

APPROVED

NAME: *Julia*

DATE: 2/10/2016

Well Operator's Report of Well Work



Where energy meets innovation.

Well Number: 514391

API: 47 - 017 - 06444

Submission: Initial Amended

Notes: Add'l inj test 1.02

Correction to Production Cement Top
(MD)

RECEIVED
Office of Oil and Gas

DEC 21 2015

WV Department of
Environmental Protection

AX WS 03/28/16
04/01/2016

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

API 47 - 017 - 06444 County DODDRIDGE District WEST UNION
Quad WEST UNION 7.5' Pad Name WEU49 Field/Pool Name _____
Farm name MARY FARR SECRIST Well Number 514391
Operator (as registered with the OOG) EQT Production Company
Address 625 Liberty Ave. EQT Plaza, Suite 1700 City Pittsburgh State PA Zip 15222

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,343,080 Easting 518,426
Landing Point of Curve Northing 4,345,114 Easting 518,758
Bottom Hole Northing 4,343,945 Easting 519,328

Elevation (ft) 1130 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)
SBM 13.1 ppg - powdered hydrocarbon resin, calcium carbonate, ground almond hulls, barium sulfate, calcium chloride, lecithin liquid, organophilic clay,
partially hydrolyzed polyacrylamide/polyacrylate, potassium chloride, sodium carbonate, ground walnut shells, alcohol and modified fatty acid, ferrochrome lignosulfonate, calcium carbonate, fibrous cellulose

Date permit issued 03/13/2014 Date drilling commenced 06/24/2014 Date drilling ceased 2/17/2015
Date completion activities began 6/24/2015 Date completion activities ceased 6/29/2015
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 487 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1542 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 340, 483 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: _____

04/01/2016

API 47-017 - 06444 Farm name MARY FARR SECRIST Well number 514391

| CASING STRINGS | Hole Size | Casing Size | Depth | New or Used | Grade wt/R | Basket Depth(s) | Did cement circulate (Y/N) * Provide details below* |
|---------------------------|-----------|-------------|--------|-------------|----------------|-------------------------|--|
| Conductor | 24" | 20" | 40' | NEW | A-500 40LB/FT | NONE | Y |
| Surface | 17.5" | 13.375" | 1050' | NEW | J-55 54.5LB/FT | 292' | Y |
| Coal | | | | | | | |
| Intermediate 1 | 12.375" | 9.625" | 5251' | NEW | P-110 40LB/FT | 1438',2313',2979',4206' | Y |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | 8.5" | 5.5" | 11691' | NEW | P-110 20LB/FT | None | N |
| 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 | CLASS A | 38 | 15.6 | 1.18 | 44.84 | 0 | 8 |
| Surface | CLASS A | 1013 | 15.6 | 1.19 | 1205.47 | 0 | 8 |
| Coal | | | | | | | |
| Intermediate 1 | CLASS A / CLASS A | 385 / 340 | 14.2 / 15.6 | 1.28 / 1.18 | 894 | 0 | 8 |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | Class A/Class H | 295/605 | 14.2/15.2 | 1.26/1.97 | 1564 | 4,959' | 8 |
| Tubing | | | | | | | |

Drillers TD (ft) 11691' Loggers TD (ft) N/A
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5,334'

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 _____
 CONDUCTOR- NONE
 SURFACE- JOINTS: 1,13,25
 INTERMEDIATE- JOINTS: 1,15,28,40,52,58,64,76,88,100,112,124
 PRODUCTION- Joints 1-148 (5407'-11679')

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- 017 - 6444 Farm name MARY FARR SECRIST Well number 514391

Drilling Contractor Orion 17
Address 674 Flato Road City Corpus Christi State TX Zip 78405

Logging Company ProDirectional
Address 103 Suds Run Rado City Mount Clare State WV Zip 26408

Logging Company GYRODATA
Address 601 MAYER ST. City BRIDGEVILLE State PA Zip 15017

Cementing Company Nabors Cementing Services
Address 2504 Smith Creek Road City Waynesburg State PA Zip 15370

Farm Name: Mary Farr Secrist

API: 47-170-6444

Well Number: 514391

Formations

| Formation Name | Final Top MD | Final Top TVD (ft) | Final Btm MD | Final Btm TVD |
|------------------|--------------|--------------------|--------------|---------------|
| | (ftGL) (ft) | | (ftGL) (ft) | (ft) |
| FRESH WATER ZONE | 1 | | 497 | |
| SAND/SHALE | 1 | 1 | 350 | 350 |
| COAL | 350 | 350 | 353 | 353 |
| SAND/SHALE | 353 | 353 | 493 | 493 |
| PITTSBURGH COAL | 493 | 493 | 495 | 495 |
| SAND/SHALE | 495 | 495 | 1,428.00 | 1,428.00 |
| MAXTON | 1,428.00 | 1,428.00 | 1,861.00 | 1,861.00 |
| BIG LIME | 1,861.00 | 1,861.00 | 2,156.00 | 2,156.00 |
| WEIR | 2,156.00 | 2,156.00 | 2,358.00 | 2,358.00 |
| BEREA | 2,358.00 | 2,358.00 | 2,363.00 | 2,363.00 |
| GANTZ | 2,363.00 | 2,363.00 | 2,484.00 | 2,484.00 |
| 50F | 2,484.00 | 2,484.00 | 2,567.00 | 2,567.00 |
| 30F | 2,567.00 | 2,567.00 | 2,610.00 | 2,610.00 |
| GORDON | 2,610.00 | 2,610.00 | 2,721.00 | 2,721.00 |
| 4TH | 2,721.00 | 2,721.00 | 2,905.00 | 2,905.00 |
| BAYARD | 2,905.00 | 2,905.00 | 3,229.00 | 3,229.00 |
| WARREN | 3,229.00 | 3,229.00 | 3,293.00 | 3,293.00 |
| SPEECHLEY | 3,293.00 | 3,293.00 | 3,930.00 | 3,930.00 |
| BALLTOWN A | 3,930.00 | 3,930.00 | 4,227.00 | 4,227.00 |
| BRADFORD | 4,227.00 | 4,227.00 | 4,426.00 | 4,426.00 |
| RILEY | 4,426.00 | 4,426.00 | 4,867.00 | 4,867.00 |
| BENSON | 4,867.00 | 4,867.00 | 5,121.00 | 5,121.00 |
| ALEXANDER | 5,121.00 | 5,121.00 | 6,625.00 | 6,330.00 |
| SONYEA | 6,625.00 | 6,330.00 | 6,861.00 | 6,485.90 |
| MIDDLESEX | 6,861.00 | 6,485.90 | 6,945.00 | 6,538.20 |
| GENESSEE | 6,945.00 | 6,538.20 | 7,074.00 | 6,607.20 |
| GENESEO | 7,074.00 | 6,607.20 | 7,124.00 | 6,629.30 |
| TULLY | 7,124.00 | 6,629.30 | 7,185.00 | 6,651.00 |
| HAMILTON | 7,185.00 | 6,651.00 | 7,234.00 | 6,664.20 |
| MARCELLUS | 7,234.00 | 6,664.20 | | |

04/01/2016



EQT Production

Doddridge County, WV

Orion WEU49 Pad

Well No. 514391

North Reference: Grid

Original Hole

Survey: ProDirectional

Standard Survey Report

15 February, 2015



04/01/2016



Professional Directional Survey Report



| | |
|--------------------------------------|---|
| Company: EQT Production | Local Co-ordinate Reference: Well Well #514391 - Slot 514391 |
| Project: Doddridge County, WV | TVD Reference: GL 1130 + 22.5' KB @ 1152.50usft (Orion Rig) |
| Site: Orion WEU49 Pad | MD Reference: GL 1130 + 22.5' KB @ 1152.50usft (Orion Rig) |
| Well: Well #514391 | North Reference: Grid |
| Wellbore: Original Hole | Survey Calculation Method: Minimum Curvature |
| Design: Original Hole | Database: Well_Planner1 |

| | | |
|---|-------------------------------------|--|
| Project Doddridge County, WV | | |
| Map System: US State Plane 1927 (Exact solution) | System Datum: Mean Sea Level | |
| Geo Datum: NAD 1927 (NADCON CONUS) | | |
| Map Zone: West Virginia North 4701 | Using geodetic scale factor | |

| | | | |
|--|-----------------------------------|------------------------------------|--|
| Site Orion WEU49 Pad | | | |
| Site Position: | Northing: 277,569.80 usft | Latitude: 39° 15' 17.748 N | |
| From: Map | Easting: 1,635,662.00 usft | Longitude: 80° 47' 11.892 W | |
| Position Uncertainty: 0.00 usft | Slot Radius: 13-3/16 " | Grid Convergence: -0.82 ° | |

| | | | |
|--|------------------------|--|------------------------------------|
| Well Well #514391 - Slot 514391 | | | |
| Well Position | +N/-S 0.00 usft | Northing: 277,510.00 usft | Latitude: 39° 15' 17.158 N |
| | +E/-W 0.00 usft | Easting: 1,635,668.80 usft | Longitude: 80° 47' 11.794 W |
| Position Uncertainty | 0.00 usft | Wellhead Elevation: 1,152.50 usft | Ground Level: 1,130.00 usft |

| | | | |
|-------------------------------|--|--|--|
| Wellbore Original Hole | | | |
|-------------------------------|--|--|--|

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|-----------|------------|-------------|-----------------|---------------|---------------------|
| | IGRF2010 | 2/6/2015 | -8.49 | 66.72 | 52,198 |

| | | | |
|-----------------------------|----------------------|----------------------|------|
| Design Original Hole | | | |
| Audit Notes: | | | |
| Version: 1.0 | Phase: ACTUAL | Tie On Depth: | 0.00 |

| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
|-------------------|-------------------------|--------------|--------------|---------------|
| | 0.00 | 0.00 | 0.00 | 245.51 |

| Survey Program | | Date | | | |
|----------------|-----------|----------------------------------|----------------|-----------------------------------|--|
| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description | |
| 109.50 | 5,241.50 | #1 Gyrodata Gyro (Original Hole) | Gyrodata_DP_MS | Gyrodata gyro-compassing and drop | |
| 5,289.00 | 11,691.00 | ProDirectional (Original Hole) | ProMWD | MWD - Standard | |

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 5,241.50 | 1.80 | 333.42 | 5,241.00 | -13.81 | -30.28 | 33.28 | 0.00 | 0.00 | 0.00 |
| 5,289.00 | 1.99 | 337.03 | 5,288.48 | -12.38 | -30.94 | 33.29 | 0.47 | 0.40 | 7.60 |
| 5,321.00 | 2.21 | 325.44 | 5,320.46 | -11.36 | -31.50 | 33.38 | 1.49 | 0.69 | -36.22 |
| 5,352.00 | 0.88 | 104.83 | 5,351.45 | -10.93 | -31.61 | 33.30 | 9.47 | -4.29 | 449.65 |
| 5,384.00 | 4.11 | 137.14 | 5,383.42 | -11.84 | -30.59 | 32.75 | 10.62 | 10.09 | 100.97 |
| 5,416.00 | 7.11 | 146.13 | 5,415.26 | -14.32 | -28.71 | 32.06 | 9.74 | 9.38 | 28.09 |
| 5,447.00 | 8.00 | 139.43 | 5,445.99 | -17.55 | -26.24 | 31.15 | 4.03 | 2.87 | -21.61 |
| 5,479.00 | 8.62 | 120.21 | 5,477.66 | -20.45 | -22.72 | 29.15 | 8.85 | 1.94 | -60.06 |
| 5,511.00 | 10.69 | 102.85 | 5,509.21 | -22.32 | -17.75 | 25.40 | 11.09 | 6.47 | -54.25 |
| 5,542.00 | 13.70 | 93.11 | 5,539.51 | -23.16 | -11.28 | 19.86 | 11.73 | 9.71 | -31.42 |



Professional Directional Survey Report



| | | | |
|------------------|----------------------|-------------------------------------|--|
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| Wellbore: | Original Hole | Survey Calculation Method: | Minimum Curvature |
| Design: | Original Hole | Database: | Well_Planner1 |

Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Buidl Rate (°/100usft) | Turn Rate (°/100usft) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 5,574.00 | 16.79 | 86.24 | 5,570.39 | -23.06 | -2.88 | 12.18 | 11.17 | 9.66 | -21.47 |
| 5,605.00 | 19.62 | 80.02 | 5,599.83 | -21.87 | 6.72 | 2.95 | 11.06 | 9.13 | -20.06 |
| 5,637.00 | 22.40 | 73.33 | 5,629.71 | -19.18 | 17.85 | -8.29 | 11.46 | 8.69 | -20.91 |
| 5,669.00 | 24.70 | 67.82 | 5,659.04 | -14.91 | 29.89 | -21.02 | 9.94 | 7.19 | -17.22 |
| 5,700.00 | 27.40 | 62.75 | 5,686.90 | -9.20 | 42.23 | -34.62 | 11.28 | 8.71 | -16.35 |
| 5,732.00 | 30.40 | 60.15 | 5,714.91 | -1.79 | 55.80 | -50.04 | 10.16 | 9.38 | -8.13 |
| 5,764.00 | 33.50 | 57.55 | 5,742.06 | 6.98 | 70.28 | -66.85 | 10.60 | 9.69 | -8.13 |
| 5,795.00 | 36.99 | 55.92 | 5,767.37 | 16.80 | 85.23 | -84.52 | 11.66 | 11.26 | -5.26 |
| 5,827.00 | 40.08 | 54.73 | 5,792.40 | 28.14 | 101.62 | -104.14 | 9.93 | 9.66 | -3.72 |
| 5,859.00 | 43.00 | 53.72 | 5,816.35 | 40.55 | 118.83 | -124.95 | 9.36 | 9.13 | -3.16 |
| 5,890.00 | 46.18 | 51.12 | 5,838.43 | 53.83 | 136.06 | -146.14 | 11.83 | 10.26 | -8.39 |
| 5,954.00 | 50.99 | 44.24 | 5,880.78 | 86.18 | 171.43 | -191.73 | 11.01 | 7.52 | -10.75 |
| 6,017.00 | 50.91 | 44.24 | 5,920.47 | 121.23 | 205.56 | -237.32 | 0.13 | -0.13 | 0.00 |
| 6,049.00 | 50.91 | 44.24 | 5,940.65 | 139.02 | 222.89 | -260.47 | 0.00 | 0.00 | 0.00 |
| 6,144.00 | 48.39 | 42.35 | 6,002.15 | 191.69 | 272.55 | -327.49 | 3.06 | -2.65 | -1.99 |
| 6,238.00 | 47.28 | 43.84 | 6,065.25 | 242.57 | 320.14 | -391.90 | 1.67 | -1.18 | 1.59 |
| 6,333.00 | 46.18 | 47.63 | 6,130.38 | 290.85 | 369.64 | -456.96 | 3.13 | -1.16 | 3.99 |
| 6,428.00 | 46.00 | 50.15 | 6,196.27 | 335.85 | 421.20 | -522.53 | 1.92 | -0.19 | 2.65 |
| 6,460.00 | 46.00 | 50.23 | 6,218.50 | 350.58 | 438.88 | -544.73 | 0.18 | 0.00 | 0.25 |
| 6,492.00 | 46.31 | 52.13 | 6,240.67 | 365.05 | 456.86 | -567.09 | 4.39 | 0.97 | 5.94 |
| 6,523.00 | 46.71 | 57.73 | 6,262.01 | 377.96 | 475.26 | -589.18 | 13.17 | 1.29 | 18.06 |
| 6,555.00 | 47.90 | 63.32 | 6,283.72 | 389.51 | 495.72 | -612.60 | 13.36 | 3.72 | 17.47 |
| 6,586.00 | 48.61 | 68.13 | 6,304.37 | 399.01 | 516.80 | -635.71 | 11.80 | 2.29 | 15.52 |
| 6,618.00 | 49.09 | 71.43 | 6,325.43 | 407.33 | 539.40 | -659.73 | 7.91 | 1.50 | 10.31 |
| 6,650.00 | 47.81 | 75.44 | 6,346.66 | 414.17 | 562.35 | -683.45 | 10.19 | -4.00 | 12.53 |
| 6,681.00 | 47.68 | 79.32 | 6,367.51 | 419.18 | 584.73 | -705.89 | 9.27 | -0.42 | 12.52 |
| 6,713.00 | 48.21 | 83.02 | 6,388.95 | 422.82 | 608.20 | -728.76 | 8.74 | 1.66 | 11.56 |
| 6,745.00 | 48.52 | 86.94 | 6,410.21 | 424.91 | 632.02 | -751.30 | 9.21 | 0.97 | 12.25 |
| 6,776.00 | 49.32 | 91.35 | 6,430.59 | 425.25 | 655.37 | -772.70 | 11.03 | 2.58 | 14.23 |
| 6,808.00 | 49.40 | 94.35 | 6,451.43 | 424.05 | 679.62 | -794.26 | 7.12 | 0.25 | 9.38 |
| 6,840.00 | 49.18 | 99.15 | 6,472.31 | 421.20 | 703.69 | -814.99 | 11.39 | -0.69 | 15.00 |
| 6,871.00 | 50.11 | 103.34 | 6,492.39 | 416.59 | 726.85 | -834.15 | 10.73 | 3.00 | 13.52 |
| 6,903.00 | 51.39 | 106.73 | 6,512.64 | 410.16 | 750.78 | -853.26 | 9.13 | 4.00 | 10.59 |
| 6,935.00 | 53.12 | 111.31 | 6,532.23 | 401.90 | 774.68 | -871.59 | 12.54 | 5.41 | 14.31 |
| 6,966.00 | 55.10 | 115.15 | 6,550.41 | 391.99 | 797.75 | -888.47 | 11.89 | 6.39 | 12.39 |
| 6,998.00 | 56.61 | 118.14 | 6,568.37 | 380.11 | 821.41 | -905.08 | 9.06 | 4.72 | 9.34 |
| 7,029.00 | 58.99 | 121.05 | 6,584.89 | 367.15 | 844.21 | -920.46 | 11.05 | 7.68 | 9.39 |
| 7,061.00 | 60.89 | 124.14 | 6,600.92 | 352.23 | 867.54 | -935.50 | 10.25 | 5.94 | 9.66 |
| 7,093.00 | 63.19 | 127.13 | 6,615.93 | 335.76 | 890.50 | -949.56 | 10.94 | 7.19 | 9.34 |
| 7,124.00 | 65.80 | 131.14 | 6,629.28 | 318.10 | 912.19 | -961.98 | 14.39 | 8.42 | 12.94 |
| 7,156.00 | 69.29 | 133.92 | 6,641.50 | 298.11 | 933.97 | -973.51 | 13.54 | 10.91 | 8.69 |
| 7,188.00 | 72.60 | 136.83 | 6,651.95 | 276.58 | 955.20 | -983.91 | 13.45 | 10.34 | 9.09 |
| 7,220.00 | 75.21 | 139.74 | 6,660.82 | 253.63 | 975.65 | -993.01 | 11.95 | 8.16 | 9.09 |



Professional Directional Survey Report



| | | | |
|------------------|----------------------|-------------------------------------|--|
| Company: | EQT Production | Local Co-ordinate Reference: | Well Well #514391 - Slot 514391 |
| Project: | Doddridge County, WV | TVD Reference: | GL 1130 + 22.5' KB @ 1152.50usft (Orion Rig) |
| Site: | Orion WEU49 Pad | MD Reference: | GL 1130 + 22 5' KB @ 1152.50usft (Orion Rig) |
| Well: | Well #514391 | North Reference: | Grid |
| Wellbore: | Original Hole | Survey Calculation Method: | Minimum Curvature |
| Design: | Original Hole | Database: | Well_Planner1 |

Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Bulld Rate (°/100usft) | Turn Rate (°/100usft) |
|------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 7,251.00 | 78.48 | 142.34 | 6,667.88 | 230.16 | 994.63 | -1,000.55 | 13.34 | 10.55 | 8.39 |
| 7,283.00 | 82.90 | 144.85 | 6,673.06 | 204.75 | 1,013.36 | -1,007.06 | 15.83 | 13.81 | 7.84 |
| 7,314.00 | 86.61 | 146.74 | 6,675.89 | 179.22 | 1,030.71 | -1,012.26 | 13.42 | 11.97 | 6.10 |
| 7,346.00 | 87.80 | 148.42 | 6,677.45 | 152.25 | 1,047.84 | -1,016.67 | 6.43 | 3.72 | 5.25 |
| 7,378.00 | 87.72 | 148.64 | 6,678.70 | 124.97 | 1,064.53 | -1,020.56 | 0.73 | -0.25 | 0.69 |
| 7,410.00 | 88.60 | 148.73 | 6,679.73 | 97.65 | 1,081.16 | -1,024.36 | 2.76 | 2.75 | 0.28 |
| 7,417.64 | 89.32 | 149.37 | 6,679.87 | 91.10 | 1,085.09 | -1,025.22 | 12.61 | 9.42 | 8.39 |
| 514391 Plat LP2 | | | | | | | | | |
| 7,441.00 | 91.52 | 151.33 | 6,679.69 | 70.80 | 1,096.64 | -1,027.32 | 12.61 | 9.42 | 8.39 |
| 7,473.00 | 92.31 | 152.65 | 6,678.63 | 42.56 | 1,111.66 | -1,029.28 | 4.81 | 2.47 | 4.13 |
| 7,568.00 | 93.11 | 155.42 | 6,674.13 | -42.74 | 1,153.20 | -1,031.72 | 3.03 | 0.84 | 2.92 |
| 7,587.10 | 93.05 | 155.12 | 6,673.11 | -60.06 | 1,161.18 | -1,031.80 | 1.60 | -0.33 | -1.57 |
| 514391 Adj LP2 | | | | | | | | | |
| 7,663.00 | 92.80 | 153.93 | 6,669.24 | -128.50 | 1,193.78 | -1,033.10 | 1.60 | -0.33 | -1.57 |
| 7,758.00 | 92.49 | 152.65 | 6,664.85 | -213.27 | 1,236.44 | -1,036.77 | 1.38 | -0.33 | -1.35 |
| 7,853.00 | 91.91 | 153.13 | 6,661.20 | -297.77 | 1,279.70 | -1,041.11 | 0.79 | -0.61 | 0.51 |
| 7,948.00 | 91.52 | 152.25 | 6,658.36 | -382.14 | 1,323.26 | -1,045.78 | 1.01 | -0.41 | -0.93 |
| 8,042.00 | 89.70 | 151.94 | 6,657.36 | -465.20 | 1,367.25 | -1,051.37 | 1.96 | -1.94 | -0.33 |
| 8,137.00 | 90.10 | 157.45 | 6,657.53 | -551.05 | 1,407.84 | -1,052.72 | 5.82 | 0.42 | 5.80 |
| 8,232.00 | 90.10 | 157.94 | 6,657.36 | -638.94 | 1,443.90 | -1,049.09 | 0.52 | 0.00 | 0.52 |
| 8,327.00 | 89.88 | 157.94 | 6,657.38 | -726.99 | 1,479.58 | -1,045.06 | 0.23 | -0.23 | 0.00 |
| 8,422.00 | 91.52 | 156.83 | 6,656.22 | -814.67 | 1,516.10 | -1,041.95 | 2.08 | 1.73 | -1.17 |
| 8,517.00 | 92.62 | 156.83 | 6,652.79 | -901.95 | 1,553.46 | -1,039.76 | 1.16 | 1.16 | 0.00 |
| 8,612.00 | 92.71 | 154.94 | 6,648.37 | -988.56 | 1,592.23 | -1,039.14 | 1.99 | 0.09 | -1.99 |
| 8,707.00 | 90.99 | 153.04 | 6,645.30 | -1,073.89 | 1,633.85 | -1,041.65 | 2.70 | -1.81 | -2.00 |
| 8,801.00 | 90.01 | 153.75 | 6,644.48 | -1,157.93 | 1,675.96 | -1,045.12 | 1.29 | -1.04 | 0.76 |
| 8,896.00 | 90.99 | 151.94 | 6,643.65 | -1,242.45 | 1,719.31 | -1,049.53 | 2.17 | 1.03 | -1.91 |
| 8,991.00 | 90.50 | 156.83 | 6,642.42 | -1,328.08 | 1,760.37 | -1,051.39 | 5.17 | -0.52 | 5.15 |
| 9,086.00 | 88.82 | 156.35 | 6,642.98 | -1,415.26 | 1,798.11 | -1,049.60 | 1.84 | -1.77 | -0.51 |
| 9,181.00 | 89.22 | 156.44 | 6,644.60 | -1,502.29 | 1,836.14 | -1,048.13 | 0.43 | 0.42 | 0.09 |
| 9,276.00 | 90.10 | 157.94 | 6,645.17 | -1,589.86 | 1,872.97 | -1,045.34 | 1.83 | 0.93 | 1.58 |
| 9,371.00 | 90.19 | 157.23 | 6,644.93 | -1,677.68 | 1,909.19 | -1,041.90 | 0.75 | 0.09 | -0.75 |
| 9,466.00 | 90.41 | 159.35 | 6,644.43 | -1,765.94 | 1,944.33 | -1,037.29 | 2.24 | 0.23 | 2.23 |
| 9,561.00 | 92.40 | 153.93 | 6,642.10 | -1,853.09 | 1,981.97 | -1,035.41 | 6.08 | 2.09 | -5.71 |
| 9,656.00 | 93.11 | 153.93 | 6,637.53 | -1,938.32 | 2,023.67 | -1,038.02 | 0.75 | 0.75 | 0.00 |
| 9,751.00 | 91.91 | 152.82 | 6,633.37 | -2,023.16 | 2,066.21 | -1,041.56 | 1.72 | -1.26 | -1.17 |
| 9,846.00 | 92.09 | 152.12 | 6,630.06 | -2,107.36 | 2,110.09 | -1,046.59 | 0.76 | 0.19 | -0.74 |
| 9,941.00 | 91.30 | 152.51 | 6,627.25 | -2,191.44 | 2,154.21 | -1,051.88 | 0.93 | -0.83 | 0.41 |
| 10,036.00 | 91.12 | 152.34 | 6,625.24 | -2,275.63 | 2,198.17 | -1,056.99 | 0.26 | -0.19 | -0.18 |
| 10,131.00 | 89.48 | 151.63 | 6,624.74 | -2,359.50 | 2,242.79 | -1,062.82 | 1.88 | -1.73 | -0.75 |
| 10,225.00 | 88.82 | 150.93 | 6,626.14 | -2,441.92 | 2,287.96 | -1,069.75 | 1.02 | -0.70 | -0.74 |
| 10,320.00 | 89.00 | 155.73 | 6,627.95 | -2,526.77 | 2,330.58 | -1,073.36 | 5.06 | 0.19 | 5.05 |
| 10,415.00 | 88.91 | 154.15 | 6,629.68 | -2,612.81 | 2,370.81 | -1,074.31 | 1.67 | -0.09 | -1.66 |
| 10,510.00 | 90.41 | 154.41 | 6,630.24 | -2,698.40 | 2,412.03 | -1,076.34 | 1.60 | 1.58 | 0.27 |



Professional Directional Survey Report



| | | | |
|------------------|----------------------|-------------------------------------|--|
| Company: | EQT Production | Local Co-ordinate Reference: | Well Well #514391 - Slot 514391 |
| Project: | Doddridge County, WV | TVD Reference: | GL 1130 + 22.5' KB @ 1152.50usft (Orion Rig) |
| Site: | Orion WEU49 Pad | MD Reference: | GL 1130 + 22.5' KB @ 1152.50usft (Orion Rig) |
| Well: | Well #514391 | North Reference: | Grid |
| Wellbore: | Original Hole | Survey Calculation Method: | Minimum Curvature |
| Design: | Original Hole | Database: | Well_Planner1 |

Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Bulld Rate (°/100usft) | Turn Rate (°/100usft) |
|--|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 10,605.00 | 90.99 | 156.53 | 6,629.08 | -2,784.81 | 2,451.47 | -1,076.40 | 2.31 | 0.61 | 2.23 |
| 10,700.00 | 91.21 | 156.04 | 6,627.26 | -2,871.77 | 2,489.67 | -1,075.12 | 0.57 | 0.23 | -0.52 |
| 10,795.00 | 88.38 | 157.71 | 6,627.60 | -2,959.13 | 2,526.98 | -1,072.85 | 3.46 | -2.98 | 1.76 |
| 10,890.00 | 88.82 | 157.45 | 6,629.92 | -3,046.92 | 2,563.20 | -1,069.42 | 0.54 | 0.46 | -0.27 |
| 10,985.00 | 88.11 | 157.45 | 6,632.46 | -3,134.62 | 2,599.62 | -1,066.20 | 0.75 | -0.75 | 0.00 |
| 11,080.00 | 89.48 | 154.15 | 6,634.46 | -3,221.24 | 2,638.54 | -1,065.72 | 3.76 | 1.44 | -3.47 |
| 11,175.00 | 89.79 | 155.03 | 6,635.07 | -3,307.05 | 2,679.31 | -1,067.24 | 0.98 | 0.33 | 0.93 |
| 11,270.00 | 90.59 | 155.42 | 6,634.75 | -3,393.30 | 2,719.12 | -1,067.71 | 0.94 | 0.84 | 0.41 |
| 11,365.00 | 91.78 | 155.91 | 6,632.79 | -3,479.84 | 2,758.25 | -1,067.45 | 1.35 | 1.25 | 0.52 |
| 11,460.00 | 92.31 | 154.72 | 6,629.40 | -3,566.11 | 2,797.90 | -1,067.77 | 1.37 | 0.56 | -1.25 |
| 11,555.00 | 93.02 | 155.51 | 6,624.98 | -3,652.19 | 2,837.83 | -1,068.42 | 1.12 | 0.75 | 0.83 |
| 11,631.00 | 93.20 | 155.25 | 6,620.86 | -3,721.18 | 2,869.45 | -1,068.59 | 0.42 | 0.24 | -0.34 |
| Last Survey: 11631.00'MD / 6620.86'TVD | | | | | | | | | |
| 11,687.31 | 93.20 | 155.25 | 6,617.71 | -3,772.24 | 2,892.99 | -1,068.84 | 0.00 | 0.00 | 0.00 |
| 514391 Plat TD2 | | | | | | | | | |
| 11,691.00 | 93.20 | 155.25 | 6,617.51 | -3,775.58 | 2,894.53 | -1,068.86 | 0.00 | 0.00 | 0.00 |
| PTB: 11691'MD | | | | | | | | | |

Survey Annotations

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
|-----------------------|-----------------------|-------------------|--------------|--|
| | | +N/-S (usft) | +E/-W (usft) | |
| 11,631.00 | 6,620.86 | -3,721.18 | 2,869.45 | Last Survey: 11631.00'MD / 6620.86'TVD |
| 11,691.00 | 6,617.51 | -3,775.58 | 2,894.53 | PTB: 11691'MD |

| | | | | | | | |
|-----|---------|----------|---------|-------|--------|---------|-------------|
| .43 | 5445.99 | -17.55 | -26.24 | 0.00 | 0.00 | 4.82 | |
| .85 | 5830.88 | 70.86 | 119.13 | 11.00 | -98.95 | -13.87 | |
| .85 | 6249.19 | 370.97 | 450.72 | 0.00 | 0.00 | -145.73 | |
| .00 | 6680.00 | 94.70 | 1091.34 | 11.00 | 100.43 | 375.39 | 514391 Plat |
| .00 | 6530.88 | -3775.32 | 2895.96 | 0.00 | 0.00 | 4645.49 | 514391 Plat |

FORMATION TOP DETAILS

| TVDPath | MDPath | Formation |
|---------|---------|------------|
| 6335.00 | 6616.53 | -Sonyea |
| 6489.00 | 6848.02 | -Middlesex |
| 6543.00 | 6940.96 | -Genesee |
| 6624.00 | 7115.69 | -Geneseo |
| 6657.00 | 7221.91 | -Tully |

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

514391 - 47-017-6444-0000- 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 (bbbls) | Amount of Nitrogen/other (units) |
|---------------------|-------------------------|----------------------------|-------------------------------------|-------------------------------------|-------------------|---------------------------------|--------------------------------|---|
| Initiation Sleeve | 6/24/2015 | 13.1 | 6,208.00 | 7,521.00 | 4,017.00 | 0 | 680 | 0 |
| 1:02 | 6/24/2015 | 38.5 | 8,981.00 | 9,293.00 | 5,962.00 | 0 | 948 | 0 |
| 1 | 6/24/2015 | 97.1 | 7,799.00 | 8,955.00 | 3,132.00 | 301,215 | 8,484 | |
| 2 | 6/25/2015 | 95.8 | 8,274.00 | 8,956.00 | 3,891.00 | 299,567 | 9,395 | 0 |
| 3 | 6/25/2015 | 100.5 | 7,670.00 | 7,970.00 | 5,145.00 | 302,422 | 7,405 | 0 |
| 4 | 6/25/2015 | 97.6 | 7,763.00 | 9,345.00 | 5,025.00 | 301,571 | 8,084 | 0 |
| 5 | 6/25/2015 | 100.4 | 7,818.00 | 8,338.00 | 4,930.00 | 302,460 | 7,532 | 0 |
| 6 | 6/25/2015 | 100.6 | 7,646.00 | 8,439.00 | 3,778.00 | 300,912 | 7,370 | 0 |
| 7 | 6/26/2015 | 97.6 | 7,925.00 | 8,609.00 | 4,679.00 | 302,452 | 8,747 | 0 |
| 8 | 6/26/2015 | 100.3 | 7,513.00 | 8,283.00 | 7,136.00 | 301,740 | 7,371 | 0 |
| 9 | 6/26/2015 | 100.4 | 7,428.00 | 7,755.00 | 4,577.00 | 300,532 | 7,370 | 0 |
| 10 | 6/26/2015 | 100.3 | 7,432.00 | 7,793.00 | 4,822.00 | 300,460 | 7,266 | 0 |
| 11 | 6/26/2015 | 99.9 | 7,686.00 | 8,669.00 | 5,140.00 | 294,144 | 7,250 | 0 |
| 12 | 6/27/2015 | 101.6 | 7,566.00 | 8,259.00 | 4,813.00 | 301,568 | 7,336 | 0 |
| 13 | 6/27/2015 | 100.9 | 7,569.00 | 8,528.00 | 5,155.00 | 300,806 | 7,246 | 0 |
| 14 | 6/27/2015 | 100.5 | 7,375.00 | 7,938.00 | 4,770.00 | 298,674 | 7,180 | 0 |
| 15 | 6/27/2015 | 100.3 | 7,398.00 | 8,150.00 | 4,491.00 | 299,093 | 7,232 | 0 |
| 16 | 6/27/2015 | 100.7 | 7,516.00 | 8,558.00 | 4,716.00 | 298,927 | 7,140 | 0 |
| 17 | 6/27/2015 | 101.3 | 7,469.00 | 8,162.00 | 4,353.00 | 298,606 | 7,190 | 0 |
| 18 | 6/28/2015 | 100.60 | 7,440.00 | 8,586.00 | 4,820 | 299,158 | 7,216 | 0 |
| 19 | 6/28/2015 | 97.30 | 7,878.00 | 9,011.00 | 4,086 | 299,304 | 8,203 | 0 |
| 20 | 6/28/2015 | 100.20 | 7,646.00 | 8,366.00 | 4,685 | 301,592 | 7,142 | 0 |
| 21 | 6/28/2015 | 100.40 | 7,706.00 | 9,337.00 | 5,057 | 269,116 | 6,909 | 0 |
| 22 | 6/28/2015 | 102.70 | 7,571.00 | 7,996.00 | 5,355 | 299,191 | 7,082 | 0 |
| 23 | 6/29/2015 | 100.10 | 7,926.00 | 8,690.00 | 4,710 | 301,181 | 8,716 | 0 |
| 24 | 6/29/2015 | 102.4 | 7,651.00 | 8,134.00 | 5,739.00 | 295,792 | 7,054 | 0 |

514391 - 47-017-6444-0000- Perforations

| Stage Number | Perforation Date | Top Perf Depth (ftKB) | Bottom Perf Depth (ftKB) | Number of Shots | Formation |
|--------------------------|-------------------------|------------------------------|---------------------------------|------------------------|------------------|
| Initiation Sleeve | 4/26/2015 | 11,689.00 | 11,691.00 | 10 | MARCELLUS |
| 1 | 6/24/2015 | 11,545.00 | 11,605.00 | 28 | MARCELLUS |
| 2 | 6/24/2015 | 11,365.00 | 11,487.00 | 42 | MARCELLUS |
| 3 | 6/25/2015 | 11,185.00 | 11,307.00 | 42 | MARCELLUS |
| 4 | 6/25/2015 | 11,005.00 | 11,125.00 | 42 | MARCELLUS |
| 5 | 6/25/2015 | 10,825.00 | 10,947.00 | 42 | MARCELLUS |
| 6 | 6/25/2015 | 10,645.00 | 10,767.00 | 42 | MARCELLUS |
| 7 | 6/26/2015 | 10,465.00 | 10,587.00 | 42 | MARCELLUS |
| 8 | 6/26/2015 | 10,285.00 | 10,407.00 | 42 | MARCELLUS |
| 9 | 6/26/2015 | 10,105.00 | 10,227.00 | 42 | MARCELLUS |
| 10 | 6/26/2015 | 9,925.00 | 10,047.00 | 42 | MARCELLUS |
| 11 | 6/26/2015 | 9,747.00 | 9,867.00 | 42 | MARCELLUS |
| 12 | 6/27/2015 | 9,565.00 | 9,686.00 | 42 | MARCELLUS |
| 13 | 6/27/2015 | 9,385.00 | 9,505.00 | 42 | MARCELLUS |
| 14 | 6/27/2015 | 9,206.00 | 9,327.00 | 42 | MARCELLUS |
| 15 | 6/27/2015 | 9,024.00 | 9,147.00 | 42 | MARCELLUS |
| 16 | 6/27/2015 | 8,845.00 | 8,965.00 | 42 | MARCELLUS |
| 17 | 6/27/2015 | 8,665.00 | 8,787.00 | 42 | MARCELLUS |
| 18 | 6/28/2015 | 8,485.00 | 8,607.00 | 42 | MARCELLUS |
| 19 | 6/28/2015 | 8,305.00 | 8,427.00 | 42 | MARCELLUS |
| 20 | 6/28/2015 | 8,125.00 | 8,247.00 | 42 | MARCELLUS |
| 21 | 6/28/2015 | 7,945.00 | 8,064.00 | 42 | MARCELLUS |
| 22 | 6/28/2015 | 7,765.00 | 7,887.00 | 42 | MARCELLUS |
| 23 | 6/28/2015 | 7,584.00 | 7,705.00 | 42 | MARCELLUS |
| 24 | 6/29/2015 | 7,405.00 | 7,527.00 | 42 | MARCELLUS |
| | | | | | |

Hydraulic Fracturing Fluid Product Component Information Disclosure

| | |
|-------------------------------|--------------------|
| Job Start Date | 6/24/2015 |
| Job End Date | 6/29/2015 |
| State | West Virginia |
| County | Doddridge |
| API Number | 47-017-06444-00-00 |
| Operator Name | EQT Production |
| Well Name and Number | 514391 |
| Longitude | -80.78660900 |
| Latitude | 39.25476600 |
| Datum | NAD83 |
| Federal/Tribal Well | NO |
| True Vertical Depth | 6,664 |
| Total Base Water Volume (gal) | 7,709,016 |
| Total Base Non Water Volume | 0 |



Hydraulic Fracturing Fluid Composition:

| Trade Name | Supplier | Purpose | Ingredients | Chemical Abstract Service Number (CAS #) | Maximum Ingredient Concentration in Additive (% by mass)** | Maximum Ingredient Concentration in HF Fluid (% by mass)** | Comments |
|-------------------------|-------------------|--------------------------|-------------------------------|--|--|--|----------|
| Water | FTS International | Carrier/Base Fluid | Water | 7732-18-5 | 100.00000 | 89.64144 | None |
| Sand (Proppant) | FTS International | Proppant | Crystalline Silica | 14808-60-7 | 100.00000 | 9.99153 | None |
| MC MX 437-5 | Multi-Chem | Calcium nitrate solution | Calcium nitrate | 10124-37-5 | 60.00000 | 0.05741 | None |
| FRW-900 | FTS International | Friction reducer | Hydrotreated light distillate | 64742-47-8 | 30.00000 | 0.02248 | None |
| | | | Alkyl Alcohol | Proprietary | 10.00000 | 0.00749 | None |
| | | | Oxyalkylated alcohol A | Proprietary | 5.00000 | 0.00375 | None |
| Hydrochloric Acid (15%) | FTS International | Acidizing | Hydrochloric Acid | 7647-01-0 | 15.00000 | 0.02520 | None |
| CS-500-SI | FTS International | Scale inhibitor | Ethylene glycol | 107-21-1 | 10.00000 | 0.00250 | None |
| HVG-1 | FTS International | Gelling agent | Petroleum distillate | 64742-47-8 | 55.00000 | 0.00098 | None |
| | | | Guar gum | 9000-30-0 | 50.00000 | 0.00089 | None |
| | | | Surfactant | 68439-51-0 | 2.00000 | 0.00004 | None |

| | | | | | | | |
|---------|-------------------|--------------------------|------------------------------|-------------|----------|---------|------|
| | | | Clay | 14808-60-7 | 2.00000 | 0.00004 | None |
| FE-100L | FTS International | Iron control | | | | | |
| | | | Citric acid | 77-92-9 | 55.00000 | 0.00059 | None |
| CI-150 | FTS International | Acid Corrosion Inhibitor | | | | | |
| | | | Ethylene glycol | 107-21-1 | 30.00000 | 0.00009 | None |
| | | | Organic amine resin salt | Proprietary | 30.00000 | 0.00009 | None |
| | | | Isopropanol | 67-63-0 | 30.00000 | 0.00009 | None |
| | | | Quaternary ammonium compound | Proprietary | 10.00000 | 0.00003 | None |
| | | | Aromatic aldehyde | Proprietary | 10.00000 | 0.00003 | None |
| | | | Dimethylformamide | 68-12-2 | 10.00000 | 0.00003 | None |
| NE-100 | FTS International | Non-emulsifier | | | | | |
| | | | 2-Butoxyethanol | 111-76-2 | 10.00000 | 0.00003 | None |
| | | | 2-Propanol | 67-63-0 | 10.00000 | 0.00003 | None |
| | | | Dodecylbenzenesulfonic acid | 27176-87-0 | 5.00000 | 0.00001 | None |
| APB-1 | FTS International | Breaker | | | | | |
| | | | Ammonium persulfate | 7727-54-0 | 95.00000 | 0.00002 | None |

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)

