

# Casing Cementing



Company: MEMORIAL RESOURCE DEVELOPMENT LLC

Well Name: MSSU 31-2 #0631644434

Field: MSSU

County: Larimer

State: CO

Date: 7/6/2015

Well Location:

Well Number (API): 05-069-06317

Proposal Number: 1

Contact:

Made By: Michelle Woods

Service from District: Cheyenne, WY

District Phone: 701-572-8393

Objective: Perform Circulation Squeeze per Client Request  
150 sk 15.8 ppg Cement

## Disclaimer Notice

Schlumberger submits this document with the benefit of its judgment, experience, and good oilfield practices. This information is provided in accordance with generally accepted industry practice, relying on facts or information provided by others, limitations, computer models, measurements, assumptions and inferences that are not infallible.

Calculations are estimates based on provided information. All proposals, recommendations, or predictions are opinions only.

NO WARRANTY IS GIVEN CONCERNING ACCURACY OR COMPLETENESS OF DATA, INFORMATION PRESENTED, EFFECTIVENESS OF MATERIAL, PRODUCTS OR SUPPLIES, RECOMMENDATIONS MADE, OR RESULTS OF THE SERVICES RENDERED.

Freedom from infringement of any intellectual property rights of Schlumberger or others is not to be inferred and no intellectual property rights are granted hereby.

# Schlumberger



## EXECUTIVE SUMMARY

Enclosed are our recommendations for Schlumberger intervention on the referenced well. The proposal includes well data, design data, materials and resources requirements and cost estimates. The purpose of our services is to perform a Casing Cementing treatment.

Schlumberger has established a safety policy to which all Schlumberger personnel must adhere. A pre-job safety meeting will be held with customer representatives and other on location personnel to familiarize everyone with existing hazards and safety procedures. We would appreciate close cooperation between the customer representative and the Schlumberger representative to ensure a safe operation.

The estimated total cost of our services is **\$ 9,197.27**. All costs are estimates only. Actual costs will be determined by time, material and equipment used during treatment. Taxes are not included. All work will be subject to Schlumberger then-current General Terms and Conditions or to the terms and conditions of a Master Service Agreement if one is in force between Schlumberger and Customer. This quote is valid for a period of thirty (30) days from the date submitted.

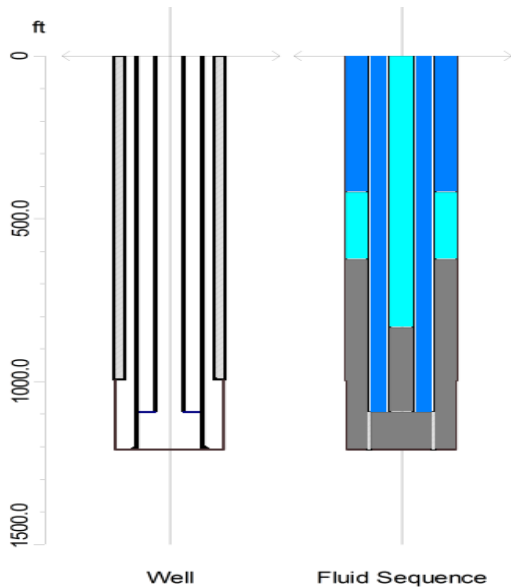
Thank you for considering Schlumberger.  
Please do not hesitate to contact me with any questions or concerns.

Sincerely,

Michelle Woods  
906-281-6593  
mwoods6@slb.com



## WELL DATA



### IMPORTANT:

The well data shown on this page is based on information available when this treatment program was prepared. This data must be confirmed on location with the wellsite supervisor prior to the treatment. Any changes in the well data need to be reviewed for their impact on the treatment design.

Fluid Placement			
Fluid Name	Volume bbl	Density lb/gal	Top of Fluid ft
Freshwater	10.0	8.32	419.1
15.8ppg Tail Slurry	30.0	15.80	627.8
15.8ppg Tail Slurry	1.0	15.80	837.4
Freshwater	3.2	8.32	0.0

Total Liquid Volume : 44.2 bbl

Well Data	
Job Type :	Casing Cementing
Total Depth (Measured) :	1210.0 ft
True Vertical Depth (TVD) :	1210.0 ft
BHST (Tubular Bottom Static Temperature) :	99 degF
BHCT (Tubular Bottom Circulating Temperature) :	81 degF

Open Hole		
Mean Diameter without Excess	Bottom Depth	Annular Excess
8.750 in	1210.0 ft	0.00 %

Previous Casing					
OD	Weight	Grade	Thread	Inner Capacity	Bottom Depth
7 in	36.0 lb/ft	J-55	BTC	0.43 ft <sup>3</sup> /ft	1000.0 ft

Drill Pipe					
OD	Weight	Grade	Thread	Inner Capacity	Bottom Depth
2 3/8 in	4.7 lb/ft	J-55	EUE	0.02 ft <sup>3</sup> /ft	1096.0 ft

Casing					
OD	Weight	Grade	Thread	Inner Capacity	Bottom Depth
5 1/2 in	15.5 lb/ft	J-55	BTC	0.13 ft <sup>3</sup> /ft	1210.0 ft

Annular Capacity (without Excess) : Casing Bottom / Open Hole : 0.25 ft<sup>3</sup>/ft

Annular Capacity (without Excess) : Previous Casing Bottom / Casing : 0.27 ft<sup>3</sup>/ft



## FLUID SYSTEMS

Freshwater			
<b>System</b>	Freshwater		
<b>Density</b>	8.32 lb/gal		
<b>Total Volume</b>	13.2 bbl		
Additives	Code	Description	Concentration
15.8ppg Tail Slurry (151 sacks, 94 lb per sack of Blend)			
<b>System</b>	Conventional		
<b>Density</b>	15.80 lb/gal		
<b>Yield</b>	1.16 ft <sup>3</sup> /sk		
<b>Mix Water</b>	5.133 gal/sk		
<b>Mix Fluid</b>	5.133 gal/sk		
<b>Total Volume</b>	31.0 bbl		
<b>Expected Thickening Time</b>	98 Bc at 04:10 hr:mn		
Additives	Code	Description	Concentration
	G	Cement	94.016 lb/sk WBWOB

Some of the chemicals specified in this program may have toxic properties. All personnel should be familiar with the inherent dangers and appropriate safeguards to prevent accidental injury. Use of the chemicals may be governed by certain laws and regulations and should only be used in accordance with such. Please refer to the MSDS sheets for the recommended safety precautions and required minimum personal protective equipment.



## PROCEDURES

1. MI (Move in) Schlumberger equipment.
2. Conduct Rig-up, Prime-up and pressure test safety meeting.
3. RU (Rig up) Schlumberger equipment and pressure test to customer master valve.
4. Conduct pre-job safety meeting.
  
5. Perform treatment per design pumping schedule and instructions of client representative.
6. 10 bbl Fresh Water @ 2 BPM to establish circulation
7. 31 bbl Squeeze Slurry 15.8 ppg @ 2 BPM
  - Dumb 1 bbl on top of retainer while POOH
8. 15 bbl FW displacement @ 2 BPM
9. Max/Min Pump Rate: 2 BPM
  
10. Max/Min Density Tolerance:  $\pm 0.2$  ppg
11. Max Shut Down Time: 20 minutes
12. Conduct post job rig down meeting.
13. Rig down Schlumberger equipment.
14. Conduct convoy meeting and move out Schlumberger equipment.



## PRICE ESTIMATE

Equipment and Services						
Code	Standard Description	Quantity	Unit List Price	Total List Price \$	Discount Rate	Discounted Price \$
48019000	Bulk Unit	4 HR	173.00	692.00	37 %	435.96
48601000	Cementing Well Head Hardware	1 JOB	640.00	640.00	37 %	403.20
49100000	Cement Service Charge	151 CF	2.80	422.80	37 %	266.36
49102000	Cement Transport	319 MI	2.50	797.50	37 %	502.43
59200002	Equipment Mileage	90 MI	5.91	531.90	37 %	335.10
59200005	Car/PU Mileage	90 MI	3.47	312.30	37 %	196.75
59697004	Job Monitoring	1 JOB	880.00	880.00	37 %	554.40
102872025	Pump, Liner/Sqz/Plug 2001-2500 ft	1 EA	3,569.00	3,569.00	37 %	2,248.47
102946000	Fuel Surcharge	2 EA	450.00	900.00	0 %	900.00
107264001	DOT Vehicle Charge	2 EA	365.00	730.00	0 %	730.00

**Subtotals:           \$ 9475.50           \$ 6,572.66**

Materials						
Code	Standard Description	Quantity	Unit List Price	Total List Price \$	Discount Rate	Discounted Price \$
D907	Cement Class G	151 CF	27.80	4,197.80	37 %	2,644.61

**Subtotals:           \$ 4,197.80           \$ 2,644.61**

Total Discount:	\$	4,652.84
<b>Job Price Estimate*:</b>	<b>\$</b>	<b>9197.27</b>