

Cynosure Energy LLC

Federal 14/15-4-21

**Frontier 28**

# **Post Job Summary**

## **Cement Production Casing**

Date Prepared: 11/29/14  
Job Date: 11/22/14

Submitted by: Evan Russell – Grand Junction Cement Engineer

The Road to Excellence Starts with Safety

Sold To #: 373950	Ship To #: 3557100	Quote #:	Sales Order #: 0901856206
Customer: CYNOSURE ENERGY LLC		Customer Rep: R. Boyd Cottam	
Well Name: FEDERAL	Well #: 14/15-4-21	API/UWI #: 05-045-22459-00	
Field: KOKOPELLI	City (SAP): NEW CASTLE	County/Parish: GARFIELD	State: COLORADO
Legal Description: SE NE-21-6S-91W-2339FNL-736FEL			
Contractor:		Rig/Platform Name/Num: Frontier 28	
Job BOM: 7523			
Well Type: DIRECTIONAL GAS			
Sales Person: HALAMERICA\HB50180		Srvc Supervisor: Dustin Hyde	

### Job

Formation Name	
Formation Depth (MD)	Top Bottom
Form Type	BHST
Job depth MD	8146ft Job Depth TVD
Water Depth	Wk Ht Above Floor
Perforation Depth (MD)	From To

### Well Data

Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing		9.625	8.921	36	STC	J-55	0	1558	0	1558
Casing		4.5	4	11.6	LTC	N-80	0	8146	0	8146
Open Hole Section			8.75				1558	8163	1558	8163

### Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	4.5	1		8146	Top Plug	4.5	1	HES
Float Shoe	4.5	1			Bottom Plug			
Float Collar	4.5	1			SSR plug set			
Insert Float	4.5	1			Plug Container	4.5	1	HES
Stage Tool	4.5	1			Centralizers	4.5		

### Miscellaneous Materials

Gelling Agt	Conc	Surfactant	Conc	Acid Type	Qty	Conc
Treatment Fld	Conc	Inhibitor	Conc	Sand Type	Size	Qty

### Fluid Data

Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Mud Flush III (Powder)	Mud Flush III	20	bbl	8.4			4		
42 gal/bbl		FRESH WATER								

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
2	EconoCem	EXPANDASEAL (TM) SYSTEM	300	sack	11.5	2.28		6	12.74	
12.79 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
3	VersaCem	VERSACEM (TM) SYSTEM	350	sack	12.5	1.83		6	8.7	
8.98 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
4	ExpandaCem	EXPANDACEM (TM) SYSTEM	900	sack	13.1	1.67		6	7.88	
7.93 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
5	KCL Water Displacement	KCL Water Displacement	126	bbl	8.34			5		
<b>Cement Left In Pipe</b>		<b>Amount</b>	46ft		<b>Reason</b>			Shoe Joint		
<b>Comment</b>										

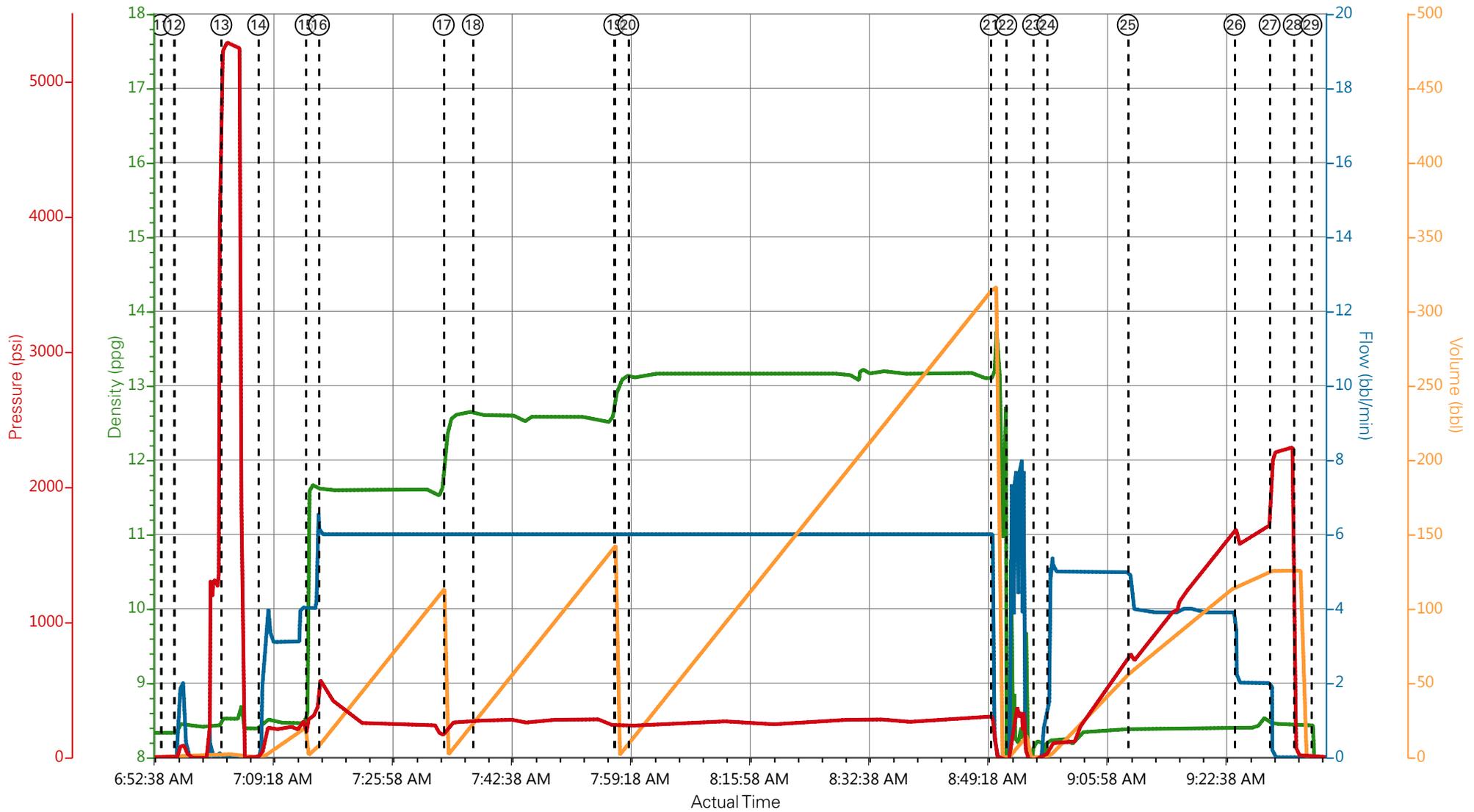
### 3.5 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Downhole Density (ppg)	Pass-Side Pump Pressure (psi)	Combined Pump Rate (bbl/min)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	Call Out	11/22/2014	11:00:00	USER					ON LOCATION TO BE AT 1800
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	11/22/2014	14:45:00	USER					ALL HES CREW PRESENT
Event	3	Crew Leave Yard	Crew Leave Yard	11/22/2014	15:00:00	USER					1 HT 400 PUMP TRUCK E4, 2 660 BULK TRUCKS, 1 IRON TRUCK, 1 550 PICKUP TRUCK
Event	4	Arrive At Loc	Arrive At Loc	11/22/2014	17:00:00	USER					RIG RUNNING CASING UPON HES ARRIVAL / HES EQUIPMENT ON LOC 1 EA PUMP UNIT 1 EA SERVICE PICK UP 1 EA IRON TRUCK UNIT 2 EA 660 BULK UNITS 1 EA 1400 BIN UNIT
Event	5	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	11/22/2014	17:30:00	USER					PERFORMED JSA AND WATER ANALYSIS
Event	6	Other	Spot Equipment	11/23/2014	02:00:00	USER					
Event	7	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	11/23/2014	02:30:00	USER					
Event	8	Rig-Up Equipment	Rig-Up Equipment	11/23/2014	02:45:00	USER					1 BIN, 2 BULK TRUCK, 1 PUMP TRUCK, WATER SOURCE, AND TO THE FLOOR TO HEAD, AND WASHUP
Event	9	Rig-Up Completed	Rig-Up Completed	11/23/2014	04:30:00	USER					
Event	10	Pre-Job Safety Meeting	Pre-Job Safety Meeting	11/23/2014	06:30:00	USER					ALL RIG PERSONEL AND HES PRESENT

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Downhole Density (ppg)	Pass-Side Pump Pressure (psi)	Combined Pump Rate (bbl/min)	Pump Stage Total (bbl)	Comments
Event	11	Start Job	Start Job	11/23/2014	06:54:00	COM8					TD 8163 FT TP 8173 FT SJ 46.18 FT OH 8 3/4 IN CSG 4.5 IN 11.6# LTC N-80 WF/WT 9.3 PPG, YP 12, PV 12, PH 9.5. RIG CIRCULATED AT 6.6 BBLS MIN 524 PSI. HAVE TO GO IN AIR TO STAB HEAD AND HOOK UP BAILS
Event	12	Prime Pumps	Prime Lines	11/23/2014	06:55:50	USER	8.33	103	2.0	2	PRIME LINES WITH FRESH WATER WENT UP IN AIR TO CLOSE VALVE FOR PRESSURE TEST
Event	13	Test Lines	Test Lines	11/23/2014	07:02:27	COM8		5200			PRESSURE TEST LINES 5 TH GEAR STALL OUT AT 1300 PSI TEST LINES TO 5200 PSI. WENT BACK IN AIR TO OPEN VALVE AFTER PRESSURE RELEASED
Event	14	Pump Spacer 1	Pump Mud Flush III	11/23/2014	07:07:37	COM8	8.4	250	4.0	20	PUMP 20 BBLS MF
Event	15	Pump Lead Cement	Pump Scavenger Cement	11/23/2014	07:14:15	COM8	11.5	270	6.0	121.8	300 SKS OF EXTENDACEM CMT, 11.5 PPG, 2.28 YIELD, 12.74 GAL/SK
Event	16	Check Weight	Check weight	11/23/2014	07:16:07	COM8					MUD CUP MATCHED RECIRC
Event	17	Pump Lead Cement	Pump Lead Cement	11/23/2014	07:33:35	COM8	12.5	280	6.0	114.1	350 SKS OF VERSACEM CMT, 12.5 PPG, 1.83 YIELD, 8.7 GAL/SK
Event	18	Check Weight	Check weight	11/23/2014	07:37:39	COM8					MUD CUP MATCHED RECIRC
Event	19	Pump Tail Cement	Pump Tail Cement	11/23/2014	07:57:27	COM8	13.1	290	6.0	267.7	900 SKS OF EXPANDACEM CMT, 13.1 PPG, 1.67 YIELD, 7.88 GAL/SK

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Downhole Density (ppg)	Pass-Side Pump Pressure (psi)	Combined Pump Rate (bbl/min)	Pump Stage Total (bbl)	Comments
Event	20	Check Weight	Check weight	11/23/2014	07:59:24	COM8					MUD CUP MATCHED RECIRC
Event	21	Shutdown	Shutdown	11/23/2014	08:50:08	USER					
Event	22	Clean Lines	Clean Lines	11/23/2014	08:52:17	COM8					WENT IN AIR TO CLOSE 2" TO CLEAN LINES TO CATCH TANK USED ABOUT 12 BBLS
Event	23	Drop Top Plug	Drop Top Plug	11/23/2014	08:56:03	COM8					VERIFIED BY TATTLE TAIL. WENT IN AIR TO DROP PLUG
Event	24	Pump Displacement	Pump Displacement	11/23/2014	08:58:02	COM8	8.4	1700	5.0	60	1 BAG KCL IN EVERY 10 BBLS
Event	25	Slow Rate	Slow Rate	11/23/2014	09:09:18	USER	8.4	720	4.0	55	PER CO REP
Event	26	Slow Rate	Slow Rate	11/23/2014	09:24:13	USER	8.4	1610	2.0	11	PER CO REP
Event	27	Bump Plug	Bump Plug	11/23/2014	09:29:09	COM8	8.4	1700	2.0	125.9	PLUG BUMPED
Event	28	Check Floats	Check Floats	11/23/2014	09:32:31	USER		2260			FLOATS HELD ABOUT 3 BBLS OF MUD FLUSH III TO SURFACE. 1 BBL FLOW BACK
Event	29	End Job	End Job	11/23/2014	09:35:00	COM8					
Event	30	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	11/23/2014	10:45:00	USER					WENT TO FLOOR AND WENT IN AIR TO RIG DOWN HEAD AND BAILS
Event	31	Rig-Down Equipment	Rig-Down Equipment	11/23/2014	11:00:00	USER					
Event	32	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	11/23/2014	12:45:00	USER					NO INJURIES TO REPORT
Event	33	Crew Leave Location	Crew Leave Location	11/23/2014	13:00:00	USER					THANK YOU FOR USING HALLIBURTO CEMENT

# CYNOSURE FED 14/15-4-21 4 1/2" PRODUCTION



— DH Density (ppg)    
 — Comb Pump Rate (bbl/min)    
 — PS Pump Press (psi)    
 — Pump Stg Tot (bbl)

- |                             |   |                          |                         |                    |                      |                 |
|-----------------------------|---|--------------------------|-------------------------|--------------------|----------------------|-----------------|
| ① Call Out                  | ⑤ Assessment Of Location Safety Meeting | ⑨ Rig-Up Completed       | ⑬ Test Lines            | ⑰ Pump Lead Cement | 21 Shutdown          | 25 Slow Rate    |
| ② Pre-Convoy Safety Meeting | ⑥ Spot Equipment                        | ⑩ Pre-Job Safety Meeting | ⑭ Pump Mud Flush III    | ⑱ Check weight     | 22 Clean Lines       | 26 Slow Rate    |
| ③ Crew Leave Yard           | ⑦ Pre-Rig Up Safety Meeting             | ⑪ Start Job              | ⑮ Pump Scavenger Cement | ⑲ Pump Tail Cement | 23 Drop Top Plug     | 27 Bump Plug    |
| ④ Arrive At Loc             | ⑧ Rig-Up Equipment                      | ⑫ Prime Lines            | ⑯ Check weight          | 20 Check weight    | 24 Pump Displacement | 28 Check Floats |



**HALLIBURTON** | iCem® Service

Created: 2014-11-22 18:04:44, Version: 4.0.248

[Edit](#)

Customer: CYNOSURE ENERGY LLC

Job Date: 11/23/2014

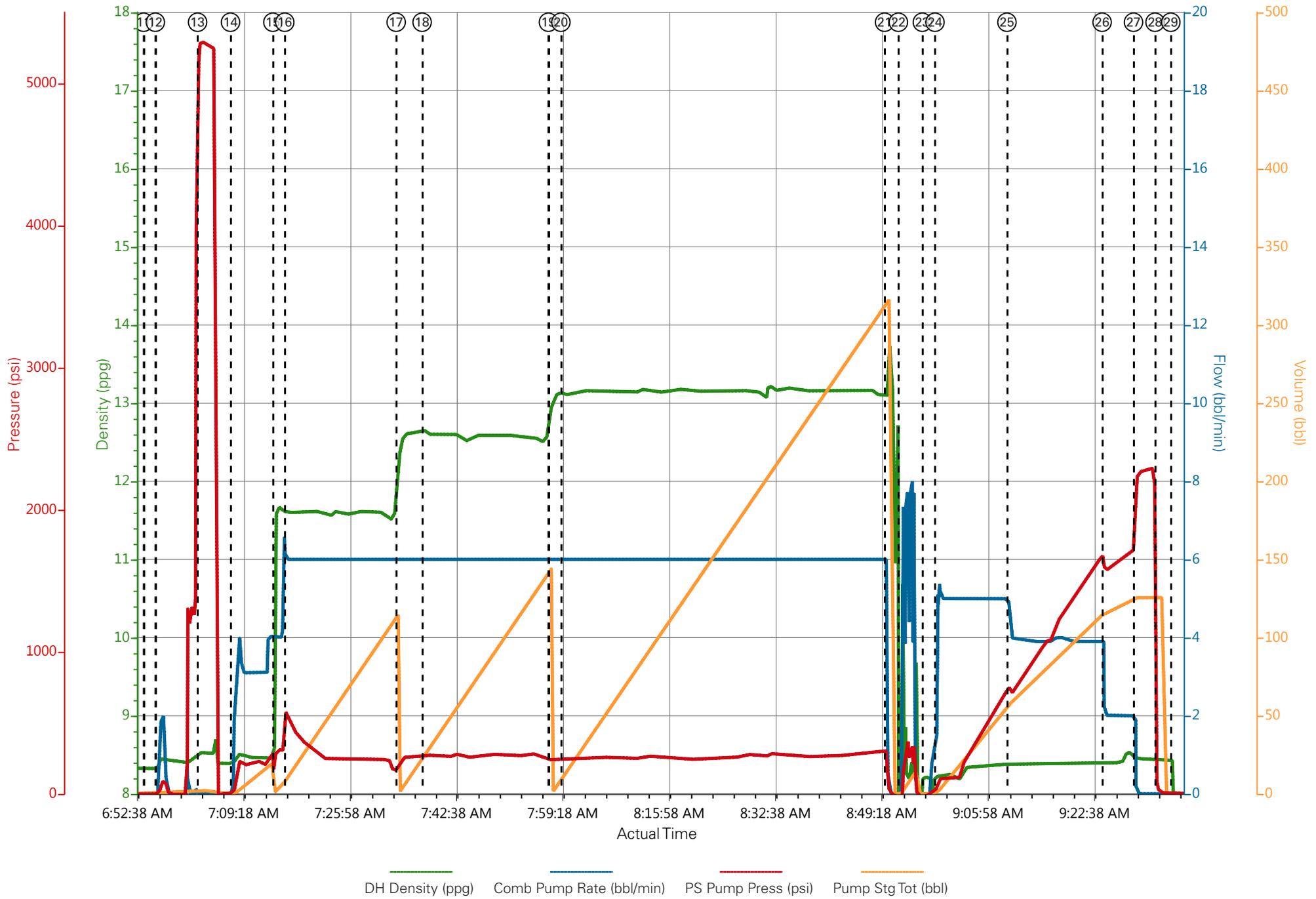
Well: Federal 14/15-4-21

Representative: R. Boyd Cottam

Sales Order #: 901856206

Elite #4: Dustin Hyde / Roger Laulainen

# CYNOSURE FED 14/15-4-21 4 1/2" PRODUCTION



DH Density (ppg)    Comb Pump Rate (bbl/min)    PS Pump Press (psi)    Pump Stg Tot (bbl)

# HALLIBURTON

## Water Analysis Report

Company: CYNOSURE

Date: 11/22/2014

Submitted by: Dustin Hyde

Date Rec.: 11/22/2014

Attention: J.TROUT

S.O.# 901856206

Lease FED

Job Type: PRODUCTION

Well # 14/15-4-21

Specific Gravity	<i>MAX</i>	<b>1</b>
pH	<i>8</i>	<b>8</b>
Potassium (K)	<i>5000</i>	<b>400</b> Mg / L
Calcium (Ca)	<i>500</i>	<b>120</b> Mg / L
Iron (FE2)	<i>300</i>	<b>0</b> Mg / L
Chlorides (Cl)	<i>3000</i>	<b>500</b> Mg / L
Sulfates (SO <sub>4</sub> )	<i>1500</i>	<b>&lt;200</b> Mg / L
Temp	<i>40-80</i>	<b>40</b> Deg
Total Dissolved Solids		<b>350</b> Mg / L

Respectfully: Dustin Hyde

Title: Cement Supervisor

Location: Grand Junction, CO

**NOTICE:**

This report is limited to the described sample tested. Any person using or relying on this report agrees that Halliburton shall not be liable for any loss or damage whether due to act or omission resulting from such report or its

<b>Sales Order #:</b> 0901856206	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 11/23/2014
<b>Customer:</b> CYNOSURE ENERGY LLC		<b>Job Type (BOM):</b> CMT PRODUCTION CASING BOM
<b>Customer Representative:</b>		<b>API / UWI: (leave blank if unknown)</b> 05-045-22459-00
<b>Well Name:</b> FEDERAL		<b>Well Number:</b> 0080638604
<b>Well Type:</b> DIRECTIONAL GAS	<b>Well Country:</b> USA	
<b>H2S Present:</b> No	<b>Well State:</b> COLORADO	<b>Well County:</b> GARFIELD

Dear Customer,

We hope that you were satisfied with the service quality of this job performed by Halliburton. It is the aim of our management and service personnel to deliver equipment and service of a standard unmatched in the service sector of the energy industry.

Please take the time to let us know if our performance met with your satisfaction. Please be as critical as possible to ensure we constantly improve our service. Your comments are of great value to us and are intended for the exclusive use of Halliburton.

### CUSTOMER SATISFACTION SURVEY

CATEGORY	CUSTOMER SATISFACTION RESPONSE	
Survey Conducted Date	The date the survey was conducted	11/23/2014
Survey Interviewer	The survey interviewer is the person who initiated the survey.	HB43597
Customer Participation	Did the customer participate in this survey? (Y/N)	No
Customer Representative	Enter the Customer representative name	
HSE	Was our HSE performance satisfactory? Circle Y or N	
Equipment	Were you satisfied with our Equipment? Circle Y or N	
Personnel	Were you satisfied with our people? Circle Y or N	
Customer Comment	Customer's Comment	

<b>CUSTOMER SIGNATURE</b>
---------------------------

<b>Sales Order #:</b> 0901856206	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 11/23/2014
<b>Customer:</b> CYNOSURE ENERGY LLC		<b>Job Type (BOM):</b> CMT PRODUCTION CASING BOM
<b>Customer Representative:</b>		<b>API / UWI: (leave blank if unknown)</b> 05-045-22459-00
<b>Well Name:</b> FEDERAL		<b>Well Number:</b> 0080638604
<b>Well Type:</b> DIRECTIONAL GAS	<b>Well Country:</b> USA	
<b>H2S Present:</b> No	<b>Well State:</b> COLORADO	<b>Well County:</b> GARFIELD

### KEY PERFORMANCE INDICATORS

General	
<b>Survey Conducted Date</b>	11/23/2014
The date the survey was conducted	

Cementing KPI Survey	
<b>Type of Job</b>	0
Select the type of job. (Cementing or Non-Cementing)	
<b>Select the Maximum Deviation range for this Job</b>	Vertical
What is the highest deviation for the job you just completed? This may not be the maximum well deviation.	
<b>Total Operating Time (hours)</b>	6
Total Operating Hours Including Rig-up, Pumping, Rig-down. Enter in decimal format.	
<b>HSE Incident, Accident, Injury</b>	No
HSE Incident, Accident, Injury. This should be recordable incidents only.	
<b>Was the job purpose achieved?</b>	Yes
Was the job delivered correctly as per customer agreed design?	
<b>Pumping Hours</b>	3
Total number of hours pumping fluid on this job. Enter in decimal format.	
<b>Type of Rig Classification Job Was Performed</b>	Drilling Rig (Portable)
Type Of Rig (classification) Job Was Performed On	
<b>Number Of JSAs Performed</b>	5
Number Of Jsas Performed	
<b>Was this a Primary Cement Job (Yes / No)</b>	Yes
Primary Cement Job= Casing job, Liner job, or Tie-back job.	
<b>Number of Unplanned Shutdowns</b>	0
Unplanned shutdown is when injection stops for any period of time.	
<b>Customer Non-Productive Rig Time (hrs)</b>	0

<b>Sales Order #:</b> 0901856206	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 11/23/2014
<b>Customer:</b> CYNOSURE ENERGY LLC		<b>Job Type (BOM):</b> CMT PRODUCTION CASING BOM
<b>Customer Representative:</b>		<b>API / UWI: (leave blank if unknown)</b> 05-045-22459-00
<b>Well Name:</b> FEDERAL		<b>Well Number:</b> 0080638604
<b>Well Type:</b> DIRECTIONAL GAS	<b>Well Country:</b> USA	
<b>H2S Present:</b> No	<b>Well State:</b> COLORADO	<b>Well County:</b> GARFIELD

Lost time due to Halliburton in the start, execution, or completion of an ordered service or product, or delays in a follow-on service. Enter in decimal format. 0 if none.	
<b>Was the non productive time or the unplanned shutdown caused by a problem with a piece of equipment?</b> Was the non productive time or the unplanned shutdown caused by a problem with a piece of equipment?	No
<b>Did We Run Wiper Plugs?</b> Did We Run Top And Bottom Casing Wiper Plugs?	Top
<b>If a top plug was run, was the plug bumped? (Yes/No/N/A)</b> If a top plug was run, was the plug bumped? (Yes/No/N/A)	Yes
<b>If applicable, was Halliburton float equipment used? (Yes/No/N/A)</b> If applicable, was Halliburton float equipment used? (Yes/No/N/A)	Not Available
<b>If applicable, did the floats hold? (Yes/No/N/A)</b> If applicable, did the floats hold? (Yes/No/N/A)	Yes
<b>Mixing Density of Job Stayed in Designed Density Range (0-100%)</b> Density Range defined as +/- .20 ppg. Calculation: Total BBLs cement mixed at designed density divided by total BBLs of cement multiplied by 100	98
<b>Pump Rate (percent) of Job Stayed At Designed Pump Rate</b> Pump Rate range defined as +/- 1bbl/min. Calculation: Total BBLs of fluid pumped at the designed rate divided by Total BBLs of fluid pumped, multiplied by 100	98
<b>If applicable, were there returns throughout the job? (Yes/No/N/A)</b> If applicable, were there returns throughout the job? (Yes/No/N/A)	Yes
<b>Nbr of Remedial Plug Jobs Rqd - HES</b> Number Of Remedial Plug Jobs Needed After Primary Plug Pumped By HES	0
<b>Nbr of Remedial Sqz Jobs Rqd - HES</b> Number Of Remedial Squeeze Jobs Required After Primary Job Performed By HES	0