

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

API: **47-049-02225** County: **MARION** District: **MANNINGTON**  
 Quad: **GLOVER GAP** Pad Name: **FREELAND** Field/Pool Name: **MARCELLUS SHALE**  
 Farm name: FREELAND **WELL NAME: FREELAND 2H**  
 Operator (as registered with the OOG): **TRANS ENERGY, INC.**  
 Address: **P. O. BOX 393** City: **ST. MARYS** State: **WV** Zip: **26170**

As Drilled Location NAD 83/UTM \*\*\* SEE ATTACHED AS-BUILT WELL LOCATION MAP \*\*\*

Top hole	Northing	<b>4385597</b>	Easting	<b>551587</b>
Landing Point of curve	Northing	<b>4385552</b>	Easting	<b>551397</b>
Bottom hole	Northing	<b>4386898</b>	Easting	<b>550463</b>

Elevation (ft): **1,353'** GL Type of Well: **NEW** Type of Report: **FINAL**

Permit Type: **HORIZONTAL 6A** Depth Type: **SHALLOW**

Type of Operation: **DRILL**

Well Type: **GAS**

Type of Completion: **SINGLE** Fluids Produced: **BRINE, GAS and NGL**

Drilled With: **ROTARY**

Drilling Media: **MUD** Intermediate hole: **MUD**

Production hole: **MUD**

Mud Type(s) and Additive(s) **MUD TYPE - SYNTHETIC BASE DRILLING MUD**

<b>ADDITIVES:</b>	Calcium Carbonate	Hydrated Lime	Synvert Synthetic 1-L	Citric Acid	Drispac Low Vis
	Calcium Chloride	Cedar Fiber	Bentonite	Sodium Bicarbonate	L-20C
	Synvert LEM	Rubber Crumb	Soda Ash, dense	Glycerine	Bioclear
	Synvert Synthetic WA-L	Cottonseed Hulls	Lignite	Desco	
	Barite	Synvert Synthetic 11-L	Aluminum Sterate	Caustic Soda Beads	

Date permit issued: **8/10/2012** Date drilling commenced: **5/3/2013** Date drilling ceased: **6/14/2013**

Date completion activities began: **7/8/2013** Date completion activities ceased: **7/16/2013**

Verbal plugging: **N/A** 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.

Fresh water depth (s) ft: **60' - 900'** Open mine(s) (Y/N) depths: **N**

Salt water depth(s) ft: **1,525'** Void(s) encountered (Y/N) depths: **N**

Coal Depth(s) ft: **1,118'** Cavern(s) encountered (Y/N) depths: **N**

Is coal being mined in area (Y/N) **N**

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Reviewed by: \_\_\_\_\_

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CASING STINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) Provide details below.
Conductor	<u>26"</u>	<u>20"</u>	<u>80'</u>	<u>NEW</u>	<u>J-55 / 94</u>	-	-
Surface	<u>17 1/2"</u>	<u>13 3/8"</u>	<u>1,194'</u>	<u>NEW</u>	<u>J-55 / 54.5</u>	-	-
Coal	-	-	-	-	-	-	-
Intermediate 1	<u>12 1/2"</u>	<u>9 5/8"</u>	<u>2,997'</u>	<u>NEW</u>	<u>J-55 / 36</u>	-	-
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	<u>8 3/4"</u>	<u>5 1/2"</u>		<u>NEW</u>	<u>P-110 / 20</u>	-	-
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	<u>Type 1</u>	-	-	<u>13</u>	-	<u>Surface</u>	-
Surface	<u>Type 1</u>	<u>900</u>	<u>15.2</u>	<u>1.25</u>	<u>1125</u>	<u>Surface</u>	-
Coal	-	-	-	-	-	-	-
Intermediate 1	<u>Type 1</u>	<u>1100</u>	<u>15.2</u>	<u>1.26</u>	<u>1386</u>	<u>Surface</u>	-
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	<u>POZ H / CLASS H</u>		<u>13.1 / 15.6</u>	<u>1.18</u>		<u>Surface</u>	-
Tubing	-	-	-	-	-	-	-

Drillers TD (ft): 12,756 Loggers TD (ft): 12,756'

Deepest formation penetrated: MARCELLUS SHALE Plug back to (ft): N/A

Plug back procedure: N/A

Kick off depth (ft) 7,301'

Check all wireline logs run:	<input checked="" type="checkbox"/> caliper	<input checked="" type="checkbox"/> density	<input checked="" type="checkbox"/> deviated/directional	<input checked="" type="checkbox"/> induction
	<input checked="" type="checkbox"/> neutron	<input checked="" type="checkbox"/> resistivity	<input checked="" type="checkbox"/> gamma ray	<input type="checkbox"/> sonic

Well cored? NO Were cuttings collected? NO

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING

FRESH WATER STRING - 1 CENTRALIZER EVERY 160'

INTERMEDIATE STRING - 1 CENTRALIZER EVERY 100' FROM 3,300' TO 900'

PRODUCTION STRING - 1 CENTRALIZER EVERY 80' FROM TD TO ABOVE ROP 7000', EVERY 4TH JOINT FROM ROP TO SURFACE.

WAS WELL COMPLETED AS SHOT HOLE? YES DETAILS: \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE? NO DETAILS: \_\_\_\_\_

WERE TRACERS USED? NO TYPE OF TRACER(S) USED: N/A

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**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)	Other Units
1	7/8/2013	62.0	7,762	8,814	5,337	308,290	8,008	
2	7/8/2013	61.2	8,249	8,855	5,680	297,110	7,939	
3	7/9/2013	60.2	7,945	8,844	5,719	306,670	8,369	
4	7/9/2013	60.9	8,154	8,692	5,383	312,200	8,286	
5	7/10/2013	56.8	8,663	9,165	5,522	301,110	7,914	
6	7/10/2013	56.9	7,867	8,515	5,117	314,500	8,453	
7	7/11/2013	61.0	7,459	8,353	4,762	380,620	8,389	
8	7/11/2013	64.4	7,602	8,466	4,922	387,910	8,246	
9	7/12/2013	63.5	6,915	7,766	4,975	382,720	8,315	
10	7/13/2013	66.3	7,709	8,420	4,955	323,130	8,311	
11	7/13/2013	61.3	7,652	8,304	5,025	321,570	8,283	
12	7/13/2013	67.4	7,574	8,038	5,185	311,650	8,266	
13	7/14/2013	65.1	7,654	8,268	5,205	307,650	8,181	
14	7/14/2013	63.5	7,431	8,362	4,990	309,800	8,259	
15	7/15/2013	64.0	7,676	8,503	5,189	317,520	8,584	
16	7/15/2013	64.2	7,611	8,098	5,263	308,000	8,309	
17	7/16/2013	56.6	7,344	7,848	5,224	299,570	5,832	

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PRODUCING FORMATION(S) DEPTHS  
**MARCELLUS SHALE** 7,850' TVD 8,574' MD

GAS TEST: N/A OIL TEST: N/A

SHUT-IN PRESSURE: Surface: \_\_\_\_\_ psi Bottom hole: \_\_\_\_\_ psi DURATION OF TEST: \_\_\_\_\_ hrs

OPEN FLOW

GAS: _____ mcfpd	OIL: _____ bpd	NGL: _____ bpd	WATER: _____ bpd	GAS MEASURED BY: <u>ESTIMATED</u>
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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)
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Coal	<u>423'</u>	<u>910'</u>			
Dunkard	<u>1506'</u>	<u>1530'</u>			
Gas Sand	<u>1550'</u>	<u>1559'</u>			
1st Salt	<u>1795'</u>	<u>1860'</u>			
2nd Salt	<u>1890'</u>	<u>2010'</u>			
3rd Salt	<u>2016'</u>	<u>2112'</u>			
Maxton	<u>2064'</u>	<u>2095'</u>			
Big Lime	<u>2181'</u>	<u>2260'</u>			
Big Injun	<u>2265'</u>	<u>2134'</u>			
Berea	<u>2455'</u>	<u>2460'</u>			
30 Foot	<u>2730'</u>	<u>2765'</u>			
Gordon	<u>2918'</u>	<u>2930'</u>			
4th	<u>3020'</u>	<u>3025'</u>			
5th	<u>3220'</u>	<u>3295'</u>			
Bayard	<u>4580'</u>	<u>4612'</u>			
Riley	<u>4976'</u>	<u>4980'</u>			
Benson	<u>4920'</u>	<u>4960'</u>			
Alexander	<u>5186'</u>	<u>5246'</u>			
Elk	<u>6360'</u>	<u>6450'</u>			
Hamilton	<u>6450'</u>	<u>6489'</u>			
Upper Devonian	<u>7004'</u>	<u>7021'</u>			
Middlesex	<u>7443'</u>	<u>7479'</u>			
Burkett	<u>7628'</u>	<u>7648'</u>			
Tully	<u>7655'</u>	<u>7682'</u>			
Marcellus	<u>7793'</u>	<u>7845'</u>			

Please insert additional pages as applicable.

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Drilling Contractor: **NOMAC DRILLING**  
Address: 3400 SOUTH RADIO ROAD City: EL RENO State: OK Zip: 73036

Logging Contractor: **BAKER HUGHES**  
Address: 17015 ALDINE WESTFIELD ROAD City: HOUSTON State: TX Zip: 77073-5101

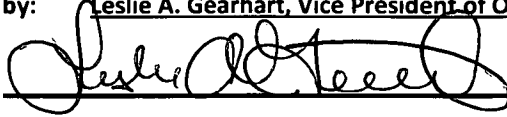
Cementing Company: **BAKER HUGHES**  
Address: 17015 ALDINE WESTFIELD ROAD City: HOUSTON State: TX Zip: 77073-5101

Stimulating Company: **GO FRAC**  
Address: 7000 CALMONT AVENUE, SUITE 310 City: FORT WORTH State: TX Zip: 76116

Completed by: Leslie A. Gearhart, Vice President of Operations

Telephone: 304/684-7053

Signature: \_\_\_\_\_



DATE: 10/22/14

\_\_\_\_\_

**\*\*SEE ATTACHMENT: HYDRAULIC FRACTURING FLUID PRODUCT COMPONENT INFORMATION DISCLOSURE\*\***

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Company: Trans Energy Inc.  
 Site: Freeland, et al (Grid)  
 Well: 2H  
 Project: Marion County, West Virginia (NAD 27)  
 Rig Name: Nomac 290

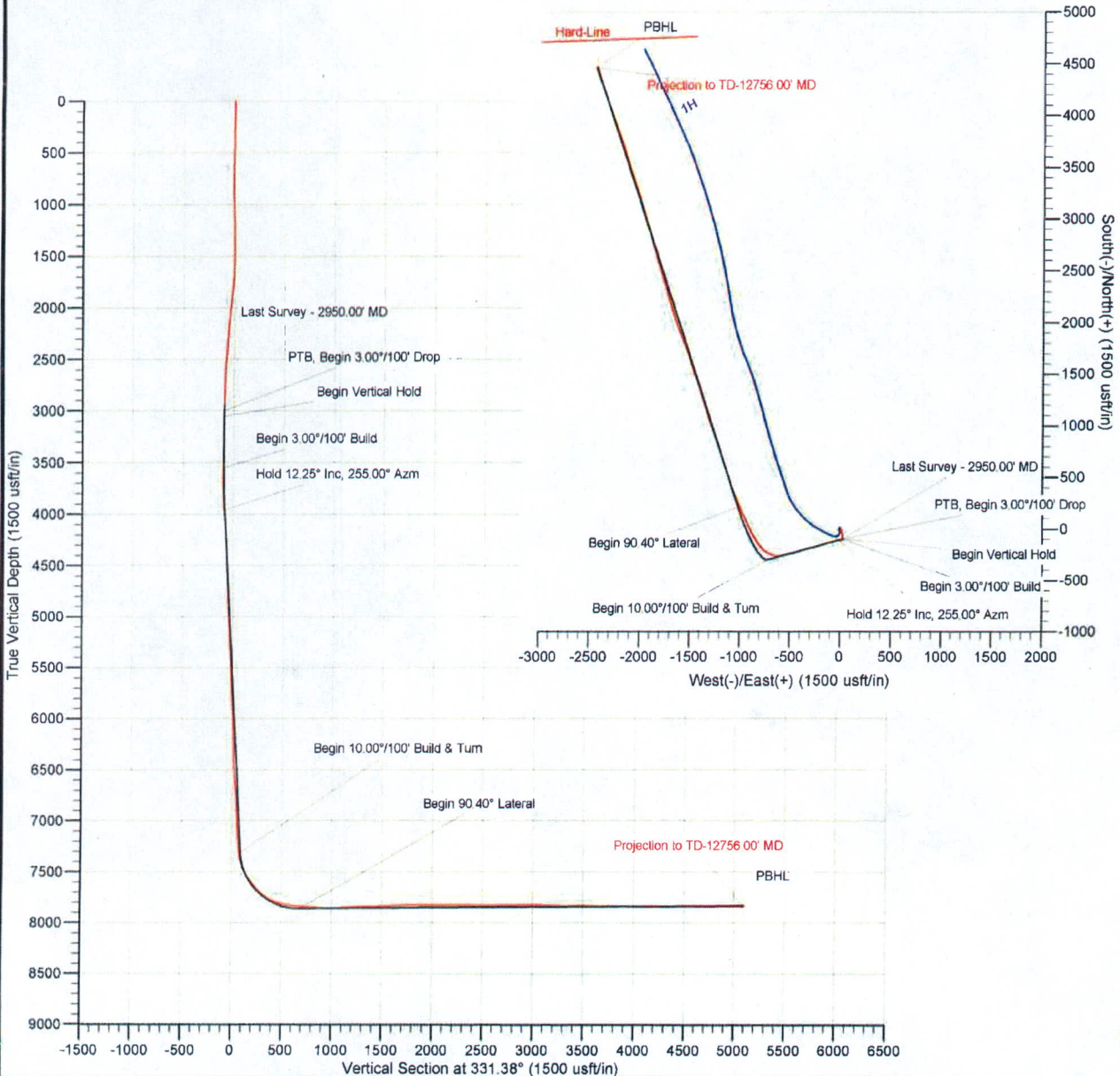


Azimuths to Grid North  
 True North: 0.57°  
 Magnetic North: -8.20°  
 Magnetic Field  
 Strength: 52565.2nT  
 Dip Angle: 67.14°  
 Date: 03/14/2013  
 Model: WMM\_2010

US State Plane 1927 (Exact solution)  
 West Virginia North 4701

Created By: HLH  
 Date: 11:12, June 10 2013  
 Plan: Design #4

ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation	
2950.00	1.60	204.50	2945.38	-94.10	27.78	-95.91	0.00	Last Survey - 2950.00' MD	
3000.00	1.60	204.50	2995.36	-95.37	27.20	-96.75	1.40	PTB, Begin 3.00°/100' Drop	
3053.33	0.00	0.00	3048.88	-96.05	26.89	-97.20	2.14	Begin Vertical Hold	
3553.33	0.00	0.00	3548.88	-96.05	26.89	-97.20	2.14	Begin 3.00°/100' Build	
3961.56	12.25	255.00	3953.81	-107.30	-15.09	-86.98	45.60	Hold 12.25° Inc, 255.00° Azm	
7395.36	12.25	255.00	7309.46	-295.80	-718.67	84.58	773.99	Begin 10.00°/100' Build & Turn	
8291.85	90.40	341.51	7862.00	213.00	-1015.95	673.61	1381.47	Begin 90.40° Lateral	
12782.61	90.40	341.51	7830.65	4471.83	-2440.11	5094.25	5872.11	PBHL	



The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented. Any decisions made or wells drilled utilizing this or any other information supplied by MS Energy are at the sole risk and responsibility of the customer. MS Energy is not responsible for the accuracy of this schematic or the information contained herein.

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**Company:** Trans Energy Inc.  
**Project:** Marion County, West Virginia (NAD 27)  
**Site:** Freeland, et al (Grid)  
**Well:** 2H  
**Wellbore:** Wellbore #1  
**Design:** Surveys

**Local Co-ordinate Reference:** Well 2H  
**TVD Reference:** WELL @ 1327.09usft (Nomac 290)  
**MD Reference:** WELL @ 1327.09usft (Nomac 290)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Well Planning Conroe

<b>Project</b>	Marion County, West Virginia (NAD 27)		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	West Virginia North 4701		

**Well** 2H

<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	408,668.95 usft	<b>Latitude:</b>	39.8185528
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	1,746,692.34 usft	<b>Longitude:</b>	-80.3992055
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	1,310.09 usft

**Wellbore** Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	03/14/13	-8.77	87.14	52,565

**Design** Surveys

**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	331.38

**Survey Program** Date 08/10/13

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
139.00	12,758.00	MS MWD (Wellbore #1)	MWD	MWD - Standard

**Survey**

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
139.00	1.80	212.10	136.98	-1.85	-1.16	-1.07	1.29	1.29	0.00
169.00	1.50	217.50	168.96	-2.56	-1.65	-1.46	1.13	-1.00	18.00
200.00	1.60	213.50	199.95	-3.24	-2.14	-1.82	0.48	0.32	-12.90
231.00	1.40	203.20	230.94	-3.95	-2.52	-2.26	1.08	-0.65	-33.23
262.00	1.50	199.80	261.93	-4.68	-2.81	-2.76	0.43	0.32	-10.97
292.00	1.50	214.70	291.92	-5.37	-3.17	-3.20	1.30	0.00	49.67
321.00	1.50	206.80	320.91	-6.02	-3.55	-3.59	0.71	0.00	-27.24
386.00	1.70	210.10	385.89	-7.62	-4.42	-4.57	0.34	0.31	5.08
417.00	1.80	206.50	416.87	-8.45	-4.87	-5.09	0.48	0.32	-11.61
481.00	1.70	206.50	480.84	-10.20	-5.74	-6.20	0.16	-0.16	0.00
544.00	1.80	178.00	543.81	-12.03	-6.12	-7.62	1.38	0.16	-45.24
808.00	1.40	174.70	607.79	-13.81	-6.02	-9.24	0.64	-0.63	-5.16
639.00	1.10	175.00	638.78	-14.48	-5.98	-9.86	0.97	-0.97	0.97
671.00	1.00	158.80	670.78	-15.05	-5.83	-10.42	0.98	-0.31	-50.63

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**MS Energy Services**  
 Survey Report

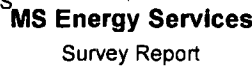


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**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Well Planning Conroe

**Survey**

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)
703.00	0.90	137.90	702.77	-15.50	-5.56	-10.94	1.12	-0.31	-65.31
735.00	0.90	101.00	734.77	-15.73	-5.14	-11.34	1.78	0.00	-115.31
768.00	0.80	81.00	765.77	-15.74	-4.69	-11.57	1.00	-0.32	-64.52
798.00	0.90	61.60	797.76	-15.59	-4.25	-11.65	0.95	0.31	-60.83
830.00	1.20	45.20	829.76	-15.23	-3.79	-11.56	1.32	0.94	-51.25
862.00	1.60	25.50	861.75	-14.59	-3.36	-11.20	1.94	1.25	-61.56
893.00	1.80	26.30	892.73	-13.77	-2.96	-10.67	0.65	0.65	2.58
925.00	2.20	21.70	924.71	-12.75	-2.51	-9.99	1.35	1.25	-14.38
957.00	2.50	21.00	956.69	-11.52	-2.03	-9.14	0.94	0.94	-2.19
989.00	2.70	25.20	986.65	-10.19	-1.46	-8.25	0.86	0.63	13.13
1,020.00	2.90	24.50	1,019.62	-8.82	-0.82	-7.34	0.65	0.65	-2.28
1,052.00	3.10	23.20	1,051.57	-7.28	-0.15	-6.32	0.68	0.63	-4.06
1,084.00	3.00	23.60	1,083.53	-5.72	0.53	-5.28	0.32	-0.31	1.25
1,116.00	3.00	19.20	1,115.48	-4.16	1.14	-4.20	0.72	0.00	-13.75
1,144.00	2.40	19.80	1,143.45	-2.92	1.58	-3.32	2.14	-2.14	1.43
1,260.00	2.40	21.50	1,259.35	1.63	3.28	-0.14	0.07	0.00	1.64
1,320.00	1.40	29.00	1,319.32	3.44	4.10	1.06	1.71	-1.67	12.50
1,383.00	0.80	132.20	1,382.31	3.82	4.80	1.05	2.80	-0.95	163.81
1,447.00	1.10	155.10	1,446.30	2.96	5.39	0.02	0.75	0.47	35.78
1,511.00	1.60	157.30	1,510.28	1.58	5.99	-1.48	0.79	0.78	3.44
1,574.00	1.70	171.60	1,573.28	-0.16	6.47	-3.24	0.67	0.16	22.70
1,638.00	2.70	167.10	1,637.21	-2.57	6.94	-5.58	1.58	1.56	-7.03
1,701.00	3.30	164.00	1,700.12	-5.76	7.77	-8.78	0.99	0.95	-4.92
1,765.00	4.60	160.10	1,763.97	-9.94	9.15	-13.11	2.07	2.03	-6.09
1,828.00	5.10	166.30	1,826.74	-15.04	10.68	-18.31	1.15	0.79	9.84
1,892.00	5.50	165.40	1,890.47	-20.77	12.12	-24.04	0.64	0.63	-1.41
1,955.00	5.90	164.50	1,953.16	-26.81	13.75	-30.12	0.65	0.63	-1.43
2,019.00	5.90	162.80	2,016.82	-33.12	15.60	-36.55	0.27	0.00	-2.66
2,083.00	6.20	160.70	2,080.46	-39.52	17.72	-43.18	0.58	0.47	-3.28
2,146.00	5.90	164.30	2,143.11	-45.85	19.72	-49.70	0.77	-0.48	5.71
2,210.00	4.60	166.40	2,206.84	-51.51	21.21	-55.38	2.05	-2.03	3.28
2,273.00	3.90	167.00	2,269.67	-56.06	22.29	-59.88	1.11	-1.11	0.95
2,337.00	4.30	167.00	2,333.51	-60.52	23.32	-64.29	0.63	0.63	0.00
2,400.00	4.70	167.10	2,396.31	-65.33	24.42	-69.05	0.64	0.63	0.16
2,464.00	5.10	164.60	2,460.08	-70.63	25.76	-74.34	0.71	0.63	-3.91
2,528.00	4.60	164.00	2,523.85	-75.84	27.23	-79.62	0.79	-0.78	-0.94
2,591.00	4.00	169.40	2,586.67	-80.43	28.33	-84.17	1.15	-0.95	8.57
2,655.00	2.90	178.80	2,650.55	-84.24	28.83	-87.76	1.85	-1.72	11.56
2,718.00	2.30	178.60	2,713.49	-87.09	28.95	-90.32	0.96	-0.95	2.66
2,782.00	1.90	182.60	2,777.45	-89.44	28.93	-92.37	0.67	-0.63	6.25
2,846.00	1.50	195.40	2,841.42	-91.31	28.66	-93.88	0.66	-0.63	20.00
2,909.00	1.70	196.10	2,904.39	-93.00	28.16	-95.14	0.32	0.32	1.11
2,950.00	1.60	204.50	2,945.38	-94.10	27.78	-95.91	0.64	-0.24	20.49
3,050.00	1.80	213.70	3,045.33	-96.68	26.33	-97.48	0.34	0.20	9.20



**Company:** Trans Energy Inc.  
**Project:** Marion County, West Virginia (NAD 27)  
**Site:** Freeland, et al (Grid)  
**Well:** 2H  
**Wellbore:** Wellbore #1  
**Design:** Surveys

**Local Co-ordinate Reference:** Well 2H  
**TVD Reference:** WELL @ 1327.09usft (Nomac 290)  
**MD Reference:** WELL @ 1327.09usft (Nomac 290)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Well Planning Conroe

**Survey**

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)
3,113.00	1.70	218.40	3,108.30	-98.24	25.20	-98.30	0.28	-0.16	7.48
3,177.00	1.40	215.10	3,172.28	-99.62	24.16	-99.02	0.49	-0.47	-5.16
3,241.00	1.40	218.70	3,236.26	-100.87	23.22	-99.67	0.14	0.00	5.63
3,303.00	1.30	219.30	3,298.24	-102.01	22.30	-100.22	0.16	-0.16	0.97
3,367.00	1.10	217.20	3,362.23	-103.06	21.47	-100.75	0.32	-0.31	-3.28
3,430.00	1.00	212.70	3,425.22	-104.00	20.81	-101.26	0.21	-0.16	-7.14
3,494.00	1.00	218.40	3,489.21	-104.91	20.16	-101.75	0.16	0.00	8.91
3,558.00	0.70	213.10	3,553.20	-105.67	19.60	-102.15	0.48	-0.47	-8.28
3,621.00	2.20	237.70	3,616.18	-106.64	18.37	-102.41	2.52	2.38	39.05
3,684.00	2.50	247.70	3,679.13	-107.81	16.07	-102.34	0.80	0.48	15.87
3,748.00	3.30	253.60	3,743.05	-108.86	13.01	-101.79	1.33	1.25	9.22
3,812.00	4.90	262.40	3,806.88	-109.74	8.54	-100.42	2.68	2.50	13.75
3,875.00	6.90	267.40	3,869.54	-110.27	2.09	-97.80	3.27	3.17	7.94
3,939.00	8.60	266.90	3,932.96	-110.70	-6.53	-94.05	2.66	2.66	-0.78
4,003.00	9.60	268.60	3,996.15	-111.09	-16.64	-89.55	1.62	1.56	2.66
4,066.00	10.00	266.20	4,058.23	-111.58	-27.35	-84.85	0.91	0.83	-3.81
4,130.00	10.90	262.90	4,121.17	-112.70	-38.90	-80.29	1.69	1.41	-5.16
4,192.00	10.90	259.70	4,182.05	-114.47	-50.49	-76.30	0.98	0.00	-5.16
4,256.00	10.50	255.70	4,244.94	-116.99	-62.09	-72.86	1.32	-0.63	-6.25
4,319.00	9.80	254.30	4,306.95	-119.86	-72.82	-70.34	1.18	-1.11	-2.22
4,383.00	9.70	252.80	4,370.03	-122.93	-83.21	-68.05	0.43	-0.16	-2.34
4,446.00	10.80	251.30	4,432.02	-126.39	-93.67	-65.98	1.80	1.75	-2.38
4,510.00	11.60	250.60	4,494.80	-130.45	-105.62	-63.92	1.27	1.25	-1.09
4,573.00	11.50	250.60	4,556.53	-134.64	-117.52	-61.90	0.16	-0.16	0.00
4,637.00	11.20	254.40	4,619.28	-138.43	-129.52	-59.48	1.26	-0.47	5.94
4,700.00	11.30	256.90	4,681.07	-141.48	-141.43	-56.45	0.79	0.16	3.97
4,764.00	11.40	254.80	4,743.82	-144.56	-153.64	-53.30	0.66	0.16	-3.28
4,827.00	10.60	251.50	4,805.66	-148.03	-165.14	-50.84	1.62	-1.27	-5.24
4,891.00	8.90	250.80	4,868.73	-151.52	-175.40	-48.99	2.66	-2.66	-1.09
4,954.00	8.60	255.10	4,931.00	-154.34	-184.55	-47.08	1.14	-0.48	6.83
5,018.00	10.00	263.80	4,994.16	-156.17	-194.70	-43.82	3.09	2.19	13.59
5,081.00	10.20	260.40	5,056.16	-157.69	-205.64	-39.92	1.00	0.32	-5.40
5,145.00	10.40	256.50	5,119.15	-159.98	-216.85	-36.57	1.13	0.31	-6.09
5,208.00	10.40	252.70	5,181.12	-163.00	-227.81	-33.97	1.09	0.00	-6.03
5,272.00	10.30	252.00	5,244.08	-166.49	-238.76	-31.78	0.25	-0.16	-1.09
5,335.00	10.40	253.60	5,306.05	-169.83	-249.57	-29.54	0.48	0.16	2.54
5,399.00	10.50	261.40	5,368.99	-172.34	-260.88	-26.32	2.21	0.16	12.19
5,462.00	10.50	257.50	5,430.94	-174.44	-272.16	-22.76	1.13	0.00	-6.19
5,526.00	10.20	252.60	5,493.90	-177.39	-283.26	-20.04	1.45	-0.47	-7.66
5,589.00	11.10	252.80	5,555.81	-180.86	-294.38	-17.75	1.43	1.43	0.32
5,653.00	11.60	252.10	5,618.56	-184.66	-306.39	-15.33	0.81	0.78	-1.09
5,716.00	12.10	251.40	5,680.22	-188.71	-318.67	-13.01	0.83	0.79	-1.11
5,779.00	12.00	253.80	5,741.83	-192.64	-331.22	-10.45	0.81	-0.16	3.81



**MS Energy Services**  
 Survey Report



**Company:** Trans Energy Inc.  
**Project:** Marion County, West Virginia (NAD 27)  
**Site:** Freeland, et al (Grid)  
**Well:** 2H  
**Wellbore:** Wellbore #1  
**Design:** Surveys

**Local Co-ordinate Reference:** Well 2H  
**TVD Reference:** WELL @ 1327.09usft (Nomac 290)  
**MD Reference:** WELL @ 1327.09usft (Nomac 290)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Well Planning Conroe

**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)
5,843.00	12.30	254.40	5,804.40	-198.33	-344.18	-7.48	0.51	0.47	0.94
5,906.00	12.30	253.70	5,865.95	-200.02	-357.08	-4.54	0.24	0.00	-1.11
5,970.00	12.80	256.60	5,928.42	-203.58	-370.52	-1.22	1.26	0.78	4.53
6,033.00	12.70	260.00	5,989.87	-206.40	-384.13	2.82	1.20	-0.16	5.40
6,097.00	12.60	257.40	6,052.32	-209.14	-397.87	6.99	0.90	-0.16	-4.08
6,160.00	11.40	254.20	6,113.94	-212.33	-410.57	10.27	2.18	-1.90	-5.08
6,224.00	9.80	250.10	6,176.85	-215.91	-421.78	12.50	2.76	-2.50	-6.41
6,287.00	8.30	248.10	6,239.06	-219.43	-431.04	13.85	2.43	-2.38	-3.17
6,350.00	7.20	245.90	6,301.48	-222.74	-438.86	14.69	1.81	-1.75	-3.49
6,414.00	7.10	245.20	6,364.99	-226.04	-446.11	15.27	0.21	-0.16	-1.09
6,482.00	7.50	247.20	6,432.44	-229.52	-454.02	16.00	0.70	0.59	2.94
6,545.00	7.70	267.50	6,494.89	-231.30	-462.03	18.27	4.25	0.32	32.22
6,609.00	9.80	271.00	6,558.15	-231.39	-471.76	22.85	3.38	3.28	5.47
6,673.00	10.50	267.10	6,621.14	-231.59	-483.03	28.08	1.53	1.09	-6.09
6,736.00	10.70	264.30	6,683.07	-232.46	-494.58	32.85	0.88	0.32	-4.44
6,800.00	11.40	261.40	6,745.88	-234.00	-506.75	37.32	1.40	1.09	-4.53
6,863.00	12.30	253.50	6,807.54	-236.83	-519.34	40.87	2.94	1.43	-12.54
6,927.00	11.80	251.90	6,870.13	-240.80	-532.09	43.49	0.94	-0.78	-2.50
6,990.00	11.90	252.60	6,931.79	-244.75	-544.41	45.93	0.28	0.16	1.11
7,054.00	12.80	254.60	6,994.31	-248.60	-557.55	48.84	1.56	1.41	3.13
7,117.00	12.70	255.60	7,055.76	-252.18	-570.98	52.13	0.38	-0.16	1.59
7,181.00	12.70	258.30	7,118.19	-255.35	-584.68	55.91	0.93	0.00	4.22
7,238.00	12.20	260.60	7,173.85	-257.81	-596.76	59.72	1.24	-0.88	4.04
7,301.00	11.10	258.50	7,235.55	-259.90	-609.27	63.69	1.87	-1.75	-3.33
7,333.00	11.00	259.30	7,266.96	-261.09	-615.29	65.54	0.57	-0.31	2.50
7,365.00	12.40	266.50	7,298.30	-261.86	-621.72	67.94	6.31	4.38	22.50
7,397.00	15.50	276.40	7,329.35	-261.59	-629.40	71.85	12.19	9.69	30.94
7,429.00	18.40	282.80	7,359.96	-260.00	-638.58	77.65	10.76	9.06	20.00
7,461.00	21.40	287.00	7,390.05	-257.17	-649.09	85.16	10.38	9.38	13.13
7,493.00	22.90	287.50	7,419.69	-253.59	-660.61	93.82	4.72	4.69	1.56
7,524.00	26.10	289.00	7,447.89	-249.56	-672.81	103.21	10.52	10.32	4.84
7,556.00	29.50	290.90	7,476.19	-244.45	-686.83	114.41	10.98	10.63	5.94
7,588.00	34.50	294.10	7,503.33	-237.94	-702.48	127.62	16.49	15.63	10.00
7,620.00	37.20	296.90	7,529.26	-229.86	-719.38	142.81	9.87	8.44	8.75
7,652.00	38.80	303.70	7,554.49	-219.91	-736.36	159.87	14.00	5.00	21.25
7,684.00	38.10	310.20	7,579.56	-207.97	-752.25	177.76	12.81	-2.19	20.31
7,716.00	38.70	316.90	7,604.65	-194.29	-766.63	196.66	13.13	1.88	20.94
7,747.00	38.40	318.40	7,628.89	-180.02	-779.64	215.43	3.17	-0.97	4.84
7,779.00	40.70	321.00	7,653.57	-164.47	-792.81	235.38	8.85	7.19	8.13
7,810.00	42.50	322.00	7,676.75	-148.36	-805.62	255.65	6.19	5.81	3.23
7,842.00	46.10	323.20	7,699.65	-130.61	-819.19	277.74	11.55	11.25	3.75
7,874.00	50.00	324.60	7,721.04	-111.38	-833.20	301.33	12.61	12.19	4.38
7,906.00	55.50	327.80	7,740.40	-90.21	-847.34	326.69	18.94	17.19	10.00

Received

DEC 22 2014



**Company:** Trans Energy Inc.  
**Project:** Marion County, West Virginia (NAD 27)  
**Site:** Freeland, et al (Grid)  
**Well:** 2H  
**Wellbore:** Wellbore #1  
**Design:** Surveys

**Local Co-ordinate Reference:** Well 2H  
**TVD Reference:** WELL @ 1327.09usft (Nomac 290)  
**MD Reference:** WELL @ 1327.09usft (Nomac 290)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Well Planning Conroe

**Survey**

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)
7,938.00	58.20	329.50	7,757.90	-67.33	-861.27	353.44	9.54	8.44	5.31
7,970.00	62.80	331.30	7,773.65	-43.12	-875.01	381.28	15.18	14.38	5.63
8,002.00	66.10	334.20	7,787.46	-17.45	-888.22	410.14	13.16	10.31	9.06
8,033.00	70.60	334.40	7,798.89	8.50	-900.71	436.90	14.53	14.52	0.65
8,065.00	73.40	334.70	7,808.78	35.98	-913.79	469.29	8.80	8.75	0.94
8,097.00	76.70	334.40	7,817.03	63.89	-927.07	500.15	10.35	10.31	-0.94
8,129.00	79.10	334.10	7,823.74	92.07	-940.66	531.40	7.56	7.50	-0.94
8,161.00	82.60	334.70	7,828.83	120.56	-954.31	562.94	11.09	10.94	1.88
8,193.00	83.40	335.20	7,832.73	149.34	-967.76	594.64	2.94	2.50	1.56
8,225.00	84.00	336.10	7,836.24	178.31	-980.87	626.36	3.37	1.88	2.81
8,257.00	84.40	336.70	7,839.47	207.49	-993.62	658.08	2.25	1.25	1.88
8,320.00	84.80	336.70	7,845.40	265.09	-1,018.43	720.53	0.63	0.63	0.00
8,384.00	86.00	336.90	7,850.53	323.73	-1,043.56	784.03	1.90	1.88	0.31
8,447.00	87.90	338.10	7,853.89	381.84	-1,067.63	846.58	3.57	3.02	1.90
8,511.00	88.30	339.60	7,856.01	441.50	-1,090.71	910.00	2.42	0.63	2.34
8,574.00	90.10	340.30	7,856.89	500.67	-1,112.31	972.29	3.07	2.86	1.11
8,638.00	92.20	341.20	7,855.60	561.08	-1,133.40	1,035.42	3.57	3.28	1.41
8,702.00	92.40	341.60	7,853.03	621.68	-1,153.80	1,098.39	0.70	0.31	0.63
8,765.00	93.10	341.80	7,850.01	681.43	-1,173.56	1,160.30	1.16	1.11	0.32
8,828.00	92.00	341.50	7,847.21	741.17	-1,193.37	1,222.23	1.81	-1.75	-0.48
8,892.00	90.30	340.70	7,845.92	801.70	-1,214.09	1,285.29	2.94	-2.66	-1.25
8,955.00	90.80	339.80	7,845.32	860.99	-1,235.38	1,347.54	1.63	0.79	-1.43
9,018.00	92.40	339.50	7,843.56	920.03	-1,257.28	1,409.86	2.58	2.54	-0.48
9,081.00	93.40	339.50	7,840.37	978.97	-1,279.32	1,472.14	1.59	1.59	0.00
9,145.00	93.50	340.90	7,836.52	1,039.07	-1,300.96	1,535.27	2.19	0.16	2.19
9,208.00	92.00	342.00	7,833.50	1,098.73	-1,320.97	1,597.23	2.95	-2.38	1.75
9,272.00	91.30	342.10	7,831.66	1,159.59	-1,340.69	1,660.09	1.10	-1.09	0.16
9,334.00	89.80	342.00	7,831.06	1,218.57	-1,359.80	1,721.02	2.42	-2.42	-0.16
9,398.00	90.00	342.00	7,831.17	1,279.43	-1,379.57	1,783.92	0.31	0.31	0.00
9,462.00	90.00	341.70	7,831.17	1,340.25	-1,399.51	1,846.85	0.47	0.00	-0.47
9,525.00	90.80	341.80	7,830.73	1,400.08	-1,419.24	1,908.82	1.28	1.27	0.16
9,589.00	89.90	340.70	7,830.34	1,460.68	-1,439.81	1,971.87	2.22	-1.41	-1.72
9,653.00	89.50	340.20	7,830.68	1,520.98	-1,461.22	2,035.07	1.00	-0.83	-0.78
9,716.00	90.10	340.90	7,830.90	1,580.39	-1,482.20	2,097.27	1.46	0.95	1.11
9,779.00	90.60	341.10	7,830.51	1,639.96	-1,502.71	2,159.38	0.85	0.79	0.32
9,843.00	91.60	341.10	7,829.28	1,700.50	-1,523.44	2,222.45	1.56	1.56	0.00
9,907.00	89.50	338.30	7,828.87	1,760.51	-1,545.64	2,285.76	5.47	-3.28	-4.38
9,970.00	87.90	338.20	7,830.10	1,819.01	-1,568.98	2,348.29	2.54	-2.54	-0.16
10,034.00	89.00	339.00	7,831.83	1,878.57	-1,592.32	2,411.76	2.12	1.72	1.25
10,097.00	89.40	339.90	7,832.71	1,937.56	-1,614.43	2,474.13	1.56	0.63	1.43
10,161.00	90.20	340.50	7,832.93	1,997.77	-1,636.11	2,537.37	1.56	1.25	0.94
10,224.00	90.70	341.60	7,832.44	2,057.35	-1,656.57	2,599.47	1.92	0.79	1.75
10,288.00	91.30	342.00	7,831.32	2,118.14	-1,676.56	2,662.41	1.13	0.94	0.63
10,351.00	91.40	342.50	7,829.84	2,178.13	-1,695.76	2,724.26	0.81	0.16	0.79



**MS Energy Services**  
Survey Report



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**North Reference:** Grid  
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**Survey**

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)
10,415.00	90.20	343.00	7,828.94	2,239.24	-1,714.73	2,786.99	2.03	-1.88	0.78
10,478.00	90.70	343.50	7,828.45	2,299.56	-1,732.89	2,848.64	1.12	0.79	0.79
10,541.00	91.20	343.40	7,827.40	2,359.95	-1,750.83	2,910.24	0.81	0.79	-0.16
10,605.00	90.90	342.70	7,826.23	2,421.16	-1,769.49	2,972.91	1.19	-0.47	-1.09
10,668.00	88.80	343.10	7,826.40	2,481.37	-1,788.01	3,034.64	3.39	-3.33	0.63
10,732.00	87.60	342.00	7,828.41	2,542.39	-1,807.19	3,097.39	2.54	-1.88	-1.72
10,795.00	88.10	342.60	7,830.77	2,602.36	-1,826.33	3,159.21	1.24	0.79	0.95
10,859.00	88.40	343.10	7,832.72	2,663.49	-1,845.19	3,221.90	0.91	0.47	0.78
10,922.00	88.90	343.60	7,834.21	2,723.83	-1,863.24	3,283.51	1.12	0.79	0.79
10,986.00	91.10	344.90	7,834.21	2,785.42	-1,880.61	3,345.90	3.99	3.44	2.03
11,049.00	91.90	345.50	7,832.56	2,846.31	-1,898.70	3,407.05	1.59	1.27	0.95
11,113.00	90.50	344.20	7,831.22	2,908.07	-1,913.42	3,469.28	2.98	-2.19	-2.03
11,177.00	88.10	341.90	7,832.00	2,969.28	-1,932.07	3,531.94	5.19	-3.75	-3.59
11,240.00	88.80	342.20	7,833.70	3,029.19	-1,951.48	3,593.83	1.21	1.11	0.48
11,304.00	90.10	343.20	7,834.32	3,090.29	-1,970.51	3,656.58	2.56	2.03	1.56
11,366.00	91.30	343.60	7,833.56	3,149.70	-1,988.22	3,717.21	2.04	1.94	0.65
11,429.00	89.00	341.70	7,833.40	3,209.83	-2,007.01	3,778.99	4.74	-3.65	-3.02
11,493.00	87.30	341.90	7,835.46	3,270.59	-2,026.99	3,841.90	2.67	-2.66	0.31
11,557.00	87.70	341.80	7,838.25	3,331.35	-2,046.91	3,904.77	0.64	0.63	-0.16
11,620.00	87.70	341.70	7,840.78	3,391.13	-2,066.62	3,966.69	0.16	0.00	-0.16
11,682.00	87.70	341.30	7,843.27	3,449.88	-2,086.28	4,027.68	0.64	0.00	-0.65
11,746.00	88.20	341.60	7,845.56	3,510.51	-2,106.62	4,090.65	0.91	0.78	0.47
11,809.00	89.50	342.40	7,846.82	3,570.42	-2,126.09	4,152.56	2.42	2.06	1.27
11,873.00	91.20	343.60	7,846.43	3,631.62	-2,144.80	4,215.24	3.25	2.66	1.88
11,936.00	92.40	342.60	7,844.45	3,691.86	-2,163.10	4,276.90	2.48	1.90	-1.59
12,000.00	91.40	340.50	7,842.33	3,752.54	-2,183.34	4,339.85	3.63	-1.56	-3.28
12,064.00	89.00	338.90	7,842.11	3,812.55	-2,205.55	4,403.17	4.51	-3.75	-2.50
12,127.00	89.50	339.10	7,842.93	3,871.37	-2,228.12	4,465.61	0.65	0.79	0.32
12,191.00	89.90	339.40	7,843.27	3,931.21	-2,250.79	4,529.01	0.78	0.63	0.47
12,255.00	89.80	339.60	7,843.44	3,991.16	-2,273.21	4,592.37	0.35	-0.16	0.31
12,319.00	89.70	339.30	7,843.72	4,051.09	-2,295.67	4,655.73	0.49	-0.16	-0.47
12,382.00	90.00	340.00	7,843.86	4,110.15	-2,317.58	4,718.08	1.21	0.48	1.11
12,446.00	90.50	339.90	7,843.60	4,170.27	-2,339.52	4,781.36	0.80	0.78	-0.16
12,509.00	90.30	339.60	7,843.16	4,229.38	-2,361.33	4,843.69	0.57	-0.32	-0.48
12,573.00	90.40	339.80	7,842.77	4,289.36	-2,383.64	4,907.03	0.16	0.16	0.00
12,636.00	91.10	339.90	7,841.95	4,348.46	-2,405.44	4,969.35	1.21	1.11	0.48
12,695.00	91.60	339.90	7,840.56	4,403.86	-2,425.71	5,027.88	0.85	0.85	0.00
12,756.00	91.60	339.90	7,838.85	4,461.12	-2,446.66	5,087.99	0.00	0.00	0.00

Projection to TD-12756.00' MD



**Company:** Trans Energy Inc.  
**Project:** Marion County, West Virginia (NAD 27)  
**Site:** Freeland, et al (Grid)  
**Well:** 2H  
**Wellbore:** Wellbore #1  
**Design:** Surveys

**Local Co-ordinate Reference:** Well 2H  
**TVD Reference:** WELL @ 1327.09usft (Nomac 280)  
**MD Reference:** WELL @ 1327.09usft (Nomac 280)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Well Planning Conroe

**Survey Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,758.00	7,838.85	4,461.12	-2,446.66	Projection to TD-12758.00' MD

Received  
 Office of Oil & Gas  
 DEC 22 2014

Fracture Start Date/Time:	7/8/13 6:00
Fracture End Date/Time:	7/17/14 12:30
State:	West Virginia
County:	Marion
API Number:	47-049-02225-0000
Operator Number:	494481575
Well Name:	Freeland 2H
Federal Well:	No
Longitude:	-80.3991
Latitude:	39.6185
Long/Lat Projection:	NAD27
True Vertical Depth (TVD):	6,954'
Total Clean Fluid Volume* (gal):	2,722,854

Received  
 Office of Oil & Gas  
 DEC 22 2014

Additive	Specific Gravity	Additive Quantity	Mass (lbs)	
Freshwater	1.00	2,722,854	22,722,217	gal
100 Mesh	2.65	2,274,940	2,274,940	lb
40/70 White Sand	2.65	2,140,980	2,140,980	lb
20/40 White Sand	2.65	818,050	818,050	lb
Plexhib 256	0.86	48	344	gal
HCl Acid 10-15%	1.07	24,000	214,300	gal
Ferriplex 66	1.15	48	461	gal
Greenflush	0.81	0	0	gal
Sodium Persulfate	2.60	44	44	lb
Beta M-4.0	1.01	467	3,928	gal
Plexbreak 145	0.95	48	381	gal
Plexlick 953	1.06	3,112	27,528	gal
				gal
				gal
				gal
<b>Total Slurry Mass (Lbs)</b>				
28,203,172				

**Ingredients Section:**

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Mass per Component (LBS)	Maximum Ingredient Concentration in HF Fluid (% by mass)**
Freshwater	Republic Energy	Frac Base	Water	7732-18-5	100.00%	22,722,217	80.56617%
100 Mesh	US Silica	Proppant	Sand	14808-60-7	100.00%	2,274,940	8.06626%
40/70 White Sand	US Silica	Proppant	Sand	14808-60-7	100.00%	2,140,980	7.59127%
20/40 White Sand	US Silica	Proppant	Sand	14808-60-7	100.00%	818,050	2.90056%
HCl Acid 10-15%	GoFrac	Acid	Hydrochloric Acid	7647-01-0	15.00%	32,145	0.11398%
Ferriplex 66	Chemplex	Iron Control	Acetic Acid	64-19-7	50.00%	230	0.00082%
			Citric Acid	77-92-9	30.00%	138	0.00049%
			Water	7732-18-5	35.00%	161	0.00057%
Greenflush	Chemplex	Cleaner	Alcohol Ethoxylate Surfactants	Proprietary	10.00%	0	0.00000%
Plexbreak 145	Chemplex	Non-Emulsifier	Cocamide Diethanolamine Salt	68603-42-9	10.00%	38	0.00013%
			Diethanolamine	111-42-2	5.00%	19	0.00007%
			Ethylene Glycol Monobutyl Ether	111-76-2	15.00%	57	0.00020%
			Methyl Alcohol	67-56-1	15.00%	57	0.00020%
			Water	7732-18-5	66.00%	251	0.00089%
Plexhib 256	Chemplex	Corrosion Inhibitor	Alcohol Ethoxylate Surfactants	Proprietary	30.00%	103	0.00037%
			Methyl Alcohol	67-56-1	70.00%	241	0.00085%
			n-olefins	Proprietary	10.00%	34	0.00012%
			Propargyl Alcohol	107-19-7	8.00%	28	0.00010%
			Thiourea-formaldehyde copolymer	68527-49-1	30.00%	103	0.00037%
Sodium Persulfate	Chemplex	Active Breaker	Sodium Persulfate	7775-27-1	100.00%	44	0.00016%
Plexlick 953	Chemplex	Friction Reducer	Alcohol Ethoxylate Surfactants	Proprietary	8.00%	2,202	0.00781%
			Hydrotreated Petroleum Distillate	64742-47-8	30.00%	8,258	0.02928%
			Polyacrylamide-co-acrylic acid	Proprietary	32.00%	8,809	0.03123%
			Water	7732-18-5	35.00%	9,635	0.03416%
Beta M-4.0	PPF	Guar Gel	Guar Gum	9000-30-0	50.00%	1,964	0.00696%
			Petroleum Distillate	64742-47-8	55.00%	2,161	0.00766%
			Clay	Proprietary	5.00%	196	0.00070%

\*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%

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.

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