

FINAL OUT JOB
TICKET

HALLIBURTON

iCemSM Service

KGH OPERATING CO

For: TOM

Date: Sunday, September 13, 2015

BLANCO

CAPSTAR 314

KGH INTERMEDIATE 3-4

Job Date: Sunday, September 13, 2015

Sincerely,

JASON ERTL

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services for this cementing services 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, Rock Springs

Job Times

	Date	Time	Time Zone
Called Out	09/13/2015	0130	MST
On Location	09/13/2015	0900	MST
Job Started	09/13/2015	1800	MST
Job Completed	09/13/2015	2100	MST
Departed Location	09/13/2015	2200	MST

1.2 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	92
2	Mud type (OBM, WBM, SBM, Water, Brine)	lb/gal	WBM
3	Actual mud density	lb/gal	10.7
4	Time circulated before job	HH:MM	45 MIN
5	Mud volume circulated	Bbls	180BBLS
6	Rate at which well was circulated	Bpm	4
7	Pipe movement during hole circulation	Y/N	N
8	Rlg pressure while circulating	Psi	432
9	Time from end mud circulation to start of job	HH:MM	10MIN
10	Pipe movement during cementing	Y/N	N
11	Calculated displacement	Bbls	88.08
12	Job displaced by	Rlg/HES	HES
13	Annular before job)?	Y/N	N
14	Annular flow after job	Y/N	N
15	Length of rat hole	Ft	14
16	Units of gas detected while circulating	Units	0
17	Was lost circulation experienced at any time ?	Y/N	NO

Lost Circulation Details

1.3 Squeeze Job Information

		Units	Description
1	Was the well full prior to cementing?	Y/N	
2	Injection Rate #1 & Pressure	psi/bpm	
3	Injection Rate #2 & Pressure	psi/bpm	
4	Injection Rate #3 & Pressure	psi/bpm	
5	Initial ISIP	psi	
6	Density of fluid used for Initial ISIP	lb/gal	
7	Final ISIP	psi	
8	Density of displacement fluid	lb/gal	

1.4 Plug Job Information

		Units	Description
1	Density of well fluid exiting well prior to job	lb/gal	
2	Density of well fluid entering well prior to job	lb/gal	
3	Was the well full prior to cementing?	Y/N	
4	How many joints of workstring pulled wet?	# Joints	
5	Depth of workstring for circulation after the plug?	ft	
6	Calculated Plug Height (workstring out)	ft	

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(v. 4.1.107)

Created: Sunday, September 13, 2015

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Customer: KGH OPERATING CO

Job: 902745335

Case: KGH CAPSTAR 314 INTERMEDIATE | SO#: 902745335

1.5 Water Analysis Report

CEMENT MIX WATER REQUIREMENTS

Item	Recorded Test Value	Units	Max. Acceptable Limit	Potential Problems in Exceeding Limit
pH	7	—	6.0 - 8.0	Chemicals in the water can cause severe retardation
Chlorides	0	ppm	3000 ppm	Can shorten thickening time of cement
Sulfates	<200	ppm	1500 ppm	Will greatly decrease the strength of cement
Total Hardness	25	ppm	500 mg/L	High concentrations will accelerate the set of the cement
Calcium	0	ppm	500 ppm	High concentrations will accelerate the set of the cement
Total Alkalinity	120	ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all (typically occurs @ pH ≥ 8.3).
Potassium	0	ppm	5000 ppm	High concentrations will shorten the pump time of cement (indicates the presence of chlorides, therefore if Potassium levels are measured as high, so should the chlorides)
Iron	0	ppm	300 ppm	High concentrations will accelerate the set of the cement
Temperature	79	°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather
Magnesium	25	ppm	300 ppm	High concentrations will accelerate the set of the cement Calculation Method: Subtract tested "Calcium" value from "Total Hardness" value.

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2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Driv-Side Pump Pressure (psf)	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	9/13/2015	01:30:00	USER				HES CREW CALLED OUT AT 0130 ON 09/13/2015, REQUESTED ON LOCATION AT 0830 ON 09/13/2015
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	9/13/2015	02:30:00	USER				HES CREW DISCUSSED THE HAZARDS OF DRIVING TO LOCATION
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	9/13/2015	02:45:00	USER				HES CREW DEPART FOR LOCATION
Event	4	Arrive At Loc	Arrive At Loc	9/13/2015	09:00:00	USER				HES CREW ARRIVES AT LOCATION
Event	5	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	9/13/2015	09:15:00	USER				HES CREW DISCUSSED THE HAZARDS OF SPOTTING EQUIPMENT
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	9/13/2015	09:20:00	USER				HES CREW DISCUSSED THE HAZARDS OF RIGGING UP ALL LINES AND EQUIPMENT
Event	7	Rig-Up Equipment	Rig-Up Equipment	9/13/2015	09:30:00	USER				RIG UP EQUIPMENT
Event	8	Wait on Customer or Customer Sub-Contractor Equip - Start Time	Wait on Customer or Customer Sub-Contractor Equip - Start Time	9/13/2015	09:45:00	USER				WAIT FOR CUSTOMER TO FINISH RUNNING CASING
Event	9	Wait on Customer or Customer Sub-Contractor Equipment - End Time	Wait on Customer or Customer Sub-Contractor Equipment - End Time	9/13/2015	18:00:00	USER	11.00	8.50	0.00	CASING ON BOTTOM AT 1730. RIG CURCULATED AT 4.88LS/MIN FOR
Event	10	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/13/2015	18:15:00	USER	3.00	8.48	0.00	HES AND RIG CREW DISCUSSED THE HAZARDS

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Job: 902745335

Case: KGH CAPSTAR 314 INTERMEDIATE | SO#: 902745335

OF RIGGING UP THE RIG
FLOOR AND BRINGING
EQUIPMENT UP TO FLOOR
AS WELL AS PUMPING THE
JOB

Event 11	Rig-Up Completed	Rig-Up Completed	9/13/2015	18:30:00	USER	5.00	8.43	0.00	RIG UP COMPLETE
Event 12	Pump Water	Pump Water	9/13/2015	18:44:44	USER	414.00	8.18	2.00	PUMP 5 BBLs OF H2O TO FILL PUMPS AND LINES
Event 13	Shutdown	Shutdown	9/13/2015	18:46:46	USER	338.00	8.16	0.00	SHUTDOWN
Event 14	Pressure Test	Pressure Test	9/13/2015	18:48:13	USER	783.00	8.20	0.00	500 PSI LOW PRESSURE KICKOUT TEST
Event 15	Pressure Test	Pressure Test	9/13/2015	18:50:45	USER	6046.00	8.34	0.00	PRESSURE TEST HES IRON TO 5000 PSI
Event 16	Pump Spacer	Pump Spacer	9/13/2015	18:57:32	USER	543.00	11.06	4.10	PUMP 30 BBLs OF TUNED SPACER III AT 11.0 LB/GAL
Event 17	Pump Lead Cement	Pump Lead Cement	9/13/2015	19:10:00	USER	523.00	11.16	4.00	PUMP 185 SKS OF ECONOCEM -LEAD 1 AT 11.0 LB/GAL, 3.51 CUFT/SK, 21.14 GAL/SK AT 6 BPM
Event 18	Pump Tail Cement	Pump Tail Cement	9/13/2015	19:38:52	USER	355.00	14.05	4.00	PUMP 105 SKS OF EXPANDCEM -TAIL AT 14.0 LB/GAL, 1.35 CUFT/SK, 5.82 GAL/SK AT 6 BPM
Event 19	Shutdown	Shutdown	9/13/2015	19:45:19	USER	131.00	14.08	0.00	SHUTDOWN/COMPANY MAN WITNESSED HES PLUG DROP
Event 20	Pump Displacement	Pump Displacement	9/13/2015	19:46:56	USER	56.00	13.68	3.90	PUMP 88.08 BBLs OF DISPLACEMENT FIRST 10 WATER, 58.08 MUD AND LAST 20 BBLs WATER
Event 21	Slow Rate	Slow Rate	9/13/2015	20:10:00	USER	561.00	8.87	2.00	SLOW RATE TO 2 BPM LAST 20 BBLs
Event 22	Bump Plug	Bump Plug	9/13/2015	20:13:42	USER	759.00	8.56	2.00	BUMP PLUG AND BRING

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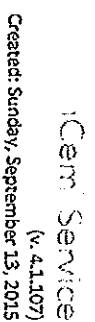
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PRESSURE 500 PSI OVER F.C.P									
Event	23	Pressure Test	Pressure Test	9/13/2015	20:16:13	USER	3492.00	8.61	0.00
PRESSURE TEST CASING TO 3200 FO 30 MIN									
Event	24	Check Floats	Check Floats	9/13/2015	20:39:40	USER	2260.00	8.66	0.00
FLOATS HELD WITH 1 BBLs BACK TO HES CEMENT PUMP									
Event	25	End Job	End Job	9/13/2015	20:40:00	COM10	21.00	8.62	0.00
END JOB									
Event	26	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/13/2015	20:49:41	USER	181.00	8.63	0.00
HES AND RIG CREW DISCUSS THE HAZARDS OF RIGGING DOWN EQUIPMENT AND BRINGING EQUIPMENT DOWN FROM RIG FLOOR AS WELL AS LOADING IT INTO THE BACK OF THE TRUCK									
Event	27	Rig-Down Equipment	Rig-Down Equipment	9/13/2015	20:52:28	USER	21.00	8.43	2.00
RIG DOWN EQUIPMENT									
Event	28	Depart Location Safety Meeting	Depart Location Safety Meeting	9/13/2015	21:32:55	USER			
HES CREW DISCUSSED THE HAZARDS OF DRIVING									
Event	29	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	9/13/2015	21:40:15	USER			
HES DEPARTS LOCATION									
Event	30	Job Complete	Job Complete	9/13/2015	21:45:46	USER			
JOB COMPLETE, 35 BBLs OF LEAD BACK TO SURFACE, EST. TOP OF TAIL AT 4260 FT, THANKS FROM HALLBURTON									

Customer: KGH OPERATING CO
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Case: KGH CASTAR 314 INTERMEDIATE | SO#: 902745335

3.1 KGH CAPSTAR 314 INTERMEDIATE-WITH EVENTS.png



Customer: KGH OPERATING CO

Job: 902745335

Case: KGH CAPSTAR 314 INTERMEDIATE | SO#: 902745335



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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 303302	Ship To #: 3660009	Quote #: 0022101480	Sales Order #: 0902745335
Customer: KGH OPERATING CO		Customer Rep: TOM	
Well Name: MEAGHER	Well #: 3-4	API/UWI #: 05-103-12265-00	
Field: BLANCO	City (SAP): RANGELY	County/Parish: RIO BLANCO	State: COLORADO
Legal Description: 3-1S-104W-3082FNL-730FEL			
Contractor: CAPSTAR DRLG		Rig/Platform Name/Num: CAPSTAR 314	
Job BOM: 7521			
Well Type: VERTICAL GAS			
Sales Person: HALAMERICA\HB72042		Srv Supervisor: Jason Ertl	
Job			

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	5725ft		Job Depth TVD
Water Depth			Wk Ht Above Floor 4
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		7	6.366	23			0	1009		
Casing		4.5	4	11.6			0	5725	0	
Open Hole Section			6.125				1009	5739		

Tools and Accessories

Type	Size In	Qty	Make	Depth ft	Type	Size In	Qty	Make
Guide Shoe	4.5			5725	Top Plug	4.5	1	HES
Float Shoe	4.5				Bottom Plug	4.5		HES
Float Collar	4.5				SSR plug set	4.5		HES
Insert Float	4.5				Plug Contalner	4.5	1	HES
Stage Tool	4.5				Centralizers	4.5		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	11 lb/gal Tuned Spacer III	Tuned Spacer III	30	bbl	11	4.69		4	
37 gal/bbl		FRESH WATER							
119.62 lbm/bbl		BARITE, 100 LB SK (100003680)							
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

last updated on 9/13/2015 9:26:44 PM

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Cementing Job Summary

2	EconoCem	ECONOCEM (TM) SYSTEM	185	sack	11	3.51		4	21.14
5 lbm		KOL-SEAL, 50 LB BAG (100064232)							
0.25 lbm		POLY-E-FLAKE (101216940)							
1 lbm		GRANULITE TR 1/4, 50 LB SK (100064073)							
21.14 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	ExpandaCem	EXPANDACEM (TM) SYSTEM	105	sack	14	1.35		4	5.82
1 lbm		GRANULITE TR 1/4, 50 LB SK (100064073)							
47 lbm		CEMENT STANDARD TYPE II/V, BULK (101809640)							
5.82 Gal		FRESH WATER							
2 lbm		KOL-SEAL, 50 LB BAG (100064232)							
0.25 lbm		POLY-E-FLAKE (101216940)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	Displacement Water	Displacement Water	10	bbl	8.34			4	
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	WBM Displacement		58.08	bbl	10			4	
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
6	Displacement Water	Displacement Water	20	bbl	8.34			4	
Cement Left In Pipe		Amount	42.21ft	Reason				Shoe Joint	

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Summary Report

Crew: _____
Job Start Date: 9/13/2015

Sales Order #: 0902745335
WO #: 0902745335
PO #: NA
AFE #:

Customer: KGH OPERATING CO

Field: BLANCO

Job Type: CMT SURFACE
CASING BOM

UWI / API Number: 05-103-12265-00

County/Parish: RIO BLANCO

Service Supervisor: Jason Erl

Well Name: MEAGHER

State: COLORADO

Well No: 3-4

Latitude: 39.998960

Longitude: -109.048193

Cust Rep Name: TOM

Sect / Twn / Rng: 3/1/104

Cust Rep Phone#:

Remarks:

The Information Stated Herein is Correct

Customer Representative Signature

Date

Customer Representative Printed Name