

# HALLIBURTON

iCem<sup>®</sup> Service

## **SYNERGY RESOURCES CORPORATION**

Date: Wednesday, September 20, 2017

### **Leffler 26C-23-L Production**

Job Date: Monday, August 21, 2017

Sincerely,  
**Bryce Hinsch**

## Legal Notice

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Leffler 26C-23-L** cement **production** casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

**Approximately 20 bbls of cement were returned to surface.**

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

**Halliburton [Fort Lupton]**

*The Road to Excellence Starts with Safety*

Sold To #: 359915		Ship To #: 3800224		Quote #:		Sales Order #: 0904234871				
Customer: SYNERGY RESOURCES CORPORATION				Customer Rep: .						
Well Name: LEFFLER			Well #: 26C-23-L		API/UWI #: 05-123-44827-00					
Field: WATTENBERG		City (SAP): GREELEY		County/Parish: WELD		State: COLORADO				
Legal Description: SE NE-21-6N-66W-1821FNL-275FEL										
Contractor: PRECISION DRLG				Rig/Platform Name/Num: PRECISION 562						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB41307				Srv Supervisor: Nathaniel Moore						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		17950ft		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	LTC	J-55	0	1814	0	1814
Casing		5.5	4.778	20		P-110	0	17949	0	6707
Open Hole Section			8.5				1814	17949	1814	6707
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5					Top Plug	5.5		HES	
Float Shoe	5.5			17927		Bottom Plug	5.5		HES	
Float Collar	5.5					SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5		HES	
Stage Tool	5.5					Centralizers	5.5		HES	
Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Tuned Spacer III	Tuned Spacer III	40	bbl	11.5	3.8		6		
35.10 gal/bbl		FRESH WATER								
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								

147.42 lbm/bbl		BARITE, BULK (100003681)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	ElastiCem Lead	ELASTICEM (TM) SYSTEM	1040	sack	13.2	1.57		6	7.52
7.52 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	NeoCem	NeoCem TM	1269	sack	13.2	2.09		4	10.08
10.08 Gal		FRESH WATER							
0.30 %		SCR-100 (100003749)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	MMCR Displacement	MMCR Displacement	40	bbl	8.34				
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	Cla Web Displacement	Cla Web Displacement	395	bbl	8.33				
Cement Left In Pipe		Amount	ft		Reason			Shoe Joint	

20 bbl cement to surface. Pumped 6 bbl wet shoe.

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	DS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	8/21/2017	16:00:00	USER				OL time 1900. Verify equipment and materials
Event	2	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	8/21/2017	19:00:00	USER				Sign in with Customer. Spot in and rig up equipment. TD 17950' 8.5" hole. TP 17927' 5.5" 20# P-110. WSS 17825'. Surface 1802' 9.625" 36# J-55. MW 9.9 ppg. Water tested PH 7 CHlorides <100 Sulfates <200 Temp 67 deg.
Event	3	Pre-Job Safety Meeting	Pre-Job Safety Meeting	8/21/2017	20:45:00	USER	8.30	0.00	0.00	Discuss job procedure with HES and rig crew.
Event	4	Start Job	Start Job	8/21/2017	21:01:21	COM1	8.32	-2.00	0.00	
Event	5	Test Lines	Test Lines	8/21/2017	21:42:11	COM1	8.28	2044.00	0.00	Fill lines 3 bbl water. Test lines 500 psi kickout test and 5000 psi pressure test.
Event	6	Pump Spacer 1	Pump Spacer 1	8/21/2017	21:46:20	COM1	8.33	-6.00	0.00	40 bbl tuned spacer 11.5 ppg with surfactants. 3.8 ft3/sk 23.8 gal/sk
Event	7	Drop Bottom Plug	Drop Bottom Plug	8/21/2017	21:58:46	COM1	11.50	32.00	1.50	Witnessed by company rep
Event	8	Pump Lead Cement	Pump Lead Cement	8/21/2017	21:58:59	COM1	12.01	29.00	1.90	1040 sks/290 bbl ElastiCem 13.2 ppg 1.57 ft3/sk 7.52 gal/sk
Event	9	Check Weight	Check Weight	8/21/2017	22:00:00	USER	13.30	284.00	6.00	13.2 ppg
Event	10	Pump Tail Cement	Pump Tail Cement	8/21/2017	22:39:52	COM1	13.38	248.00	5.00	1269 sks/473 bbl NeoCem 13.2 ppg 2.09 gt3/sk 10.08 gal/sk

Event	11	Check Weight	Check weight	8/21/2017	22:41:56	COM1	13.34	648.00	8.10	13.2 ppg
Event	12	Shutdown	Shutdown	8/21/2017	23:43:36	COM1	13.48	4.00	0.00	Wash pumps and lines
Event	13	Drop Top Plug	Drop Top Plug	8/21/2017	23:52:04	COM1	7.93	6.00	0.00	Witnessed by company rep
Event	14	Pump Displacement	Pump Displacement	8/21/2017	23:52:25	COM1	7.95	-1.00	0.00	395 bbl water displacement with MMCR in first 40 bbl and Clawweb/Biocide throughout.
Event	15	Other	Spacer to surface	8/22/2017	00:26:47	COM1	7.98	2992.00	9.00	330 bbl into displacement. 40 bbl spacer back.
Event	16	Other	Cement to surface	8/22/2017	00:30:00	COM1	7.99	2920.00	8.90	370 bbl into displacement. 20 bbl cemen back.
Event	17	Bump Plug	Bump Plug	8/22/2017	00:35:59	COM1	7.98	2853.00	0.00	2300 psi final pump pressure. Pressured up to 2900 psi. Held 2 minutes and checked floats. 4 bbl back.
Event	18	Pressure Up Well	Pressure Up Well	8/22/2017	00:39:27	COM1	7.91	63.00	1.70	Shift wet shoe sub. 5080 psi to burst. Pumped 6 bbl wet shoe.
Event	19	Other	Check floats	8/22/2017	00:44:14	COM1	7.97	1964.00	0.00	2.5 bbl back. Floats held
Event	20	End Job	End Job	8/22/2017	00:45:29	COM1				Approx top of Tail cement 6358'. Lead to surface
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/22/2017	00:50:00	USER				
Event	22	Depart Location Safety Meeting	Depart Location Safety Meeting	8/22/2017	02:00:00	USER				



## 3.0 Attachments

### 3.1 Synergy Leffler 26C-23-L Production Job Chart

