
From: Jesse Gagliano
Sent: Thursday, January 28, 2010 12:47 PM
To: Anthony Cupit; Christopher Haire; Deepwater Horizon (BP); Jason Fleming; Vincent Tabler
Cc: Danny Mooney; Mike Stidham; Kathryn Miller
Subject: Macondo Well
Attachments: MC 252_Macondo BoD_16 in Liner_v3_CustomerCopy.pdf

Attached is the proposal for the 16" Liner on Macondo. Looking ahead, below is what I think we will need for the next couple of stings.

16" Liner

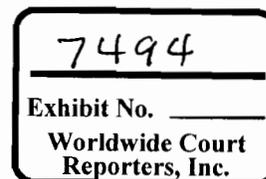
170 bbls of TS III (YP=32) + 1.3 gal/bbl SEM-8
750 sacks of Prem + .07% EZ-Flo + .25% D-Air 3000 + 1.88 lb/sk KCL + 8 GPHS Halad 344 EXP + 5 GPHS HR-6L

13 5/8" Liner

150 bbls of TS III + 1.3 gal/bbl SEM-8
550 sacks of Prem + .07% EZ-Flo + .25% D-Air 3000 + 1.88 lb/sk KCL + 10 GPHS Halad 344 EXP + 8 GPHS SCR-100L

We have a 11 7/8" Liner contingency that is up in the air and plan on foaming the 9 7/8" Production Casing if the well is a find. When we get onto the Macondo well we will have to drill out the 18" shoe and do a LOT. There is a slim possibility we will have to squeeze. Go ahead and order the cement for the next two strings (about 1300 usable sacks) and inventory the spacer and chemical you need. We want to try and get the revenue from this load out on the books before the end of the month. I know we will have some cement left over from the Kodiak well, but go ahead and order 1300 sacks anyway. Whatever is left over after the Macondo well can be used on the Nile P&A. Let me know if you have any questions. Thanks!!

Jesse Gagliano
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***Bp America Prod Co-sorac/gom Ebiz
PO Box 22024 - Do Not Mail
Tulsa, Oklahoma 74121-2024***

Macondo Prospect 1

United States of America

16" Liner

Prepared for: Brian Morel

Version: 3

Submitted by:
Jesse Gagliano
Halliburton
10200 Bellaire Blvd
Houston, Texas 77072-5299

HALLIBURTON

Halliburton appreciates the opportunity to present this proposal and looks forward to being of service to you.

Foreword

Enclosed is our recommended procedure for cementing the casing strings in the referenced well. The information in this proposal includes well data, calculations, materials requirements, and cost estimates. This proposal is based on information from our field personnel and previous cementing services in the area.

Halliburton Energy Services recognizes the importance of meeting society's needs for health, safety, and protection of the environment. It is our intention to proactively work with employees, customers, the public, governments, and others to use natural resources in an environmentally sound manner while protecting the health, safety, and environmental processes while supplying high quality products and services to our customers.

We appreciate the opportunity to present this proposal for your consideration and we look forward to being of service to you. Our Services for your well will be coordinated through the Service Center listed below. If you require any additional information or additional designs, please feel free to contact myself or our field representative listed below.

Prepared and Submitted by: _____
Jesse Gagliano
Technical Advisor

SERVICE CENTER: Lafayette, La

SERVICE COORDINATOR: Danny Mooney
OPER. ENGINEER: Yarigsa Aviles
PHONE NUMBER: 1-800-444-7830

Job Information**16" Liner**

Well Name: Macondo Prospect	Well #: 1
Riser	0 - 5067 ft (MD)
Outer Diameter	24.000 in
Inner Diameter	19.500 in
22" Casing	5067 - 7947 ft (MD)
Outer Diameter	22.000 in
Inner Diameter	19.500 in
Linear Weight	277.01 lbm/ft
18" Liner	7503 - 8983 ft (MD)
Outer Diameter	18.000 in
Inner Diameter	16.750 in
Linear Weight	117 lbm/ft
20" Open Hole	8983 - 12250 ft (MD)
Inner Diameter	20.000 in
Job Excess	15 %
Landing String	0 - 5067 ft (MD)
Outer Diameter	6.625 in
Inner Diameter	5.375 in
16" Casing	5067 - 12250 ft (MD)
Outer Diameter	16.000 in
Inner Diameter	14.850 in
16" Innerstring	5067 - 12100 ft (MD)
Outer Diameter	5.500 in
Inner Diameter	4.778 in
Linear Weight	21.90 lbm/ft
Water Depth	4992 feet
Air Gap	75 feet
Mud Type	Synthetic
Mud Weight	11.80 lbm/gal
BHST	162 degF

Spacer:

$$\begin{aligned} 1057.00 \text{ ft} * 0.7854 \text{ ft}^3/\text{ft} * 15 \% &= 954.69 \text{ ft}^3 \\ \text{Total Spacer} &= 954.48 \text{ ft}^3 \\ &= 170.00 \text{ bbl} \end{aligned}$$

Cement: (750.00 ft fill)

$$\begin{aligned} 600.00 \text{ ft} * 0.7854 \text{ ft}^3/\text{ft} * 15 \% &= 541.92 \text{ ft}^3 \\ 150.00 \text{ ft} * 0.7854 \text{ ft}^3/\text{ft} * 15 \% &= 135.48 \text{ ft}^3 \\ \text{Tail Cement} &= 677.41 \text{ ft}^3 \\ &= 120.65 \text{ bbl} \end{aligned}$$

Shoe Joint Volume: (100.00 ft fill)

$$\begin{aligned} 100.00 \text{ ft} * 1.2028 \text{ ft}^3/\text{ft} &= 120.28 \text{ ft}^3 \\ &= 21.42 \text{ bbl} \\ \text{Tail plus shoe joint} &= 797.68 \text{ ft}^3 \\ &= 142.07 \text{ bbl} \\ \text{Total Tail} &= 735 \text{ sks} \end{aligned}$$

Total Pipe Capacity:

$$\begin{aligned} 5067.00 \text{ ft} * 0.1576 \text{ ft}^3/\text{ft} &= 798.43 \text{ ft}^3 \\ 7033.00 \text{ ft} * 0.1245 \text{ ft}^3/\text{ft} &= 875.71 \text{ ft}^3 \\ 150.00 \text{ ft} * 1.2028 \text{ ft}^3/\text{ft} &= 180.41 \text{ ft}^3 \\ &= 330.31 \text{ bbl} \end{aligned}$$

Displacement Volume to Shoe Joint:

$$\begin{aligned} \text{Capacity of Pipe - Shoe Joint} &= 330.31 \text{ bbl} - 21.42 \text{ bbl} \\ &= 308.89 \text{ bbl} \end{aligned}$$

Job Recommendation

16" Liner

Fluid Instructions

Fluid 1: Water Based Spacer

TUNED SPACER III - YP = 32

1.3 gal/bbl SEM-8 (Surfactant)

Fluid Density: 12.50 lbm/gal

Fluid Volume: 170 bbl

Fluid 2: Tail Cement

Premium Cement

94 lbm/sk Premium Cement (Cement)

0.07 % Halliburton EZ-FLO (Bulk Flow Enhancer)

0.25 % D-AIR 3000 (Defoamer)

1.88 lbm/sk KCL (Clay Control)

0.08 Gal/sk Halad(R)-344 EXP (Low Fluid Loss Control)

0.05 Gal/sk HR-6L (Retarder)

4.29 Gal/sk Fresh Water (Mixing Fluid)

Fluid Weight 16.40 lbm/gal

Slurry Yield: 1.09 ft³/sk

Total Mixing Fluid: 4.42 Gal/sk

Top of Fluid: 11500 ft

Calculated Fill: 750 ft

Volume: 142.07 bbl

Calculated Sacks: 735.19 sks

Proposed Sacks: 740 sks

Fluid 3: Mud

SBM

Fluid Density: 11.80 lbm/gal

Fluid Volume 308.89 bbl

Detailed Pumping Schedule

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Estimated Avg Rate bbl/min	Downhole Volume
1	Spacer	TUNED SPACER III - YP = 32	12.5	7.0	170 bbl
2	Cement	Tail Cement	16.4	5.0	740 sks
3	Mud	SBM	11.8	10.0	308.89 bbl

Hold safety meeting to discuss running and cementing the 16 in liner

1. Rig up and run 16 in Liner.
2. Insure that Cement Stand has been prepared and stood back with TIW above and below Side Door sub.
3. When preparing to P/U cement stand insure that hand is in riding belt to make up chickens to cement stand.
4. Once Lines are made up assure that TIW is closed on top of side door sub and lower TIW is open to allow circulation.
5. Have hand come out of derrick.
6. Have Cementer break circulation and circulate well.
7. Once circulation is established shut down and have hand close valve on cement line.
8. Remove all those from the rig floor and test lines to 5000 psi. Hold test for at least 3 minutes.
9. After test bleed pressure back and then have hand open valve.
10. Break circulation with spacer and begin injection of surfactant package into spacer.
11. Pump 170bbls of Tuned Spacer @ 12.5 ppg.
12. Once spacer has been pumped begin weight up of cement.
13. Pump 740 sks of Cement @ 16.4 ppg as pr lab results.
14. Begin displacement with mud and bring rate to 10-12 bpm.

15. Slow down to 3 bpm for the last 30 bbls. Complete displacement and shut down and check floats.
16. Release running tool and P/U ten stands. Upon breaking connection place Wiper Ball in connection and pump through landing and inner string.
17. Once complete POOH.

Cost Estimate**16" Liner****SAP Quote # 0**

<u>Mtrl Nbr</u>	<u>Description</u>	<u>Qty</u>	<u>U/M</u>	<u>Unit Price</u>	<u>Net Amt</u>
7524	CMT DRILLING LINER BOM	1	JOB		0.00
	Spacer Material				
483826	TUNED SPACER III	170	BBL	122.28	20,787.60
101235090	SEM-8	221	GAL	47.45	10,486.45
	Cement Material				
100003687	PREMIUM CEMENT	740	SK	14.72	10,892.80
101002314	EZ-FLO	49	LB	10.57	517.93
101007446	D-AIR 3000	174	LB	4.31	749.94
100001585	KCL POTASSIUM CHLORIDE	1392	LB	0.55	765.60
101249405	HALAD-344 EXP	60	GAL	125.71	7,542.60
100005058	HR-6L RETARDER	37	GAL	22.89	846.93
	Total		USD		52,589.85

Conditions

NOTE

The cost in this analysis is good for the materials and/or services outlined within. These prices are based on Halliburton being awarded the work on a first call basis. Prices will be reviewed for adjustments if awarded on 2nd or 3rd call basis and/or after 30 days of this written analysis. This is in an effort to schedule our work and maintain a high quality of performance for our customers.

The unit prices stated in the proposal are based on our current published prices. The projected equipment, personnel, and material needs are only estimates based on information about the work presently available to us. At the time the work is actually performed, conditions then existing may require an increase or decrease in the equipment, personnel, and/or material needs. Charges will be based upon unit prices in effect at the time the work is performed and the amount of equipment, personnel, and/or material actually utilized in the work. Taxes, if any, are not included. Applicable taxes, if any, will be added to the actual invoice.

It is understood and agreed between the parties that with the exception of the subject discounts, all services performed and equipment and materials sold are provided subject to Halliburton's General Terms and Conditions contained in our current price list, (which include LIMITATION OF LIABILITY and WARRANTY provisions), and pursuant to the applicable Halliburton Work Order Contract (whether or not executed by you), unless a Master Service and/or Sales Contract applicable to the services, equipment, or materials supplied exists between your company and Halliburton, in which case the negotiated Master Contract shall govern the relationship between the parties. A copy of the latest version of our General Terms and Conditions is available from your Halliburton representative or at:

http://www.halliburton.com/hes/general_terms_conditions.pdf for your convenient review, and we would appreciate receiving any questions you may have about them. Should your company be interested in negotiating a Master Contract with Halliburton, our Law Department would be pleased to work with you to finalize a mutually agreeable contract. In this connection, it is also understood and agreed that Customer will continue to execute Halliburton usual field work orders and/or tickets customarily required by Halliburton in connection with the furnishing of said services, equipment, and materials.

Any terms and conditions contained in purchase orders or other documents issued by the customer shall be of no effect except to confirm the type and quantity of services, equipment, and materials to be supplied to the customer.

If customer does not have an approved open account with Halliburton or a mutually executed written contract with Halliburton, which dictates payment terms different than those set forth in this clause, all sums due are payable in cash at the time of performance of services or delivery of equipment, products, or materials. If customer has an approved open account, invoices are payable on the twentieth day after date of invoice.

Customer agrees to pay interest on any unpaid balance from the date payable until paid at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event Halliburton employs an attorney for collection of any account, customer agrees to pay attorney fees of 20% of the unpaid account, plus all collection and court costs.