00	40	MARCELLUS
<b>18</b>	4/15/2014	11,868.00	11,990.00	40	MARCELLUS
<b>19</b>	4/15/2014	11,717.00	11,836.00	40	MARCELLUS
<b>20</b>	4/16/2014	11,568.00	11,690.00	40	MARCELLUS
<b>21</b>	4/16/2014	11,418.00	11,540.00	40	MARCELLUS
<b>22</b>	4/16/2014	11,268.00	11,390.00	40	MARCELLUS
<b>23</b>	4/16/2014	11,118.00	11,234.00	40	MARCELLUS
<b>24</b>	4/17/2014	10,968.00	11,086.00	40	MARCELLUS
<b>25</b>	4/17/2014	10,818.00	10,940.00	40	MARCELLUS
<b>26</b>	4/17/2014	10,670.00	10,790.00	40	MARCELLUS
<b>26.1 (Re-Perf)</b>	4/19/2014	10,624.00	10,715.00	32	MARCELLUS
<b>27</b>	4/19/2014	10,474.00	10,596.00	40	MARCELLUS
<b>28</b>	4/19/2014	10,324.00	10,444.00	40	MARCELLUS
<b>29</b>	4/19/2014	10,174.00	10,296.00	40	MARCELLUS
<b>30</b>	4/19/2014	10,024.00	10,146.00	40	MARCELLUS
<b>31</b>	4/20/2014	9,879.00	9,996.00	40	MARCELLUS
<b>32</b>	4/20/2014	9,724.00	9,846.00	40	MARCELLUS
<b>33</b>	4/20/2014	9,574.00	9,696.00	40	MARCELLUS
<b>34</b>	4/21/2014	9,424.00	9,546.00	40	MARCELLUS
<b>35</b>	4/21/2014	9,274.00	9,390.00	40	MARCELLUS
<b>36</b>	4/21/2014	9,124.00	9,244.00	40	MARCELLUS
<b>37</b>	4/22/2014	8,974.00	9,096.00	40	MARCELLUS
<b>38</b>	4/22/2014	8,826.00	8,946.00	40	MARCELLUS
<b>39</b>	4/23/2014	8,674.00	8,796.00	40	MARCELLUS
<b>40</b>	4/23/2014	8,524.00	8,646.00	40	MARCELLUS
<b>41</b>	4/23/2014	8,374.00	8,496.00	40	MARCELLUS
<b>42</b>	4/23/2014	8,224.00	8,346.00	40	MARCELLUS
<b>43</b>	4/24/2014	8,074.00	8,196.00	40	MARCELLUS
<b>44</b>	4/24/2014	7,924.00	8,046.00	40	MARCELLUS
<b>45</b>	4/24/2014	7,774.00	7,896.00	40	MARCELLUS
<b>46</b>	4/24/2014	7,624.00	7,746.00	40	MARCELLUS
<b>47</b>	4/25/2014	7,474.00	7,597.00	40	MARCELLUS
<b>48</b>	4/25/2014	7,324.00	7,440.00	40	MARCELLUS

**514318 - Stimulated Stages**

Stage Number	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)
Initiation Sleeve	3/6/2014	15.30	7,647.00	NA	5,848	NA	1,017	0
1	3/6/2014	80.40	8,566.00	5,897.00	3,619	199,400	5,317	0
2	3/6/2014	82.60	8,203.00	6,374.00	4,430	202,200	5,375	0
Inj Test	3/7/2014	33.30	6,349.00	6,403.00	5,025	NA	1,770	0
3	4/11/2014	81.80	8,648.00	6,205.00	4,858	201,300	5,182	0
4	4/11/2014	98.80	8,106.00	5,872.00	4,784	205,400	4,886	0
5	4/11/2014	98.50	8,153.00	6,178.00	5,054	205,100	4,863	0
6	4/12/2014	99.10	8,080.00	6,389.00	4,966	153,300	5,181	0
7	4/12/2014	100.40	7,931.00	5,945.00	4,784	201,300	5,086	0
8	4/12/2014	99.90	8,104.00	6,331.00	4,977	202,900	4,950	0
9	4/13/2014	90.70	8,466.00	6,293.00	5,299	194,700	5,847	0
10	4/13/2014	96.20	8,488.00	6,106.00	5,245	202,100	5,001	0
11	4/13/2014	96.80	8,686.00	6,412.00	5,360	201,800	5,032	0
12	4/13/2014	97.90	8,294.00	6,262.00	4,562	201,100	4,875	0
13	4/14/2014	98.90	8,136.00	6,905.00	3,881	201,600	5,077	0
14	4/14/2014	100.30	8,257.00	6,335.00	4,557	201,100	5,004	0
15	4/14/2014	100.00	8,413.00	7,042.00	4,039	200,800	5,168	0
16	4/15/2014	98.10	8,220.00	6,195.00	5,539	200,700	4,932	0
17	4/15/2014	100.30	8,187.00	6,097.00	5,438	200,100	4,912	0
18	4/15/2014	90.30	8,637.00	6,426.00	4,787	201,700	5,109	0
19	4/15/2014	99.10	8,250.00	6,471.00	5,209	202,300	5,077	0
20	4/16/2014	99.40	8,295.00	6,190.00	4,612	201,600	5,206	0
21	4/16/2014	97.30	7,785.00	6,773.00	5,541	201,300	5,695	0
22	4/16/2014	100.40	7,921.00	5,916.00	4,997	200,200	5,014	0
23	4/17/2014	100.20	7,941.00	6,391.00	5,168	201,400	5,059	0
24	4/17/2014	97.53	7,781.00	6,377.00	5,293	201,100	5,005	0
25	4/17/2014	100.20	7,966.00	6,338.00	5,371	200,600	5,250	0
26	4/18/2014	70.77	8,632.00	6,782.00	4,923	15,300	2,327	0
26.1 (Re-Perf)	4/19/2014	92.50	8,148.00	6,610.00	5,165	184,600	5,614	0
27	4/19/2014	100.20	7,786.00	6,168.00	5,346	201,700	5,096	0
28	4/19/2014	101.10	7,257.00	5,746.00	5,477	201,000	5,020	0
29	4/19/2014	99.80	7,730.00	6,254.00	4,561	196,500	4,949	0
30	4/19/2014	100.70	7,695.00	6,516.00	5,525	201,900	5,074	0
31	4/20/2014	97.90	7,896.00	6,616.00	NA	189,500	4,662	0
Inj Test	4/20/2014	7.60	4,792.00	NA	NA	NA	2,564	0
32	4/20/2014	98.50	7,747.00	6,592.00	5,568	203,600	4,945	0
33	4/21/2014	100.00	7,742.00	6,521.00	4,664	202,400	4,940	0
34	4/21/2014	96.19	7,594.00	6,275.00	4,197	204,000	5,079	0
35	4/21/2014	97.00	8,156.00	7,185.00	5,274	203,200	4,908	0
36	4/21/2014	99.60	7,903.00	6,516.00	4,657	199,300	4,986	0
37	4/22/2014	93.70	8,191.00	6,667.00	5,638	189,100	4,836	0
38	4/22/2014	99.23	8,063.00	6,203.00	4,723	201,400	4,952	0
39	4/23/2014	99.50	7,926.00	5,856.00	4,153	200,900	5,013	0
40	4/23/2014	98.60	8,255.00	6,705.00	5,446	198,900	5,009	0
41	4/23/2014	100.60	7,505.00	6,037.00	5,297	201,700	5,052	0
42	4/24/2014	100.60	7,594.00	5,431.00	4,516	199,900	4,862	0
43	4/24/2014	100.20	7,544.00	5,747.00	5,147	200,400	4,889	0
44	4/24/2014	98.40	7,599.00	5,701.00	5,464	201,800	4,853	0
45	4/24/2014	100.80	7,312.00	5,641.00	4,574	200,800	4,902	0
46	4/24/2014	100.80	7,371.00	5,954.00	5,365	200,500	5,019	0
47	4/25/2014	100.80	7,363.00	6,383.00	3,631	200,800	5,032	0
48	4/25/2014	100.60	7,356.00	6,636.00	3,548	186,700	4,866	0



# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/5/2014
Job End Date:	4/25/2014
State:	West Virginia
County:	Doddridge
API Number:	47-017-06250-00-00
Operator Name:	EQT Production
Well Name and Number:	CPT11 - 514318
Longitude:	-80.72364300
Latitude:	39.38432400
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,020
Total Base Water Volume (gal):	11,028,902
Total Base Non Water Volume:	483,981



## 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	Halliburton	Carrier	Water	7732-18-5	100.00000	90.12524	
Sand	Halliburton	Proppant	Crystalline Silica	14808-60-7	100.00000	9.38925	
MX-5	Halliburton	Biocide	Sodium Nitrate	7631-99-4	60.00000	0.05664	
Hydrochloric Acid 15%	Halliburton	Acidizing	Hydrochloric Acid	7647-01-0	15.00000	0.03945	
FR-66	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02071	
LGC-36	Halliburton	Adds viscosity to fluid	Naptha, hydrotreated heavy	67742-48-9	50.00000	0.00565	
			Guar Gum	9000-30-0	50.00000	0.00565	
MX-8	Halliburton	Biocide	Bacteria Culture	000-00-0	100.00000	0.00962	
BA-40L	Halliburton	Buffer	Potassium carbonate	584-08-7	60.00000	0.00739	
LP-65	Halliburton	Scale Inhibitor	Ammonium Chloride	12125-02-9	10.00000	0.00255	

Methanol	Halliburton	Corrosion inhibitor	Methanol	67-56-1	60,00000	0.00024	
SP Breaker	Halliburton	Oxidizing Breaker	Sodium Persulfate	7775-27-1	100,00000	0.00015	
Propargyl Alcohol	Halliburton	Corrosion inhibitor	Propargyl Alcohol	107-19-7	10,00000	0.00004	
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.							

\* 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)

# EQT PRODUCTION COMPANY J.D. McREYNOLDS LEASE 1500± ACRES WELL NO. WV 514318

WELL NO. WV 514318  
STATE PLANE COORDINATES  
NORTH ZONE (NAD 27)

N. 324,444.0  
E. 1,654,140.6

LAT=(N) 39.384324  
LONG=(W) 80.723643

UTM (NAD'83)(METERS)  
N. 4,359,472.5  
E. 523,815.3

LANDING POINT  
WELL NO. WV 514318  
STATE PLANE COORDINATES  
NORTH ZONE (NAD 27)

N. 323,591.3  
E. 1,653,247.2

LAT=(N) 39.381949  
LONG=(W) 80.726783

UTM (NAD'83)(METERS)  
N. 4,359,208.1  
E. 523,547.4

BOTTOM HOLE  
WELL NO. WV 514318  
STATE PLANE COORDINATES  
NORTH ZONE (NAD 27)

N. 317,375.2  
E. 1,654,812.0

LAT=(N) 39.364943  
LONG=(W) 80.720928

UTM (NAD'83)(METERS)  
N. 4,357,322.4  
E. 524,055.8

### NOTES ON SURVEY

1. TIES TO WELLS, CORNERS, AND REFERENCES ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 280 PAGE 695, DEED BOOK 223 PAGE 430, DEED BOOK 282 PAGE 406 & DEED BOOK 175 PAGE 633.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF DODDRIDGE COUNTY IN JULY, 2012.
4. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK).
5. PLAT UPDATED ON 07/08/14 TO SHOW THE AS DRILLED PATH COORDINATES FROM INFORMATION PROVIDED BY EDT ON 02/10/14.



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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677

*Gregory A. Smith*



MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 7749ASDRILLED514318  
PROVEN SOURCE OF ELEVATION DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 1,130' (GROUND) 1,111' (PROPOSED) WATERSHED FLINT RUN OF McELROY CREEK

DISTRICT GRANT COUNTY DODDRIDGE QUADRANGLE CENTER POINT 7.5'

SURFACE OWNER JORDAN FAMILY PARTNERSHIP ACREAGE 460±

ROYALTY OWNER J.D. McREYNOLDS HEIRS/ASSIGNS ACREAGE 1500±

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION MARCELLUS

ESTIMATED DEPTH \_\_\_\_\_

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT REX C. RAY

ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330

### AS DRILLED INFORMATION

<b>BOTTOM HOLE</b> WELL NO. WV 514318 STATE PLANE COORDINATES NORTH ZONE (NAD 27)	<b>WELL NO. WV 514318</b> STATE PLANE COORDINATES NORTH ZONE (NAD 27)
N. 317,373.8 E. 1,654,800.6	N. 324,444.0 E. 1,654,140.6
LAT=(N) 39.364938 LONG=(W) 80.720969	LAT=(N) 39.384324 LONG=(W) 80.723643
UTM (NAD'83)(METERS) N. 4,357,321.8 E. 524,052.3	UTM (NAD'83)(METERS) N. 4,359,472.5 E. 523,815.3

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

DATE MARCH 15 , 20 13

REVISED DATE JULY 08 , 20 14

OPERATORS WELL NO. WV 514318

API WELL NO. 47-017-06250  
STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS



COUNTY NAME PERMIT

09122014