

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1247557
OIL & GAS CONSERVATION DIVISION

Form ACO-1
August 2013

Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____

1247557

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: Yes No

Date of First, Resumed Production, SWD or ENHR. _____ Producing Method:
 Flowing Pumping Gas Lift Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
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DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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MWD SURVEYS

Customer: Tapstone Energy
 Well: Chain Land 3509 11-4
 Field/Block: Mississippi Lime
 Co./Parish: Harper County
 State: Kansas

PGS Job #: LKS6116715
 MWD Operator: Cody Sargent
 Directional Driller: Jared Gooch
 Date of First Survey: January 29, 2015
 Date of Last Survey: February 2, 2015



Total Correction: 4.28 East Grid

Vertical Section Plane: 354.91 Nominal Dip Angle: 65.04 Magnetic Field Strength: .515

Measured Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	Coordinates			Closure			MTR YLD	Temp (°F)	Vib/Shk			
					+N / -S	+E / -W	Dist.	Angle	DLS	Color			Date	Time	Flow Rate	
<p style="text-align: center;">Survey's are tied into: Assume Vertical at Casing Shoe at MD 813' Date Received:</p> <p style="text-align: center;">Company:</p>																
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
1	893.00	0.20	292.20	893.00	0.71	0.59	-1.44	1.56	292.20	0.02	0.00	79.0	Green	01/20/15	8:00	537 (gpm)
2	988.00	0.20	293.10	988.00	0.87	0.72	-1.75	1.89	292.28	0.00	0.00	84.0	Green	01/20/15	8:45	537 (gpm)
3	1,083.00	0.00	45.30	1083.00	0.95	0.78	-1.90	2.06	292.35	0.21	0.00	88.0	Green	01/20/15	9:27	537 (gpm)
4	1,177.00	0.10	287.60	1177.00	0.98	0.81	-1.98	2.14	292.16	0.11	0.00	91.0	Green	01/20/15	10:20	537 (gpm)
5	1,272.00	0.30	97.00	1272.00	0.96	0.80	-1.81	1.98	293.85	0.42	0.00	93.0	Green	01/20/15	11:18	537 (gpm)
6	1,367.00	0.60	87.90	1366.99	0.88	0.79	-1.07	1.33	306.46	0.32	0.00	97.0	Green	01/20/15	12:23	537 (gpm)
7	1,462.00	0.80	89.00	1461.99	0.81	0.82	0.09	0.82	6.42	0.21	0.00	99.0	Green	01/20/15	13:25	537 (gpm)
8	1,557.00	1.00	81.50	1556.98	0.81	0.95	1.58	1.84	58.82	0.24	0.00	100.0	Green	01/20/15	14:40	537 (gpm)
9	1,651.00	1.40	79.60	1650.95	0.96	1.28	3.52	3.74	69.97	0.43	0.00	102.0	Green	01/20/15	15:41	547 (gpm)
10	1,746.00	1.20	90.30	1745.93	0.98	1.49	5.65	5.84	75.27	0.33	0.00	104.0	Green	01/20/15	16:30	547 (gpm)
11	1,840.00	1.20	76.40	1839.91	1.03	1.71	7.59	7.78	77.29	0.31	0.00	106.0	Green	01/20/15	17:27	547 (gpm)
12	1,935.00	1.10	82.40	1934.89	1.22	2.07	9.46	9.69	77.68	0.16	0.00	108.0	Green	01/20/15	18:20	547 (gpm)
13	2,028.00	1.00	82.70	2027.87	1.29	2.29	11.15	11.39	78.41	0.11	0.00	109.0	Green	01/20/15	19:15	547 (gpm)
14	2,122.00	1.00	65.40	2121.86	1.59	2.73	12.71	13.00	77.87	0.32	0.00	111.0	Green	01/20/15	19:58	547 (gpm)
15	2,216.00	1.10	70.10	2215.84	2.10	3.38	14.31	14.70	76.70	0.14	0.00	113.0	Green	01/20/15	20:46	547 (gpm)
16	2,309.00	1.00	78.90	2308.83	2.41	3.84	15.94	16.40	76.45	0.20	0.00	115.0	Green	01/20/15	21:55	547 (gpm)
17	2,404.00	1.00	82.60	2403.81	2.53	4.11	17.58	18.05	76.84	0.07	0.00	115.0	Green	01/20/15	22:55	547 (gpm)
18	2,495.00	0.80	76.50	2494.80	2.66	4.36	18.98	19.48	77.07	0.24	0.00	118.0	Green	01/21/15	0:08	547 (gpm)
19	2,588.00	1.00	61.30	2587.79	3.08	4.90	20.33	20.91	76.45	0.33	0.00	118.0	Green	01/21/15	1:00	547 (gpm)
20	2,682.00	1.00	50.40	2681.78	3.87	5.82	21.68	22.45	74.98	0.20	0.00	120.0	Green	01/21/15	2:00	547 (gpm)
21	2,776.00	0.80	27.50	2775.77	4.89	6.92	22.61	23.65	72.98	0.43	0.00	122.0	Green	01/21/15	3:18	547 (gpm)
22	2,872.00	1.00	24.30	2871.75	6.18	8.28	23.27	24.70	70.41	0.21	0.00	122.0	Red	01/21/15	4:29	547 (gpm)
23	2,966.00	1.00	45.90	2965.74	7.41	9.60	24.19	26.03	68.36	0.40	0.00	98.0	Green	01/21/15	7:52	547 (gpm)
24	3,060.00	0.90	53.60	3059.73	8.31	10.61	25.38	27.51	67.32	0.17	0.00	94.0	Green	01/21/15	7:57	547 (gpm)
25	3,154.00	1.00	41.70	3153.72	9.26	11.66	26.52	28.97	66.27	0.23	0.00	88.0	Green	01/21/15	8:55	547 (gpm)
26	3,249.00	0.90	28.50	3248.70	10.45	12.93	27.42	30.32	64.75	0.25	0.00	91.0	Green	01/21/15	9:35	547 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
 Well: Chain Land 3509 11-z
 Field/Block: Mississippi Lime
 Co./Parish: Harper County
 State: Kansas

PGS Job #: LKS6116715
 MWD Operator: Cody Sargent
 Directional Driller: Jared Gooch
 Date of First Survey: January 29, 2015
 Date of Last Survey: February 2, 2015



Total Correction: 4.28 East Grid

Vertical Section Plane: 354.91 Nominal Dip Angle: 65.04 Magnetic Field Strength: .515

	Measured		Coordinates				Closure			MTR YLD	Temp (°F)	Vib/Shk				
	Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle			DLS	Color	Date	Time	Flow Rate
27	3,342.00	1.00	356.20	3341.69	11.87	14.38	27.72	31.23	62.57	0.58	0.00	97.0	Green	01/21/15	10:23	547 (gpm)
28	3,436.00	1.20	332.70	3435.67	13.60	16.08	27.21	31.61	59.43	0.52	0.00	100.0	Green	01/21/15	11:11	547 (gpm)
29	3,532.00	1.20	327.00	3531.65	15.42	17.81	26.21	31.69	55.79	0.12	0.00	104.0	Green	01/21/15	12:05	547 (gpm)
30	3,625.00	1.30	333.80	3624.63	17.26	19.58	25.21	31.92	52.17	0.19	0.00	108.0	Green	01/21/15	13:25	547 (gpm)
31	3,720.00	1.60	334.80	3719.60	19.51	21.74	24.17	32.51	48.02	0.32	0.00	109.0	Green	01/21/15	14:34	547 (gpm)
32	3,815.00	1.20	344.30	3814.57	21.74	23.90	23.33	33.40	44.31	0.49	0.00	113.0	Green	01/21/15	15:35	547 (gpm)
33	3,911.00	0.90	349.50	3910.55	23.48	25.61	22.93	34.37	41.83	0.33	0.00	117.0	Green	01/21/15	17:16	547 (gpm)
34	3,943.00	1.00	337.60	3942.55	23.99	26.12	22.77	34.65	41.09	0.69	0.00	118.0	Green	01/21/15	18:12	547 (gpm)
35	3,974.00	1.80	335.70	3973.54	24.71	26.81	22.47	34.98	39.97	2.58	0.00	118.0	Green	01/21/15	20:14	547 (gpm)
36	4,005.00	4.90	353.40	4004.48	26.49	28.57	22.12	36.13	37.75	10.43	10.40	118.0	Green	01/21/15	21:53	547 (gpm)
37	4,036.00	7.50	358.10	4035.30	29.84	31.91	21.90	38.70	34.46	8.54	8.54	120.0	Green	01/21/15	23:39	547 (gpm)
38	4,067.00	10.10	352.40	4065.93	34.58	36.62	21.47	42.45	30.38	8.84	8.84	122.0	Green	01/22/15	0:30	547 (gpm)
39	4,099.00	12.80	346.80	4097.30	40.89	42.86	20.29	47.42	25.33	9.12	12.80	122.0	Green	01/22/15	1:20	547 (gpm)
40	4,130.00	16.40	346.10	4127.29	48.62	50.45	18.45	53.72	20.09	11.63	13.30	122.0	Green	01/22/15	2:25	547 (gpm)
41	4,162.00	19.00	350.20	4157.77	58.27	59.97	16.48	62.20	15.37	9.01	9.01	122.0	Green	01/22/15	4:11	547 (gpm)
42	4,193.00	21.60	351.20	4186.85	69.00	70.59	14.75	72.11	11.80	8.46	13.10	122.0	Green	01/22/15	6:06	547 (gpm)
43	4,225.00	24.50	351.10	4216.29	81.50	82.96	12.82	83.95	8.79	9.06	14.40	122.0	Green	01/22/15	8:10	488 (gpm)
44	4,257.00	27.80	352.40	4245.01	95.58	96.92	10.81	97.52	6.36	10.47	12.40	122.0	Green	01/22/15	9:45	488 (gpm)
45	4,289.00	30.60	352.70	4272.94	111.18	112.40	8.79	112.74	4.47	8.76	14.00	124.0	Green	01/22/15	11:33	488 (gpm)
46	4,321.00	33.40	352.60	4300.07	128.12	129.21	6.62	129.38	2.93	8.75	18.60	124.0	Green	01/22/15	13:29	488 (gpm)
47	4,352.00	35.80	353.00	4325.59	145.71	146.68	4.41	146.74	1.72	7.78	16.00	124.0	Green	01/22/15	15:16	488 (gpm)
48	4,383.00	36.90	352.90	4350.56	164.07	164.91	2.16	164.93	0.75	3.55	7.33	124.0	Green	01/22/15	16:35	488 (gpm)
49	4,414.00	38.50	353.60	4375.08	183.02	183.74	-0.07	183.74	359.98	5.34	14.50	122.0	Yellow	01/22/15	18:40	488 (gpm)
50	4,446.00	40.50	353.10	4399.77	203.37	203.95	-2.43	203.97	359.32	6.33	18.40	124.0	Green	01/22/15	20:16	488 (gpm)
51	4,478.00	42.30	354.20	4423.78	224.52	224.99	-4.77	225.04	358.79	6.07	12.10	124.0	Green	01/22/15	21:25	488 (gpm)
52	4,510.00	43.70	354.90	4447.18	246.34	246.71	-6.84	246.80	358.41	4.62	9.80	124.0	Green	01/22/15	22:53	488 (gpm)
53	4,542.00	45.60	355.00	4469.94	268.83	269.11	-8.82	269.25	358.12	5.94	19.00	126.0	Green	01/23/15	2:37	488 (gpm)
54	4,573.00	47.90	354.40	4491.18	291.41	291.59	-10.90	291.80	357.86	7.55	13.70	126.0	Green	01/23/15	4:12	488 (gpm)
55	4,604.00	49.60	354.00	4511.62	314.71	314.78	-13.26	315.06	357.59	5.57	9.08	122.0	Green	01/23/15	5:52	488 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
 Well: Chain Land 3509 11-4
 Field/Block: Mississippi Lime
 Co./Parish: Harper County
 State: Kansas

PGS Job #: LKS6116715
 MWD Operator: Cody Sargent
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Total Correction: 4.28 East Grid

Vertical Section Plane: 354.91 Nominal Dip Angle: 65.04 Magnetic Field Strength: .515

	Measured		Coordinates					Closure			Vib/Shk					
	Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS	MTR YLD	Temp (°F)	Color	Date	Time	Flow Rate
56	4,636.00	51.30	353.60	4532.00	339.38	339.31	-15.93	339.68	357.31	5.40	18.00	124.0	Green	01/23/15	7:52	488 (gpm)
57	4,666.00	53.20	352.80	4550.36	363.09	362.86	-18.74	363.34	357.04	6.68	14.30	124.0	Green	01/23/15	9:35	488 (gpm)
58	4,698.00	55.80	353.40	4568.95	389.13	388.72	-21.86	389.33	356.78	8.27	13.20	124.0	Green	01/23/15	10:54	488 (gpm)
59	4,730.00	58.10	354.10	4586.40	415.94	415.38	-24.78	416.12	356.59	7.42	11.80	126.0	Green	01/23/15	12:31	488 (gpm)
60	4,761.00	60.50	355.50	4602.22	442.59	441.92	-27.19	442.76	356.48	8.66	14.00	127.0	Green	01/23/15	14:00	488 (gpm)
61	4,793.00	63.60	355.50	4617.22	470.86	470.10	-29.41	471.02	356.42	9.69	15.50	127.0	Green	01/23/15	14:46	488 (gpm)
62	4,824.00	64.80	355.30	4630.71	498.76	497.92	-31.65	498.93	356.36	3.91	13.40	129.0	Green	01/23/15	15:42	488 (gpm)
63	4,855.00	64.60	354.80	4643.96	526.79	525.84	-34.07	526.94	356.29	1.59	0.00	131.0	Green	01/23/15	16:50	488 (gpm)
64	4,886.00	64.10	354.50	4657.38	554.74	553.67	-36.67	554.88	356.21	1.83	0.00	129.0	Green	01/23/15	17:38	488 (gpm)
65	4,918.00	64.00	354.50	4671.38	583.51	582.31	-39.43	583.64	356.13	0.31	0.00	129.0	Green	01/23/15	18:16	488 (gpm)
66	4,949.00	63.80	355.00	4685.02	611.35	610.03	-41.98	611.47	356.06	1.59	0.00	129.0	Green	01/23/15	19:06	488 (gpm)
67	4,981.00	63.60	355.00	4699.20	640.03	638.61	-44.48	640.15	356.02	0.63	0.00	129.0	Green	01/23/15	19:50	488 (gpm)
68	5,012.00	63.50	355.20	4713.01	667.79	666.26	-46.85	667.91	355.98	0.66	0.00	131.0	Green	01/23/15	21:30	488 (gpm)
69	5,043.00	63.70	355.10	4726.79	695.56	693.93	-49.20	695.67	355.94	0.71	0.00	133.0	Green	01/24/15	1:01	488 (gpm)
70	5,055.00	64.10	355.30	4732.07	706.33	704.67	-50.10	706.45	355.93	3.65	0.00	135.0	Green	01/24/15	4:28	488 (gpm)
71	5,074.00	66.20	355.00	4740.05	723.57	721.84	-51.56	723.68	355.91	11.15	14.00	135.0	Green	01/24/15	6:15	488 (gpm)
72	5,106.00	69.70	355.50	4752.06	753.23	751.40	-54.01	753.34	355.89	11.03	13.90	131.0	Green	01/24/15	18:12	488 (gpm)
73	5,138.00	73.00	355.60	4762.30	783.54	781.62	-56.36	783.65	355.88	10.32	12.20	135.0	Green	01/24/15	20:15	488 (gpm)
74	5,170.00	76.00	355.50	4770.85	814.37	812.36	-58.75	814.48	355.86	9.38	11.50	140.0	Green	01/25/15	0:05	488 (gpm)
75	5,246.00	81.80	355.90	4785.47	888.91	886.70	-64.34	889.03	355.85	7.65	12.00	133.0	Yellow	01/26/15	16:22	244 (gpm)
76	5,278.00	84.90	356.00	4789.18	920.69	918.40	-66.59	920.81	355.85	9.69	9.69	133.0	Yellow	01/26/15	16:34	244 (gpm)
77	5,293.00	86.70	355.90	4790.28	935.64	933.32	-67.64	935.77	355.85	12.02	12.00	131.0	Yellow	01/26/15	17:20	244 (gpm)
78	5,310.00	87.20	355.80	4791.18	952.62	950.25	-68.87	952.75	355.85	3.00	8.80	131.0	Yellow	01/26/15	17:30	244 (gpm)
79	5,325.00	87.60	355.40	4791.86	967.60	965.19	-70.02	967.73	355.85	3.77	0.00	127.0	Green	01/26/15	18:05	244 (gpm)
80	5,341.00	88.40	355.40	4792.42	983.59	981.13	-71.30	983.72	355.84	5.00	0.00	127.0	Green	01/26/15	18:15	244 (gpm)
81	5,373.00	89.80	355.00	4792.92	1,015.58	1,013.01	-73.98	1,015.71	355.82	4.55	0.00	127.0	Green	01/26/15	18:45	244 (gpm)
82	5,404.00	90.60	354.50	4792.81	1,046.58	1,043.88	-76.82	1,046.71	355.79	3.04	0.00	127.0	Green	01/26/15	19:20	244 (gpm)
83	5,436.00	90.40	354.70	4792.53	1,078.58	1,075.74	-79.83	1,078.70	355.76	0.88	0.00	127.0	Green	01/26/15	19:35	244 (gpm)
84	5,467.00	90.30	355.00	4792.34	1,109.58	1,106.61	-82.61	1,109.69	355.73	1.02	0.00	127.0	Green	01/26/15	20:10	244 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
 Well: Chain Land 3509 11-2
 Field/Block: Mississippi Lime
 Co./Parish: Harper County
 State: Kansas

PGS Job #: LKS6116715
 MWD Operator: Cody Sargent
 Directional Driller: Jared Gooch
 Date of First Survey: January 29, 2015
 Date of Last Survey: February 2, 2015



Total Correction: 4.28 East Grid

Vertical Section Plane: 354.91 Nominal Dip Angle: 65.04 Magnetic Field Strength: .515

	Measured			Coordinates				Closure			MTR YLD	Temp (°F)	Vib/Shk			
	Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS			Color	Date	Time	Flow Rate
85	5,499.00	90.50	354.80	4792.12	1,141.58	1,138.49	-85.45	1,141.69	355.71	0.88	0.00	127.0	Green	01/26/15	20:35	244 (gpm)
86	5,530.00	91.00	354.90	4791.72	1,172.58	1,169.36	-88.24	1,172.68	355.68	1.64	0.00	127.0	Green	01/26/15	21:00	244 (gpm)
87	5,562.00	91.30	354.90	4791.07	1,204.57	1,201.23	-91.08	1,204.67	355.66	0.94	0.00	127.0	Green	01/26/15	21:20	244 (gpm)
88	5,625.00	91.60	355.00	4789.48	1,267.55	1,263.96	-96.63	1,267.65	355.63	0.50	0.00	127.0	Green	01/26/15	22:10	244 (gpm)
89	5,689.00	91.80	355.10	4787.58	1,331.52	1,327.69	-102.14	1,331.62	355.60	0.35	0.00	127.0	Green	01/26/15	23:15	244 (gpm)
90	5,752.00	91.80	354.80	4785.60	1,394.49	1,390.42	-107.69	1,394.58	355.57	0.48	0.00	127.0	Green	01/27/15	0:35	244 (gpm)
91	5,812.00	92.10	354.90	4783.56	1,454.46	1,450.14	-113.07	1,454.54	355.54	0.53	0.00	100.0	Green	01/27/15	1:45	244 (gpm)
92	5,873.00	92.20	354.30	4781.27	1,515.41	1,510.83	-118.81	1,515.49	355.50	1.00	0.00	109.0	Green	01/27/15	3:30	244 (gpm)
93	5,941.00	91.70	354.00	4778.96	1,583.37	1,578.43	-125.73	1,583.43	355.45	0.86	0.00	84.0		01/30/15	1:54	191 (gpm)
94	6,014.00	90.30	352.60	4777.68	1,656.32	1,650.92	-134.25	1,656.37	355.35	2.71	0.00	84.0		01/30/15	5:30	191 (gpm)
95	6,060.00	90.30	353.10	4777.44	1,702.29	1,696.56	-139.97	1,702.33	355.28	1.09	0.00	84.0		01/30/15	7:00	220 (gpm)
96	6,121.00	90.20	352.70	4777.18	1,763.25	1,757.09	-147.51	1,763.28	355.20	0.68	0.00	84.0		01/30/15	8:10	220 (gpm)
97	6,181.00	90.30	353.10	4776.91	1,823.22	1,816.63	-154.93	1,823.23	355.13	0.69	0.00	86.0		01/30/15	9:25	220 (gpm)
98	6,273.00	91.10	354.20	4775.79	1,915.18	1,908.06	-165.10	1,915.19	355.05	1.48	0.00	86.0		01/30/15	11:15	220 (gpm)
99	6,362.00	91.80	354.80	4773.54	2,004.15	1,996.62	-173.63	2,004.16	355.03	1.04	0.00	90.0		01/30/15	13:20	220 (gpm)
100	6,453.00	90.70	354.00	4771.55	2,095.13	2,087.16	-182.51	2,095.13	355.00	1.49	0.00	88.0		01/30/15	15:26	220 (gpm)
101	6,544.00	90.50	354.20	4770.60	2,186.11	2,177.68	-191.86	2,186.11	354.96	0.31	0.00	90.5		01/30/15	17:28	220 (gpm)
102	6,634.00	90.90	353.90	4769.50	2,276.09	2,267.18	-201.19	2,276.09	354.93	0.56	0.00	90.5		01/30/15	20:00	220 (gpm)
103	6,664.00	90.90	354.60	4769.03	2,306.09	2,297.03	-204.20	2,306.09	354.92	2.33	0.00	92.0		01/30/15	21:24	220 (gpm)
104	6,695.00	91.60	354.40	4768.35	2,337.08	2,327.88	-207.17	2,337.08	354.91	2.35	0.00	93.0		01/30/15	22:17	220 (gpm)
105	6,725.00	91.70	353.50	4767.49	2,367.06	2,357.70	-210.33	2,367.06	354.90	3.02	0.00	93.0		01/30/15	23:05	220 (gpm)
106	6,816.00	91.90	354.00	4764.63	2,458.00	2,448.11	-220.23	2,458.00	354.86	0.59	0.00	97.0		01/31/15	0:35	220 (gpm)
107	6,907.00	92.10	354.10	4761.46	2,548.93	2,538.57	-229.66	2,548.94	354.83	0.25	0.00	99.5		01/31/15	2:26	220 (gpm)
108	6,998.00	91.40	355.50	4758.68	2,639.89	2,629.15	-237.90	2,639.89	354.83	1.72	0.00	102.0		01/31/15	4:02	220 (gpm)
109	7,088.00	91.40	355.80	4756.48	2,729.85	2,718.86	-244.73	2,729.85	354.86	0.33	0.00	104.0		01/31/15	5:30	220 (gpm)
110	7,179.00	91.50	356.30	4754.17	2,820.81	2,809.62	-250.99	2,820.81	354.90	0.56	0.00	108.0		01/31/15	6:30	220 (gpm)
111	7,269.00	91.10	356.20	4752.13	2,910.76	2,899.40	-256.88	2,910.76	354.94	0.46	0.00	108.0		01/31/15	7:55	220 (gpm)
112	7,360.00	91.40	354.90	4750.15	3,001.73	2,990.10	-263.94	3,001.73	354.96	1.47	0.00	110.0		01/31/15	9:17	220 (gpm)
113	7,450.00	91.70	355.00	4747.71	3,091.70	3,079.72	-271.86	3,091.70	354.96	0.35	0.00	79.0		02/01/15	0:54	220 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
Well: Chain Land 3509 11-2
Field/Block: Mississippi Lime
Co./Parish: Harper County
State: Kansas

PGS Job #: LKS6116715
MWD Operator: Cody Sargent
Directional Driller: Jared Gooch
Date of First Survey: January 29, 2015
Date of Last Survey: February 2, 2015



Total Correction: 4.28 East Grid

Vertical Section Plane: 354.91 Nominal Dip Angle: 65.04 Magnetic Field Strength: .515

	<i>Measured</i>			<i>Coordinates</i>				<i>Closure</i>			<i>Vib/Shk</i>					
	<i>Depth</i>	<i>Inc.</i>	<i>Azm.</i>	<i>T.V.D.</i>	<i>Ver. Sect.</i>	<i>+N / -S</i>	<i>+E / -W</i>	<i>Dist.</i>	<i>Angle</i>	<i>DLS</i>	<i>MTR YLD</i>	<i>Temp (°F)</i>	<i>Color</i>	<i>Date</i>	<i>Time</i>	<i>Flow Rate</i>
114	7,541.00	91.30	355.60	4745.33	3,182.66	3,170.38	-279.31	3,182.66	354.97	0.79	0.00	106.0		02/01/15	1:51	220 (gpm)
115	7,635.00	90.40	354.70	4743.94	3,276.65	3,264.03	-287.26	3,276.65	354.97	1.35	0.00	110.0		02/01/15	2:52	220 (gpm)
116	7,730.00	91.00	355.30	4742.78	3,371.64	3,358.67	-295.53	3,371.64	354.97	0.89	0.00	113.0		02/01/15	3:33	220 (gpm)
117	7,824.00	91.00	355.10	4741.14	3,465.62	3,452.32	-303.40	3,465.63	354.98	0.21	0.00	110.0		02/01/15	4:30	220 (gpm)
118	7,919.00	91.30	356.20	4739.23	3,560.60	3,547.03	-310.60	3,560.60	355.00	1.20	0.00	113.0		02/01/15	5:30	220 (gpm)
119	8,013.00	91.90	356.50	4736.60	3,654.53	3,640.80	-316.58	3,654.54	355.03	0.71	0.00	110.0		02/01/15	6:48	220 (gpm)
120	8,108.00	89.10	354.80	4735.77	3,749.50	3,735.51	-323.79	3,749.52	355.05	3.45	0.00	113.0		02/01/15	9:00	210 (gpm)
121	8,201.00	89.40	356.20	4736.99	3,842.49	3,828.21	-331.09	3,842.50	355.06	1.54	0.00	115.0		02/01/15	11:16	210 (gpm)
122	8,297.00	90.30	354.70	4737.24	3,938.48	3,923.91	-338.70	3,938.50	355.07	1.82	0.00	117.0		02/01/15	13:00	210 (gpm)
123	8,391.00	91.20	355.20	4736.01	4,032.47	4,017.53	-346.97	4,032.49	355.06	1.10	0.00	122.0		02/01/15	15:18	210 (gpm)
124	8,486.00	91.60	354.60	4733.69	4,127.44	4,112.13	-355.42	4,127.46	355.06	0.76	0.00	122.0		02/01/15	16:30	210 (gpm)
125	8,580.00	91.80	354.40	4730.90	4,221.40	4,205.65	-364.42	4,221.41	355.05	0.30	0.00	122.0		02/01/15	18:07	210 (gpm)
126	8,675.00	91.00	355.00	4728.58	4,316.37	4,300.22	-373.19	4,316.38	355.04	1.05	0.00	119.0		02/01/15	19:29	210 (gpm)
127	8,770.00	91.00	355.60	4726.92	4,411.35	4,394.88	-380.98	4,411.36	355.05	0.63	0.00	119.0		02/01/15	21:23	210 (gpm)
128	8,865.00	91.80	356.00	4724.60	4,506.31	4,489.60	-387.93	4,506.33	355.06	0.94	0.00	119.0		02/02/15	4:12	210 (gpm)
129	8,960.00	90.10	356.40	4723.03	4,601.27	4,584.37	-394.23	4,601.29	355.09	1.84	0.00	119.0		02/02/15	6:10	210 (gpm)
130	9,054.00	90.40	356.10	4722.62	4,695.24	4,678.17	-400.38	4,695.27	355.11	0.45	0.00	122.0		02/02/15	8:06	210 (gpm)
131	9,148.00	90.70	356.50	4721.72	4,789.21	4,771.97	-406.44	4,789.25	355.13	0.53	0.00	126.0		02/02/15	10:22	210 (gpm)
132	9,243.00	91.90	356.60	4719.56	4,884.15	4,866.77	-412.16	4,884.19	355.16	1.27	0.00	124.0		02/02/15	12:42	210 (gpm)
133	9,337.00	91.90	354.10	4716.44	4,978.08	4,960.40	-419.77	4,978.13	355.16	2.66	0.00	126.0		02/02/15	15:25	210 (gpm)
134	9,432.00	92.50	356.60	4712.80	5,073.00	5,055.01	-427.47	5,073.05	355.17	2.70	0.00	133.0		02/02/15	18:14	210 (gpm)
135	9,462.00	91.80	355.90	4711.67	5,102.97	5,084.93	-429.43	5,103.03	355.17	3.30	0.00	133.0		02/02/15	19:10	210 (gpm)
TD	9,514.00	91.80	355.90	4710.04	5,154.94	5,136.77	-433.14	5,155.00	355.18	0.00						

MWD SURVEYS

Customer: Tapstone Energy
 Well: Chain Land 3509 11-4
 Field/Block: Mississippi Lime
 Co./Parish: Harper County
 State: Kansas

PGS Job #: LKS6116715
 MWD Operator: Cody Sargent
 Directional Driller: Jared Gooch
 Date of First Survey: January 29, 2015
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Total Correction: 4.28 East Grid

Vertical Section Plane: 354.91 Nominal Dip Angle: 65.04 Magnetic Field Strength: .515

Measured		Coordinates				Closure			Vib/Shk						
Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS	MTR YLD	Temp (°F)	Color	Date	Time	Flow Rate

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<i>Depth</i>	<i>Inc.</i>	<i>Azm.</i>	<i>T.V.D.</i>	<i>Ver. Sect.</i>	<i>+N / -S</i>	<i>+E / -W</i>	<i>Dist.</i>	<i>Angle</i>	<i>DLS</i>	<i>MTR YLD</i>	<i>Temp (°F)</i>	<i>Color</i>	<i>Date</i>	<i>Time</i>	<i>Flow Rate</i>

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Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS	MTR YLD	Temp (°F)	Color	Date	Time	Flow Rate

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<i>Depth</i>	<i>Inc.</i>	<i>Azm.</i>	<i>T.V.D.</i>	<i>Ver. Sect.</i>	<i>+N / -S</i>	<i>+E / -W</i>	<i>Dist.</i>	<i>Angle</i>	<i>DLS</i>	<i>MTR YLD</i>	<i>Temp (°F)</i>	<i>Color</i>	<i>Date</i>	<i>Time</i>	<i>Flow Rate</i>

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 Well: Chain Land 3509 11-4
 Field/Block: Mississippi Lime
 Co./Parish: Harper County
 State: Kansas

PGS Job #: LKS6116715
 MWD Operator: Cody Sargent
 Directional Driller: Jared Gooch
 Date of First Survey: January 29, 2015
 Date of Last Survey: February 2, 2015



Total Correction: 4.28 East Grid

Vertical Section Plane: 354.91 Nominal Dip Angle: 65.04 Magnetic Field Strength: .515

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TOPOGRAPHIC LAND SURVEYORS

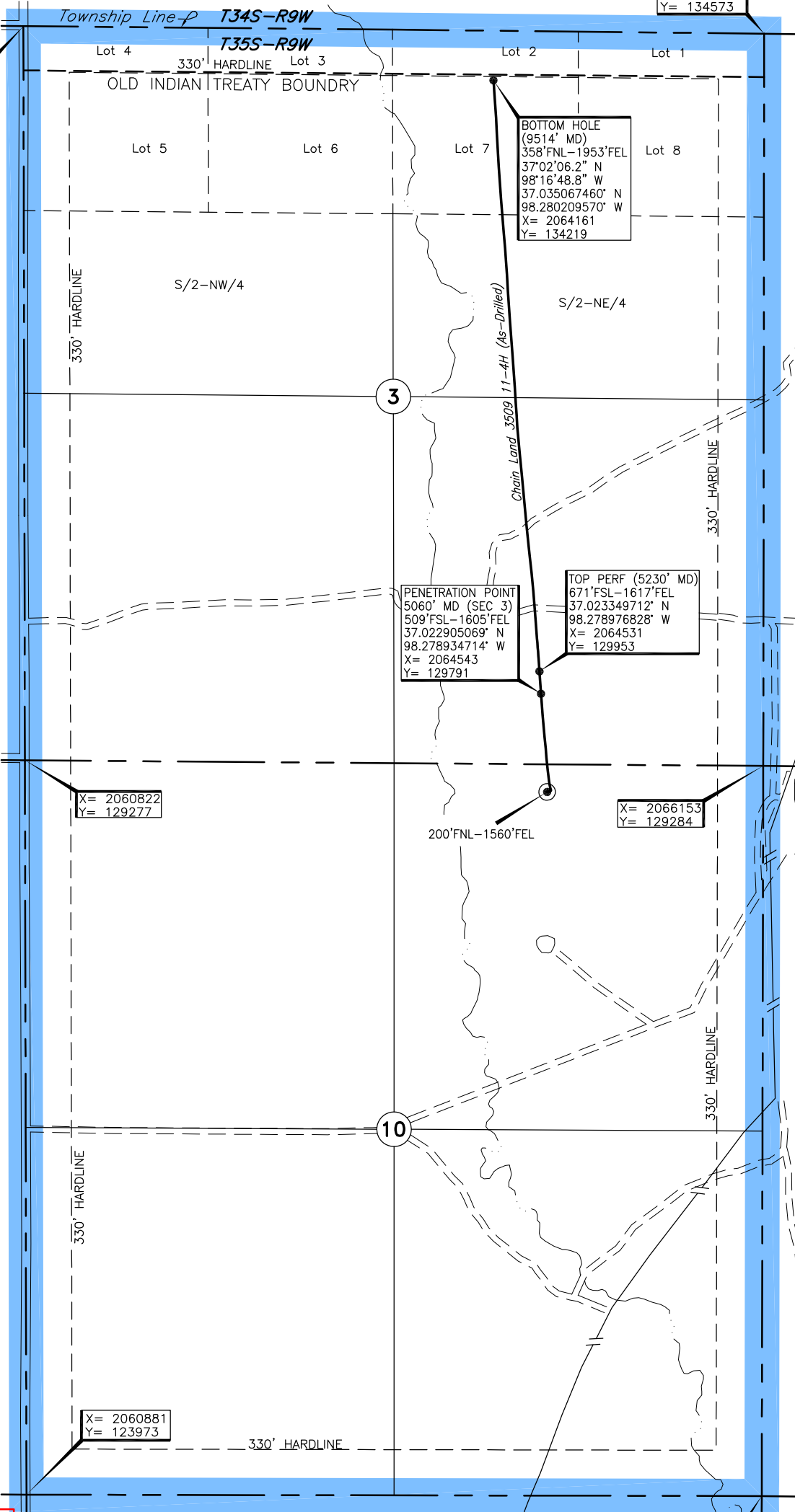
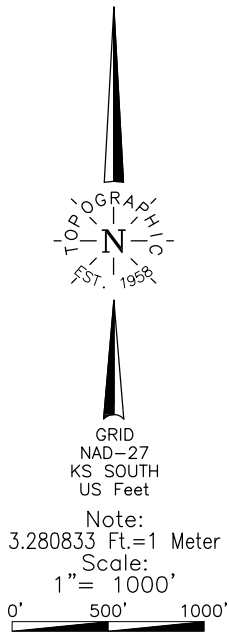
6709 NORTH CLASSEN BLVD., OKLA. CITY, OKLA. 73116 * LOCAL (405) 843-4847 * OUT OF STATE (800) 654-3219
 Certificate of Authorization No. LS-99, Exp. Dec. 31, 2015

HARPER

County, Kansas

200'FNL - 1560'FEL Section 10 Township 35S Range 9W P.M.

X= 2066112
Y= 134573



Operator: TAPSTONE ENERGY
 Lease Name: CHAIN LAND 3509
 Topography & Vegetation: Loc. fell in sandy tall grass pasture
 Well No.: 11-4H
 ELEVATION: 1243' Gr. at Stake

Good Drill Site? Yes
 Reference Stakes or Alternate Location Stakes Set None

Best Accessibility to Location From West off county road
 Distance & Direction From Anthony KS, go ±14.0 mi. West, then ±9. mi. South,
then ±1.0 mi. East through Section 10 to the NE Cor. of Sec. 10-T35S-R9W

A boundary survey of the said section(s) shown hereon was not performed per the request of the operator shown hereon.

240164 Date of Drawing: Feb. 06, 2015
 Invoice # 227628A Date Staked: Jul. 23, 2014 JP

FINAL AS-DRILLED PLAT

AS-DRILLED INFORMATION
 FURNISHED BY TAPSTONE ENERGY

This information was gathered with a GPS receiver with ±1 foot Horiz./Vert. accuracy.

DATUM: NAD-27
 LAT: 37°01'15.4"N
 LONG: 98°16'43.6"W
 LAT: 37.020957042° N
 LONG: 98.278767570° W
 STATE PLANE
 COORDINATES: (US Feet)
 ZONE: KS SOUTH
 X: 2064594
 Y: 129082

X= 2066189
Y= 124010

HALLIBURTON

iCem[®] Service

HALLIBURTON ENERGY SERVICES

For:

Date: Monday, January 19, 2015

TAPSTONE CHAINLAND 3509 11-4H

Sincerely,

**CHANCE CORDELL
SERVICE SUPERVISOR III**

Warning Disclaimer

Although the information contained in this report is based on sound engineering practices, the copyright owner(s) does (do) not accept any responsibility whatsoever, in negligence or otherwise, for any loss or damage arising from the possession or use of the report whether in terms of correctness or otherwise. The application, therefore, by the user of this report or any part thereof, is solely at the user's own risk.

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1.0 Job Design

2.0 Temperature Modeling

3.0 Real-Time Job Summary

3.1 Stage Summary - Liquid Volume, Density, & Design Shutdown

Stage No.	Design Vol. (bbl)	Actual Vol. (bbl)	Design Density (ppg)	Average Density (ppg)	Minimum Density (ppg)	Maximum Density (ppg)
0	0	0		0.00	0.00	0.00

3.2 Stage Summary - Pump Pressure & ECD

Stage No.	Avg. Pump Pressure (psi)	Min. Pump Pressure (psi)	Max. Pump Pressure (psi)	Avg. ECD (psi/ft)	Min. ECD (psi/ft)	Max. ECD (psi/ft)
0	0.00	0.00	0.00	0.000	0.000	0.000

3.3 Stage Summary - Pump Rate & Nitrogen Rate

Stage No.	Design Average Pump Rate (bbl/min)	Average Pump Rate (bbl/min)	Min. Pump Rate (bbl/min)	Max. Pump Rate (bbl/min)	Design Average Nitrogen Rate (scfm)	Average Nitrogen Rate (scfm)	Min. Nitrogen Rate (scfm)	Max. Nitrogen Rate (scfm)
0	0	0.00	0.00	0.00	0	0	0	0

3.4 Shutdown Summary

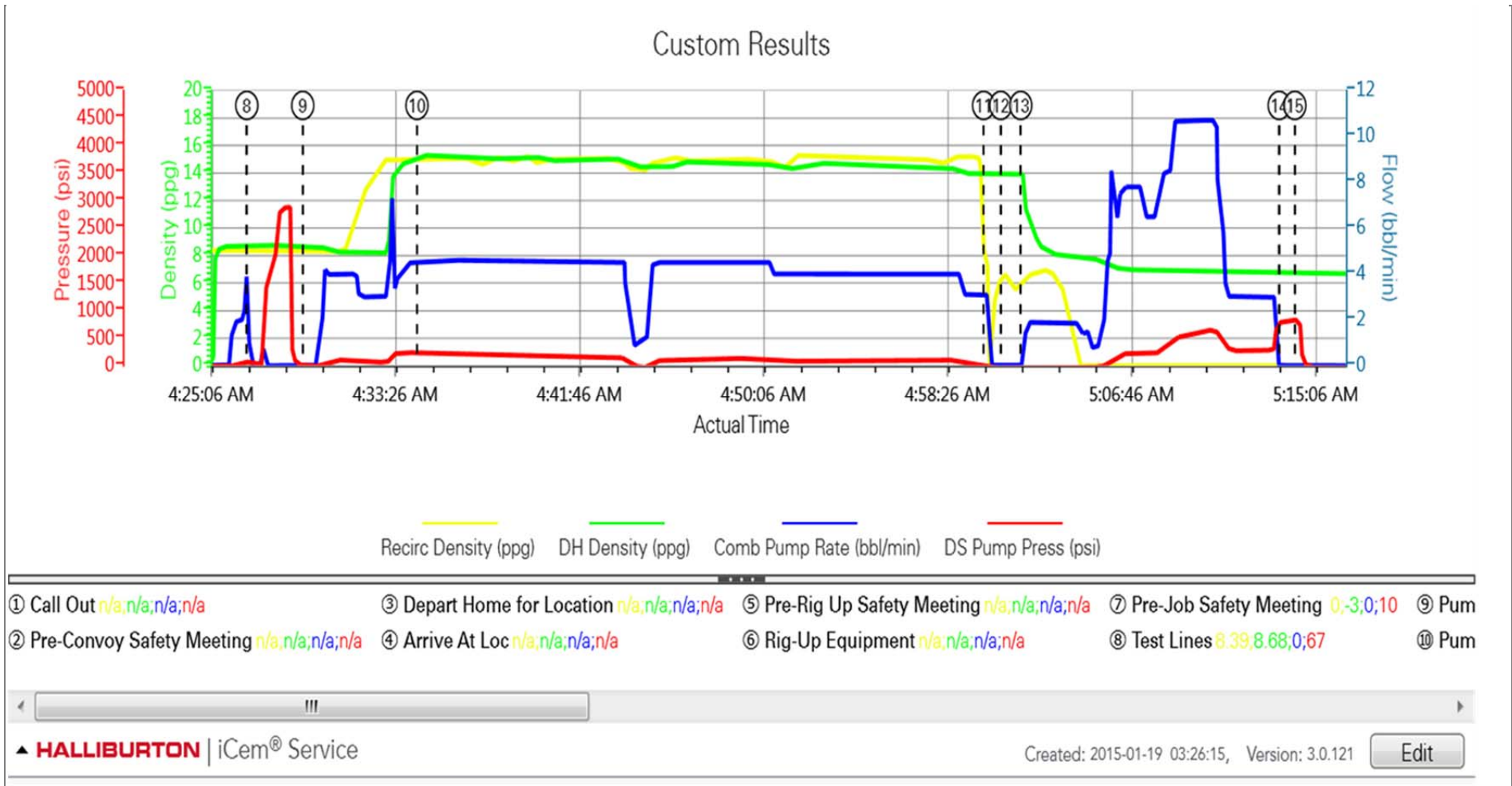
3.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Recirc Density (ppg)	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Comment
Event	1	Call Out	Call Out	1/18/2015	16:30:00	USER					CREW CALLED OUT. 1 PUMP CREW, 2 BULK TRUCKS
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/18/2015	18:00:00	USER					DISCUSS DRIVING DIRECTIONS AND USING SAFE DRIVING TECHNIQUES
Event	3	Depart Home for Location	Depart Home for Location	1/18/2015	18:30:00	USER					LEAVE YARD
Event	4	Arrive At Loc	Arrive At Loc	1/18/2015	21:00:00	USER					ARRIVE AT LOCATION. REQUESTED O/L AT 2230
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	1/19/2015	01:00:00	USER					DISCUSS RIGGING UP SAFELY
Event	6	Rig-Up Equipment	Rig-Up Equipment	1/19/2015	01:30:00	USER					RIG UP CEMENT EQUIPMENT.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	1/19/2015	03:30:00	USER	0.00	-2.96	0.00	10.00	DISCUSS HES SAFETY STANDARDS AND JOB PROCEDURES WITH HES, CUSTOMER REPS, AND RIG CREW
Event	8	Test Lines	Test Lines	1/19/2015	04:26:51	COM7	8.39	8.68	0.00	67.00	TEST LINES TO 3000. GOOD TEST NO LEAKS.
Event	9	Pump Spacer 1	Pump Spacer 1	1/19/2015	04:29:23	COM7	8.38	8.57	0.00	-5.00	PUMP 10 BBL H2O
Event	10	Pump Cement	Pump Cement	1/19/2015	04:34:33	COM7	15.09	15.13	4.40	237.00	PUMP 115 BBL CEMENT AT 15 PPG
Event	11	Shutdown	Shutdown	1/19/2015	05:00:13	USER	7.29	14.04	3.10	35.00	SHUTDOWN
Event	12	Drop Top Plug	Drop Top Plug	1/19/2015	05:00:59	USER	6.70	13.89	0.00	-51.00	HES PLUG
Event	13	Pump Displacement	Pump Displacement	1/19/2015	05:01:53	COM7	6.19	13.85	0.80	-49.00	PUMP 60 BBL H2O DISPLACEMENT.
Event	14	Bump Plug	Bump Plug	1/19/2015	05:13:35	COM7					BUMP PLUG, WENT 500 PSI OVER. 42 BBL CEMENT BACK TO SURFACE
Event	15	Check Floats	Check Floats	1/19/2015	05:14:18	USER	0.00	6.67	0.00	832.00	FLOATS HELD 1/2 BBL BACK
Event	16	Pre-Rig Down Safety	Pre-Rig Down Safety	1/19/2015	05:30:00	USER					DISCUSS MAKING SURE

		Meeting	Meeting				
Event	17	Rig-Down Equipment	Rig-Down Equipment	1/19/2015	06:00:00	USER	PRESSURE IS OFF AND ALL WATER SOURCES SHUT OFF
							RIG DOWN CEMENT EQUIPMENT.
Event	18	Safety Meeting - Departing Location	Safety Meeting - Departing Location	1/19/2015	07:30:00	USER	DISCUSS LEAVING IN CONVOY, AND CALLING DISPATCH TO INFORM OF JOB COMPLETION
Event	19	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	1/19/2015	08:00:00	USER	LEAVE LOCATION.

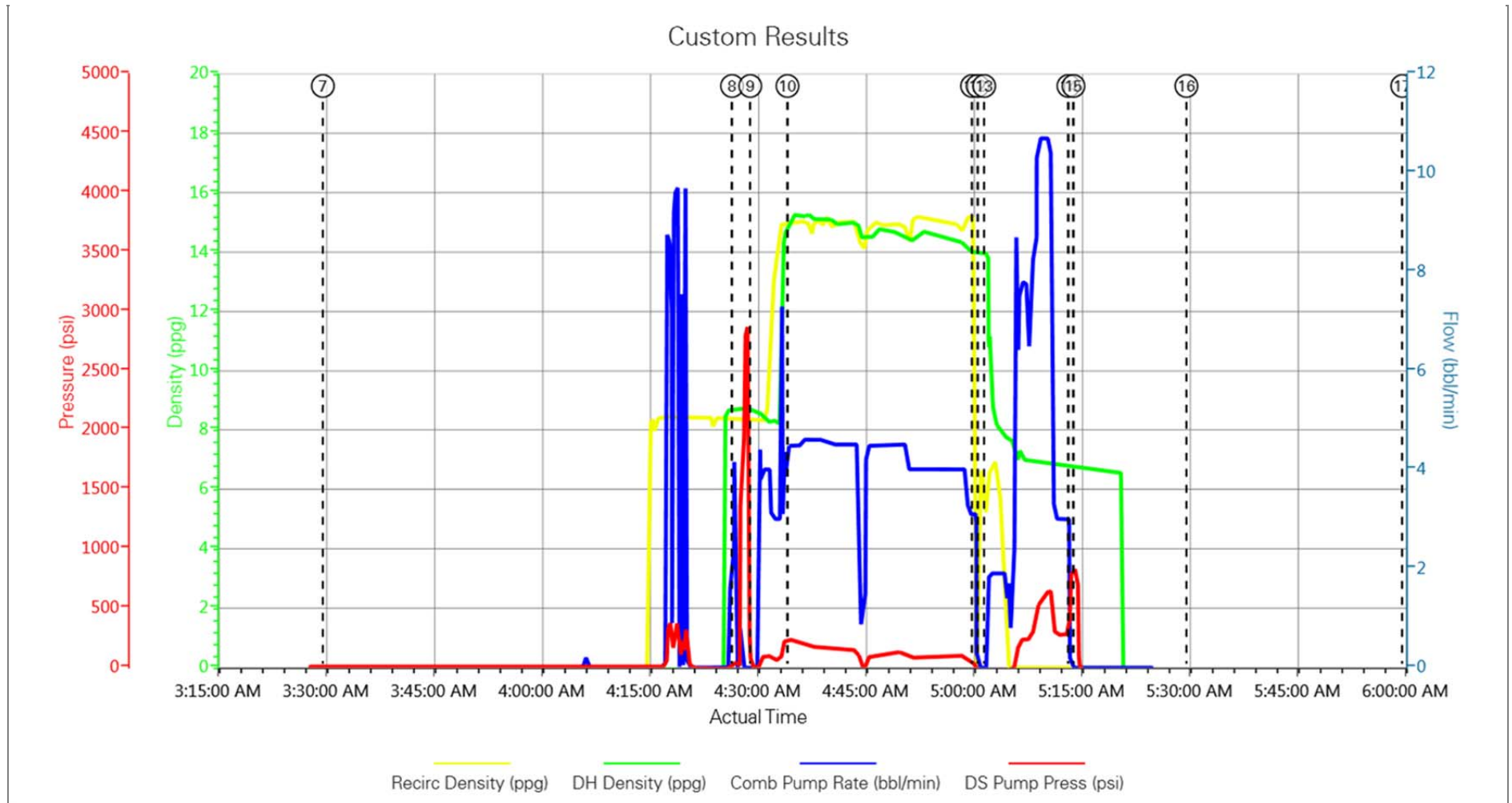
4.0 Attachments

4.1 TAPSTONE CHAINLAND.png



5.0 Custom Graphs

5.1 Custom Graph



6.0 Appendix

6.1 One-Minutes Real-Time Data Listing

Time	Truck 1 Slurry Rate (bbl/min)	Stage Slurry Volume (bbl)	Truck 1 Density (ppg)	Truck 1 Pressure (psi)	Backside Pressure (psi)	Truck 1 Water Rate (bbl/min)
03:27:48	0.00	0.0	0.00	0.00	0.00	0.00
03:29:28	0.00	0.0	-2.83	-3.00	10.00	0.00
03:31:07	0.00	0.0	-3.22	-3.00	11.00	0.00
03:32:48	0.00	0.0	-3.77	-2.00	11.00	0.00
03:34:28	0.00	0.0	-4.04	-2.00	12.00	0.00
03:36:07	0.00	0.0	-4.40	-2.00	12.00	0.00
03:37:48	0.00	0.0	-4.60	-2.00	12.00	0.00
03:39:27	0.00	0.0	-4.79	-1.00	12.00	0.00
03:41:07	0.00	0.0	-5.03	-2.00	13.00	0.00
03:42:47	0.00	0.0	-5.20	-2.00	13.00	0.00
03:44:28	0.00	0.0	-5.20	-2.00	13.00	0.00
03:46:08	0.00	0.0	-5.40	-2.00	13.00	0.00
03:47:47	0.00	0.0	-5.57	-2.00	14.00	0.00
03:49:27	0.00	0.0	-5.65	-2.00	0.00	0.00
03:51:08	0.00	0.0	-5.73	-2.00	0.00	0.00
03:52:48	0.00	0.0	-5.79	-2.00	0.00	0.12
03:54:28	0.00	0.0	-5.84	-2.00	0.00	0.00
03:56:07	0.00	0.0	-5.98	-2.00	1.00	0.00
03:57:48	0.00	0.0	-6.09	-2.00	1.00	0.00
03:59:28	0.00	0.0	-6.12	-2.00	1.00	0.00
04:01:07	0.00	0.0	-6.19	-2.00	1.00	0.00
04:02:47	0.00	0.0	-6.25	-2.00	1.00	0.00
04:04:28	0.00	0.0	-6.21	-2.00	2.00	0.00
04:06:08	0.00	0.0	-6.35	-2.00	2.00	0.00
04:07:47	0.00	0.0	-6.35	-2.00	2.00	0.00
04:09:27	0.00	0.0	-6.36	-2.00	2.00	0.00
04:11:08	0.00	0.0	-6.46	-2.00	2.00	0.00
04:12:48	0.00	0.0	-6.43	-2.00	2.00	0.00
04:14:27	0.00	0.0	-6.53	-2.00	2.00	0.00
04:16:08	0.00	0.0	-0.03	-2.00	2.00	0.00
04:17:48	8.60	5.4	-0.02	323.00	383.00	0.00
04:19:27	4.10	16.8	-0.12	201.00	227.00	0.00
04:21:08	0.00	20.7	-0.13	10.00	-4.00	0.93

Time	Truck 1 Slurry Rate (bbl/min)	Stage Slurry Volume (bbl)	Truck 1 Density (ppg)	Truck 1 Pressure (psi)	Backside Pressure (psi)	Truck 1 Water Rate (bbl/min)
04:22:48	0.00	20.7	-0.14	3.00	-8.00	1.43
04:24:28	0.00	20.7	-0.18	2.00	-10.00	0.00
04:26:07	1.90	21.0	8.72	23.00	10.00	0.00
04:27:48	0.00	22.7	8.71	1,831.00	1,787.00	0.00
04:29:28	0.00	22.7	8.59	14.00	-6.00	0.52
04:31:08	4.00	27.0	8.27	115.00	104.00	0.00
04:32:48	3.00	32.5	8.15	86.00	65.00	3.33
04:34:27	4.50	39.6	15.02	219.00	235.00	2.86
04:36:08	4.60	47.1	15.28	201.00	199.00	2.64
04:37:47	4.60	54.8	15.05	195.00	174.00	2.48
04:39:27	4.60	62.4	15.10	196.00	174.00	4.48
04:41:07	4.50	70.0	15.11	191.00	162.00	3.43
04:42:48	4.50	77.5	14.90	196.00	151.00	2.57
04:44:27	1.20	83.1	14.52	39.00	-26.00	2.79
04:46:07	4.50	89.2	14.52	188.00	107.00	3.05
04:47:48	4.50	96.7	14.67	198.00	128.00	2.43
04:49:28	4.50	104.2	14.57	198.00	128.00	2.79
04:51:07	4.00	111.3	14.44	163.00	86.00	2.57
04:52:47	4.00	118.0	14.69	173.00	91.00	2.74
04:54:28	4.00	124.6	14.51	171.00	89.00	2.86
04:56:08	4.00	131.3	14.44	172.00	90.00	2.21
04:57:47	4.00	138.0	14.42	182.00	99.00	2.07
04:59:28	3.10	144.2	14.03	130.00	40.00	0.00
05:01:07	0.00	146.7	13.91	37.00	-51.00	0.00
05:02:47	1.90	148.4	8.49	66.00	-19.00	0.00
05:04:27	1.40	151.5	7.74	71.00	-12.00	0.00
05:06:07	6.60	156.5	6.94	289.00	158.00	0.00
05:07:48	6.50	168.7	6.90	327.00	224.00	0.00
05:09:28	10.70	184.3	6.94	680.00	594.00	0.00
05:11:08	3.00	199.4	6.86	381.00	307.00	0.00
05:12:48	3.00	204.4	6.80	362.00	280.00	0.00
05:14:27	0.00	205.8	6.90	247.00	169.00	0.00
05:16:07	0.00	205.8	6.70	29.00	-47.00	0.00
05:17:47	0.00	205.8	6.66	29.00	-47.00	0.00

Time	Truck 1 Slurry Rate (bbl/min)	Stage Slurry Volume (bbl)	Truck 1 Density (ppg)	Truck 1 Pressure (psi)	Backside Pressure (psi)	Truck 1 Water Rate (bbl/min)
05:19:27	0.00	205.8	6.57	29.00	-47.00	0.00
05:21:07	0.00	205.8	-1.98	30.00	-47.00	0.00
05:22:48	0.00	205.8	-2.01	30.00	-46.00	0.00
05:24:27	0.00	205.8	-2.00	30.00	-46.00	0.00
05:24:54	0.00	205.8	-2.08	30.00	-46.00	0.00

HALLIBURTON

iCem[®] Service

HALLIBURTON ENERGY SERVICES

For:

Date: Monday, January 26, 2015

TAPSTONE CHAINLAND 3509 11-4H 7" INTERMEDIATE

TAPSTONE CHAINLAND 3509 11-4H 7" INTERMEDIATE

Sincerely,

CHANCE CORDELL, SERVICE SUPERVISOR III

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1.0 Job Design

2.0 Temperature Modeling

3.0 Real-Time Job Summary

3.1 Stage Summary - Liquid Volume, Density, & Design Shutdown

Stage No.	Design Vol. (bbl)	Actual Vol. (bbl)	Design Density (ppg)	Average Density (ppg)	Minimum Density (ppg)	Maximum Density (ppg)
0	0	0		0.00	0.00	0.00

3.2 Stage Summary - Pump Pressure & ECD

Stage No.	Avg. Pump Pressure (psi)	Min. Pump Pressure (psi)	Max. Pump Pressure (psi)	Avg. ECD (psi/ft)	Min. ECD (psi/ft)	Max. ECD (psi/ft)
0	0.00	0.00	0.00	0.000	0.000	0.000

3.3 Stage Summary - Pump Rate & Nitrogen Rate

Stage No.	Design Average Pump Rate (bbl/min)	Average Pump Rate (bbl/min)	Min. Pump Rate (bbl/min)	Max. Pump Rate (bbl/min)	Design Average Nitrogen Rate (scfm)	Average Nitrogen Rate (scfm)	Min. Nitrogen Rate (scfm)	Max. Nitrogen Rate (scfm)
0	0	0.00	0.00	0.00	0	0	0	0

3.4 Shutdown Summary

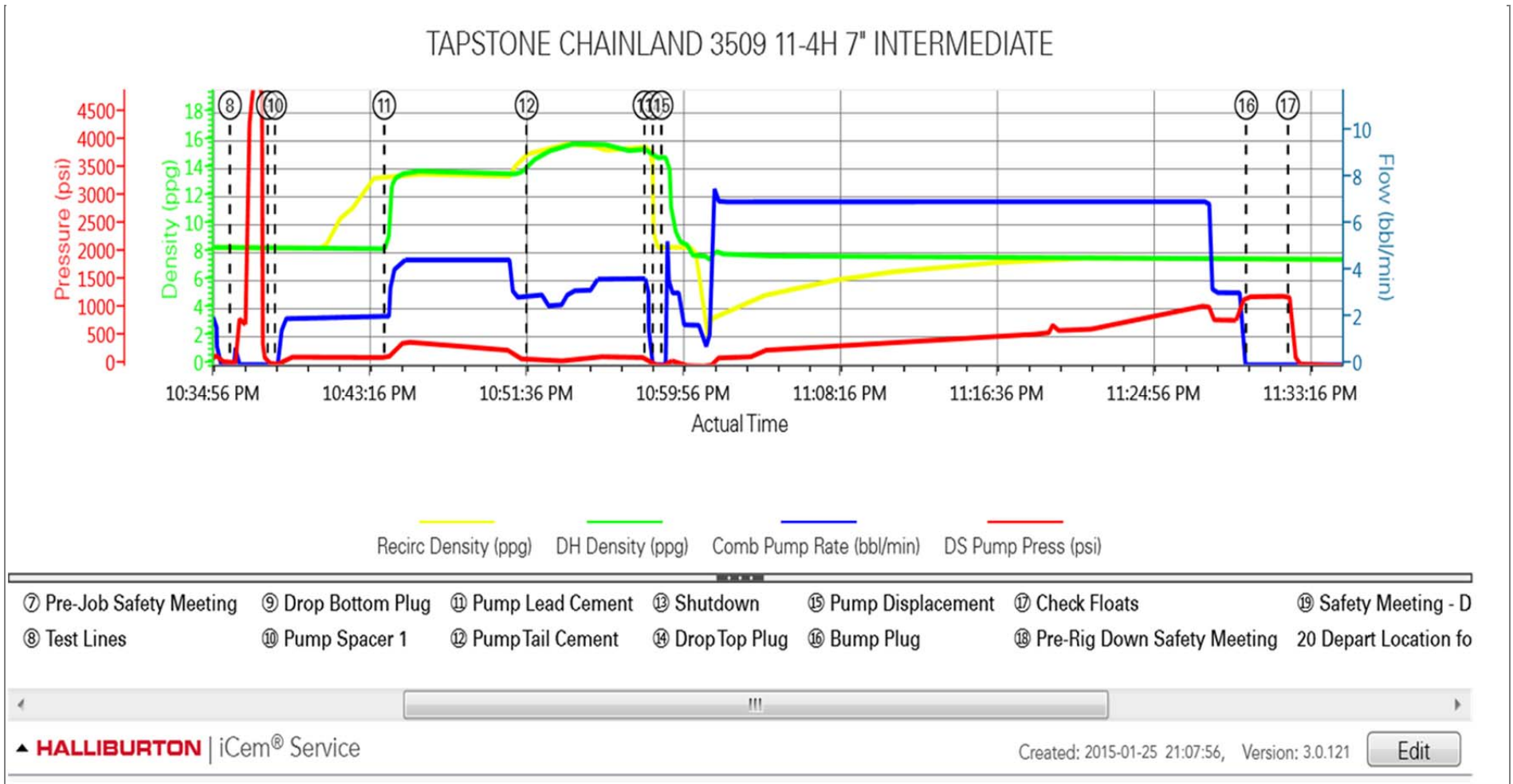
3.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Recirc Density (ppg)	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Comment
Event	1	Call Out	Call Out	1/25/2015	15:30:00	USER					CREW CALLED OUT, 1 PUMP CREW, 1 BULK TRUCK
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/25/2015	18:00:00	USER					DISCUSS DIRECTIONS TO LOCATION.
Event	3	Depart Home for Location	Depart Home for Location	1/25/2015	18:30:00	USER					LEAVE YARD FOR LOCATION.
Event	4	Arrive At Loc	Arrive At Loc	1/25/2015	19:45:00	USER					ARRIVE AT LOCATION. REQUESTED O/L AT 2130
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	1/25/2015	20:00:00	USER					DISCUSS WATER SOURCES, AND KEEPING 30' BUFFER ZONE WHILE PIPE WRANGLER IS IN MOTION
Event	6	Rig-Up Equipment	Rig-Up Equipment	1/25/2015	20:30:00	USER					RIG UP CEMENT EQUIPMENT.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	1/25/2015	21:45:00	USER	0.00	-0.92	0.00	-14.00	DISCUSS HES SAFETY STANDARDS AND JOB PROCEDURES.
Event	8	Test Lines	Test Lines	1/25/2015	22:36:01	COM7	8.39	8.33	0.00	30.00	TEST LINES TO 5000. GOOD TEST NO LEAKS.
Event	9	Drop Bottom Plug	Drop Bottom Plug	1/25/2015	22:38:02	USER	8.39	8.28	0.00	14.00	DROP BOTTOM PLUG. HES PLUG.
Event	10	Pump Spacer 1	Pump Spacer 1	1/25/2015	22:38:25	COM7	8.39	8.30	0.00	14.00	PUMP 10 BBL MUD FLUSH III
Event	11	Pump Lead Cement	Pump Lead Cement	1/25/2015	22:44:13	COM7	13.47	8.54	2.00	132.00	PUMP 38 BBL LEAD AT 13.6 PPG
Event	12	Pump Tail Cement	Pump Tail Cement	1/25/2015	22:51:47	COM7	15.20	14.40	2.90	97.00	PUMP 19 BBL TAIL AT 15.6 PPG
Event	13	Shutdown	Shutdown	1/25/2015	22:58:03	USER	15.57	15.47	3.70	130.00	SHUTDOWN.
Event	14	Drop Top Plug	Drop Top Plug	1/25/2015	22:58:30	USER	8.42	14.83	0.00	-12.00	DROP TOP PLUG, HES PLUG.
Event	15	Pump Displacement	Pump Displacement	1/25/2015	22:58:57	COM7	8.43	14.84	0.00	-22.00	PUMP 197 BBL H2O DISPLACEMENT
Event	16	Bump Plug	Bump Plug	1/25/2015	23:30:01	COM7	7.54	7.60	0.00	1219.00	BUMP PLUG AT 3 BPM.

											WENT 500 PSI OVER.
Event	17	Check Floats	Check Floats	1/25/2015	23:32:14	USER	7.54	7.69	0.00	1085.00	CHECK FLOATS, 1 BBL BACK. FLOATS HELD
Event	18	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/26/2015	00:00:00	USER	7.43	-1.21	0.00	-22.00	DISCUSS MAKING SURE PRESSURE IS OFF, ALL WATER SOURCES SHUT OFF, AND WATCHING PINCH POINTS WHEN RACKING IRON BACK ON TRAILER
Event	19	Rig-Down Equipment	Safety Meeting - Departing Location	1/26/2015	00:30:00	USER					RIG DOWN CEMENT EQUIPMENT.
Event	20	Safety Meeting - Departing Location	Depart Location for Service Center or Other Site	1/26/2015	02:00:00	USER					DISCUSS LEAVING LOCATION IN CONVOY, STOP AND SLEEP IF TOO TIRED TO DRIVE.
Event	21	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	1/26/2015	02:30:00	USER					LEAVE LOCATION.

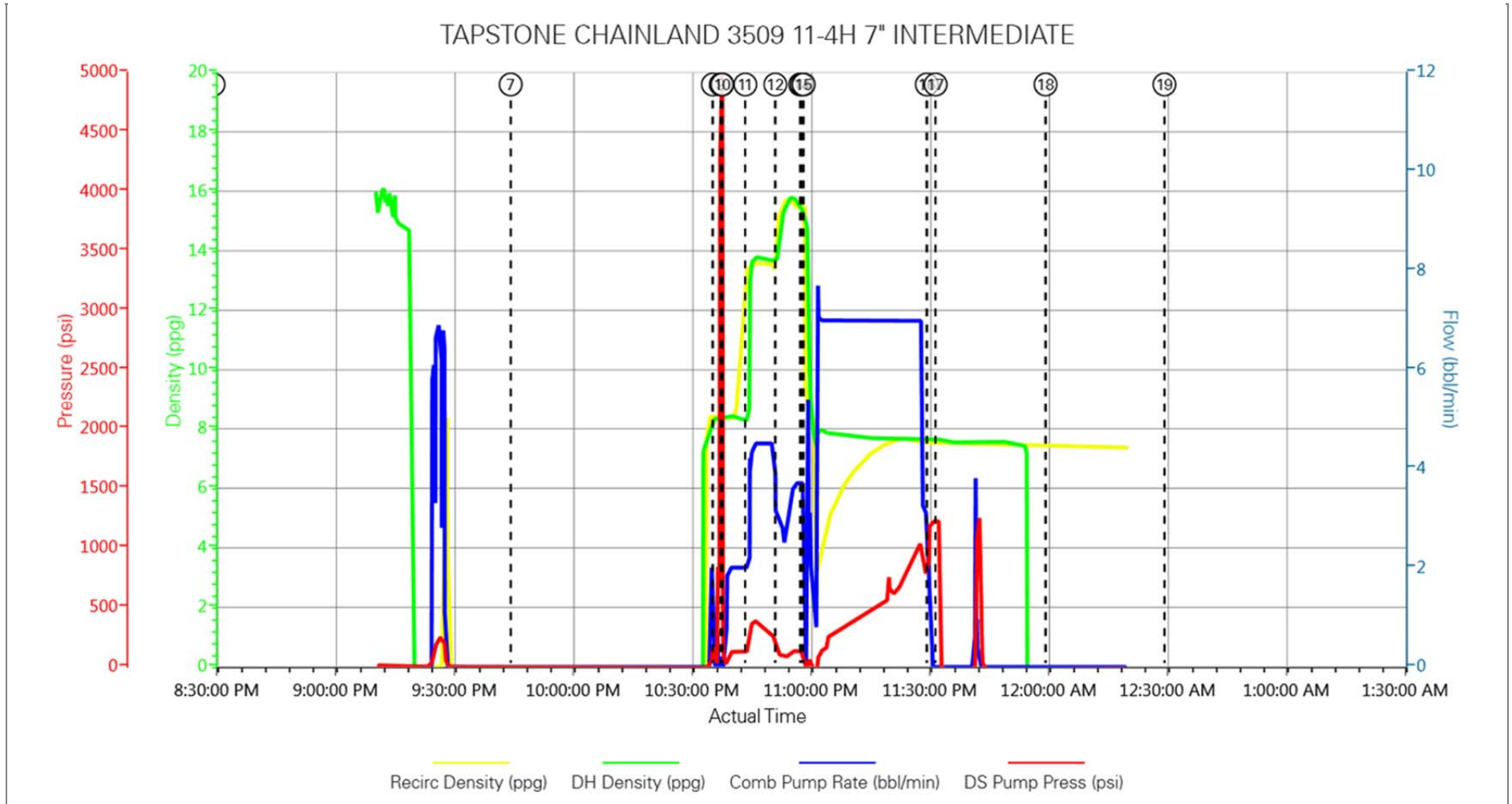
4.0 Attachments

4.1 TAPSTONE CHAINLAND 3509 11-4H 7in INTERMEDIATE.png



5.0 Custom Graphs

5.1 Custom Graph



6.0 Appendix

6.1 One-Minutes Real-Time Data Listing

Time	Truck 1 Slurry Rate (bbl/min)	Stage Slurry Volume (bbl)	Truck 1 Density (ppg)	Truck 1 Pressure (psi)	Backside Pressure (psi)	Truck 1 Water Rate (bbl/min)
09:10:28	0.00	0.0	0.00	0.00	0.00	0.00
09:12:07	0.00	0.0	16.06	-4.00	14.00	0.00
09:13:47	0.00	0.0	15.24	-4.00	15.00	0.00
09:15:28	0.00	0.0	14.95	-4.00	15.00	0.00
09:17:08	0.00	0.0	14.78	-4.00	15.00	0.00
09:18:48	0.00	0.0	-0.04	-1.00	7.00	0.00
09:20:27	0.00	0.0	-0.04	0.00	0.00	0.00
09:22:07	0.00	0.0	-0.20	0.00	1.00	0.00
09:23:48	0.00	0.0	-0.22	9.00	17.00	0.00
09:25:27	6.90	8.2	-0.84	219.00	287.00	0.00
09:27:07	6.80	19.4	-0.44	228.00	216.00	6.71
09:28:47	0.00	20.7	-0.47	-1.00	-3.00	0.00
09:30:27	0.00	20.7	-0.53	-6.00	-3.00	0.00
09:32:07	0.00	20.7	-0.63	-6.00	-6.00	0.00
09:33:47	0.00	20.7	-0.73	-6.00	-8.00	0.00
09:35:27	0.00	20.7	-0.62	-5.00	-10.00	0.00
09:37:07	0.00	20.7	-0.66	-4.00	-11.00	0.00
09:38:47	0.00	20.7	-0.69	-3.00	-12.00	0.00
09:40:27	0.00	20.7	-0.80	-2.00	-13.00	0.00
09:42:08	0.00	20.7	-0.83	-2.00	-13.00	0.00
09:43:48	0.00	20.7	-0.93	-2.00	-14.00	0.00
09:45:27	0.00	20.7	-0.94	-1.00	-14.00	0.00
09:47:08	0.00	20.7	-0.99	-1.00	-14.00	0.00
09:48:48	0.00	20.7	-1.02	0.00	-14.00	0.00
09:50:27	0.00	20.7	-0.99	0.00	-14.00	0.00
09:52:07	0.00	20.7	-1.00	0.00	-14.00	0.00
09:53:47	0.00	20.7	-1.07	0.00	-14.00	0.00
09:55:27	0.00	20.7	-1.01	0.00	-14.00	0.00
09:57:07	0.00	20.7	-1.18	1.00	-14.00	0.00
09:58:48	0.00	20.7	-1.17	0.00	-14.00	0.00
10:00:27	0.00	20.7	-1.24	0.00	-14.00	0.00
10:02:08	0.00	20.7	-1.17	0.00	-13.00	0.00
10:03:47	0.00	20.7	-1.18	0.00	-13.00	0.00

Time	Truck 1 Slurry Rate (bbl/min)	Stage Slurry Volume (bbl)	Truck 1 Density (ppg)	Truck 1 Pressure (psi)	Backside Pressure (psi)	Truck 1 Water Rate (bbl/min)
10:05:28	0.00	20.7	-1.23	0.00	-13.00	0.00
10:07:07	0.00	20.7	-1.15	0.00	-13.00	0.00
10:08:47	0.00	20.7	-1.26	0.00	-13.00	0.00
10:10:27	0.00	20.7	-1.22	0.00	-12.00	0.00
10:12:07	0.00	20.7	-1.24	0.00	-12.00	0.00
10:13:48	0.00	20.7	-1.28	0.00	-12.00	0.00
10:15:27	0.00	20.7	-1.26	0.00	-12.00	0.00
10:17:07	0.00	20.7	-1.20	0.00	-11.00	0.00
10:18:47	0.00	20.7	-1.26	-1.00	-11.00	0.00
10:20:27	0.00	20.7	-1.25	-1.00	-10.00	0.00
10:22:07	0.00	20.7	-1.23	-1.00	-10.00	0.00
10:23:48	0.00	20.7	-1.24	-1.00	-9.00	0.00
10:25:27	0.00	20.7	-1.25	-1.00	-9.00	0.00
10:27:07	0.00	20.7	-1.27	-2.00	-9.00	0.00
10:28:48	0.00	20.7	-1.27	-2.00	-9.00	0.00
10:30:28	0.00	20.7	-1.25	-2.00	-8.00	0.00
10:32:07	0.00	20.7	-1.25	-2.00	-8.00	0.00
10:33:47	0.00	20.7	7.56	-1.00	-2.00	0.00
10:35:28	0.00	22.4	8.26	53.00	54.00	0.00
10:37:07	0.00	22.5	8.46	4,992.00	4,996.00	0.00
10:38:47	2.00	23.0	8.31	85.00	80.00	0.00
10:40:28	2.00	26.4	8.35	129.00	123.00	0.00
10:42:07	2.00	29.7	8.30	134.00	126.00	0.00
10:43:47	2.00	33.0	8.24	142.00	130.00	2.48
10:45:27	4.50	39.0	13.73	381.00	404.00	2.79
10:47:07	4.50	46.5	13.74	336.00	337.00	2.88
10:48:47	4.50	54.0	13.66	303.00	278.00	2.64
10:50:28	4.50	61.5	13.69	276.00	265.00	1.95
10:52:07	3.00	66.9	14.71	128.00	97.00	1.81
10:53:47	3.00	71.4	15.63	130.00	91.00	2.48
10:55:28	3.70	76.9	15.81	185.00	142.00	2.07
10:57:07	3.70	83.0	15.32	169.00	128.00	0.00
10:58:47	0.00	86.5	14.81	18.00	-21.00	0.00
11:00:27	1.70	90.2	7.77	19.00	-23.00	0.00

Time	Truck 1 Slurry Rate (bbl/min)	Stage Slurry Volume (bbl)	Truck 1 Density (ppg)	Truck 1 Pressure (psi)	Backside Pressure (psi)	Truck 1 Water Rate (bbl/min)
11:02:07	7.00	96.3	7.88	183.00	142.00	0.00
11:03:47	7.00	108.0	7.89	255.00	212.00	0.00
11:05:27	6.90	119.6	7.86	330.00	284.00	0.00
11:07:07	7.00	131.3	7.81	367.00	320.00	0.00
11:08:47	7.00	143.0	7.91	403.00	355.00	0.00
11:10:27	7.00	154.6	7.74	438.00	389.00	0.00
11:12:07	7.00	166.3	7.72	474.00	424.00	0.00
11:13:47	7.00	177.9	7.67	510.00	459.00	0.00
11:15:27	7.00	189.6	7.70	540.00	485.00	0.00
11:17:07	7.00	201.3	7.70	570.00	516.00	0.00
11:18:47	7.00	212.9	7.75	609.00	552.00	0.00
11:20:27	7.00	224.6	7.69	659.00	603.00	0.00
11:22:08	7.00	236.2	7.64	732.00	673.00	0.00
11:23:47	7.00	247.9	7.59	842.00	781.00	0.00
11:25:27	7.00	259.5	7.59	966.00	904.00	0.00
11:27:08	7.00	271.2	7.67	1,077.00	1,011.00	0.00
11:28:47	3.10	279.4	7.56	819.00	762.00	0.00
11:30:27	0.00	281.7	7.53	1,283.00	1,221.00	0.00
11:32:08	0.00	281.7	7.62	1,290.00	1,226.00	0.00
11:33:48	0.00	281.7	7.58	25.00	-29.00	0.00
11:35:27	0.00	281.7	7.56	24.00	-30.00	0.00
11:37:07	0.00	281.7	7.54	23.00	-29.00	0.00
11:38:47	0.00	281.7	7.54	23.00	-29.00	0.00
11:40:27	0.00	281.7	7.53	24.00	-27.00	0.00
11:42:07	0.00	282.8	7.57	1,313.00	1,254.00	0.00
11:43:48	0.00	282.8	7.43	26.00	-26.00	0.00
11:45:27	0.00	282.8	7.51	23.00	-27.00	0.00
11:47:07	0.00	282.8	7.47	23.00	-27.00	0.00
11:48:48	0.00	282.8	7.58	23.00	-26.00	0.00
11:50:27	0.00	282.8	7.52	22.00	-26.00	0.00
11:52:08	0.00	282.8	7.52	22.00	-25.00	0.00
11:53:47	0.00	282.8	7.32	21.00	-25.00	0.00
11:55:27	0.00	282.8	-1.30	21.00	-24.00	0.00
11:57:07	0.00	282.8	-1.25	20.00	-23.00	0.00

Time	Truck 1 Slurry Rate (bbl/min)	Stage Slurry Volume (bbl)	Truck 1 Density (ppg)	Truck 1 Pressure (psi)	Backside Pressure (psi)	Truck 1 Water Rate (bbl/min)
11:58:48	0.00	282.8	-1.21	20.00	-23.00	0.00
12:00:27	0.00	282.8	-1.23	20.00	-22.00	0.00
12:02:07	0.00	282.8	-1.22	19.00	-22.00	0.00
12:03:47	0.00	282.8	-1.25	19.00	-21.00	0.00
12:05:27	0.00	282.8	-1.21	19.00	-20.00	0.00
12:07:07	0.00	282.8	-1.24	18.00	-19.00	0.00
12:08:47	0.00	282.8	-1.27	17.00	-19.00	0.00
12:10:27	0.00	282.8	-1.27	16.00	-18.00	0.00
12:12:07	0.00	282.8	-1.18	16.00	-17.00	0.00
12:13:47	0.00	282.8	-1.08	16.00	-16.00	0.00
12:15:28	0.00	282.8	-1.15	15.00	-15.00	0.00
12:17:08	0.00	282.8	-1.18	15.00	-15.00	0.00
12:18:48	0.00	282.8	-1.16	14.00	-14.00	0.00
12:20:02	0.00	282.8	-1.08	14.00	-13.00	0.00