

HALLIBURTON

iCem[®] Service

ENSIGN UNITED STATES DRILLING

Date: Sunday, December 21, 2014

Ensign SRC Gies T-15-22CHZ SURFACE

Sincerely,
Joshua Prudhomme

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **SRC Gies T-15-22CHZ** cement **Surface** 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.

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 [Brighton]

Job Times

	Date	Time	Time Zone
On Location	10/27/2014	06:30:00	MTN
Job Started	10/27/2014	11:36:42	MTN
Job Completed	10/27/2014	13:30:00	MTN

1.2 Cementing Job Summary

Sold To #: 301256		Ship To #: 3563501		Quote #:		Sales Order #: 0901779213				
Customer: ENSIGN UNITED STATES DRILLING				Customer Rep:						
Well Name: SRC GIES		Well #: T-15-22CHZ		API/UWI #: 05-123-40017-00						
Field: WATTENBERG		City (SAP): EATON		County/Parish: WELD		State: COLORADO				
Legal Description: SE SE-15-7N-65W-272FSL-1107FEL										
Contractor:				Rig/Platform Name/Num: ENSIGN 134						
Job BOM: 7521										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB60191				Srv Supervisor: Joseph Fantasia						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		657ft		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		J-55	0	657	0	657
Open Hole Section			13.5				0	670	0	670
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	9.625	1		657		Top Plug	9.625	1	HES	
Float Shoe	9.625	1				Bottom Plug	9.625	1	HES	
Float Collar	9.625	1				SSR plug set	9.625	1	HES	
Insert Float	9.625	1				Plug Container	9.625	1	HES	
Stage Tool	9.625	1				Centralizers	9.625	1	HES	
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 ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Mud Flush III (Powder)	Mud Flush III		20	bbl	8.4				
42 gal/bbl		FRESH WATER								
Fluid Data										
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	SwiftCem B2	SWIFTCEN (TM) SYSTEM	243	sack	13.4	1.79	9.48	4	9.48
9.48 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	Displacement	FRESH WATER	48	bbl	9				
Cement Left In Pipe		Amount	42 ft		Reason		Shoe Joint		
Comment 10 BBLS CEMENT TO SURFACE									

1.3 Planned Pumping Schedule

- 1. Fill Lines with Water**
 - a. Density = 8.33 lb/gal
 - b. Volume = 2 bbl
- 2. Pressure Test Lines to 2000psi**
- 3. Pump Fresh Water Spacer**
 - a. Density = 8.33 lb/gal
 - b. Volume = 10 bbl
 - c. Rate = 5 bpm
- 4. Pump Mud Flush Spacer**
 - a. Density = 8.4 lb/gal
 - b. Volume = 20 bbl
 - c. Rate = 5 bpm
- 5. Pump Fresh Water Spacer**
 - a. Density = 8.33 lb/gal
 - b. Volume = 10 bbl
 - c. Rate = 5 bpm
- 6. Pump SwiftCem (Lead)**
 - a. Density = 13.4 lb/gal
 - b. Yield = 1.79 ft³/sk
 - c. Water Requirement = 9.48 gal/sk
 - d. Volume = 243 sks (77.46 bbls)
 - e. Rate = 5 bpm
- 7. Drop Top Plug**
- 8. Start Displacement**
- 9. Pump Displacement**
 - a. Density = 9 lb/gal
 - b. Volume = 48 bbls
 - c. Rate = 5 bpm
- 10. Calculated Total Displacement = 48 bbls**

1.4 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Combined Pump Rate (bbl/min)	Downhole Density (ppg)	Pass-Side Pump Pressure (psi)	Comment
Event	1	Arrive at Location from Service Center	Arrive at Location from Service Center	10/27/2014	06:30:00	USER				ARRIVE AT LOCATION AT 0630. RIG ABOUT TO RUN CASING.PERFROM SITE ASSESSMENT WITRH CREW.
Event	2	Rig-up Lines	Rig-up Lines	10/27/2014	10:00:00	USER				PERFROM PRE RIG UP SAFETY MEETING PRIOR TO RIGGING UP EQUIPMENT.
Event	3	Start Job	Start Job	10/27/2014	11:36:42	COM4	0.00	8.20	38.00	PERFROM PRE JOB SAFETY MEETING WITH ALL PRESENT PERSONELL PRIOR TO JOB.
Event	4	Test Lines	Test Lines	10/27/2014	11:40:10	COM4	0.00	8.23	1970.00	PERSSURE TEST LINES TO 2000 PSI.
Event	5	Pump Spacer 1	Pump Spacer 1	10/27/2014	11:44:40	COM4	0.00	8.19	39.00	PUMP 10 BBLS WATER
Event	6	Pump Spacer 2	Pump Spacer 2	10/27/2014	11:47:36	COM4	4.00	8.19	94.00	PUMP 20 BBLS MUDFLUSH
Event	7	Pump Spacer 1	Pump Spacer 1	10/27/2014	11:54:15	COM4	2.60	8.18	79.00	PUMP 10 BBLS WATER WITH 2 LBS RED DYE ADDED
Event	8	Pump Lead Cement	Pump Lead Cement	10/27/2014	12:04:34	COM4	1.30	12.73	56.00	PUMP 77 BBLS (243 SKS) SWIFTCM MIXED AT 13.4 PPG USING SUPPLIED WATER. DENSITY VERIFIED BY SCALE.
Event	9	Shutdown	Shutdown	10/27/2014	12:24:56	COM4	0.00	13.08	44.00	
Event	10	Drop Top Plug	Drop Top Plug	10/27/2014	12:25:59	USER	0.00	12.77	32.00	TOP PLUG PRELOADED
Event	11	Pump Displacement	Pump Displacement	10/27/2014	12:27:00	COM4	0.00	12.84	32.00	GOOD RETURNS THROUGHOUT. CEMENT TO SURFACE AT 38 BBLS INTO 48 BBLS TOTAL DISPLACEMENT. APPROX 10 BBLS CEMENT TO

										SURFACE.
Event	12	Bump Plug	Bump Plug	10/27/2014	12:49:37	COM4	2.00	8.04	251.00	PLUG LANDED AT 251 PSI. PRESSURE BROUGHT TO 800 PSI AND HELD 5 MIN.
Event	13	Check Floats	Check Floats	10/27/2014	12:52:50	USER	0.00	8.04	813.00	FLOATS HELD. 1 BBL BACK
Event	14	End Job	End Job	10/27/2014	13:30:00	USER				PERFROM PRE RIG DOWN SAFETY MEETING PRIOR TO RIGGING DOWN EQUIPMENT.

2.0 Attachments

2.1 ENSIGN SRC GIES T-15-22CHZ SURFACE-Custom Results.png



