

From: Jesse Gagliano
Sent: Mon Mar 08 16:33:56 2010
To: Hafle, Mark E; Morel, Brian P
Cc: Cocales, Brett W
Subject: OptiCem Run
Importance: Normal
Attachments: image003.jpg; image002.jpg; image001.jpg; Pilot Test BC19-65112.3.pdf

Below are the ECD graphs for setting the 11 7/8" Liner @ 15500'. The parameters used to run the simulations are

Mud Weight - 14.3 ppg
Spacer - 14.5 ppg
Cement - Base weight 16.74 ppg, foamed to 14.5 ppg
TOC - 17900'

I've updated the RPMs for the cement with the data from the pilot test and added a cap cement (un-foamed) about 5 bbls ahead to this model. I've attached the lab test for your review. Let me know if you have any questions. Thanks!!

ECD Graph @ Previous Shoe with 20 bbls base oil ahead

ECD Graph @ 17900' with 20 bbls base oil ahead

ECD Graph @ TD with 20 bbls base oil ahead

Jesse Gagliano
Halliburton Energy Services
Account Representative - Cementing
Office - 281-366-6106
Cell - 281-635-4798
Fax - 713-583-9700
E-mail - jesse.gagliano@halliburton.com

This e-mail, including any attached files, may contain confidential and privileged information for the sole use of the intended recipient. Any review, use, distribution, or disclosure by others is strictly prohibited. If you are not the intended recipient (or authorized to receive information for the intended recipient), please contact the sender by reply e-mail and delete all copies of this

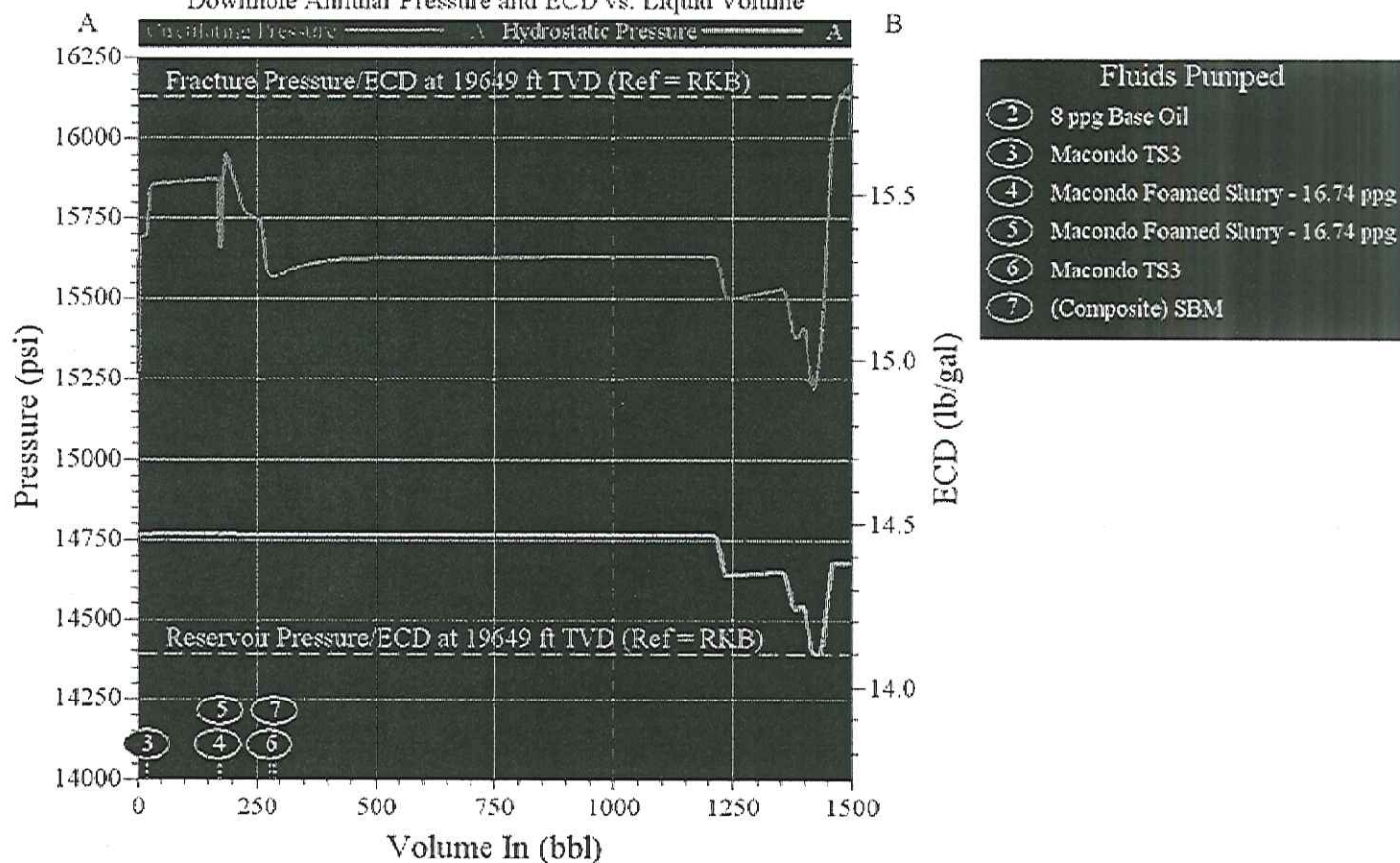


message.

OptiCem

Circulating Pressure and Density at Fracture Zone

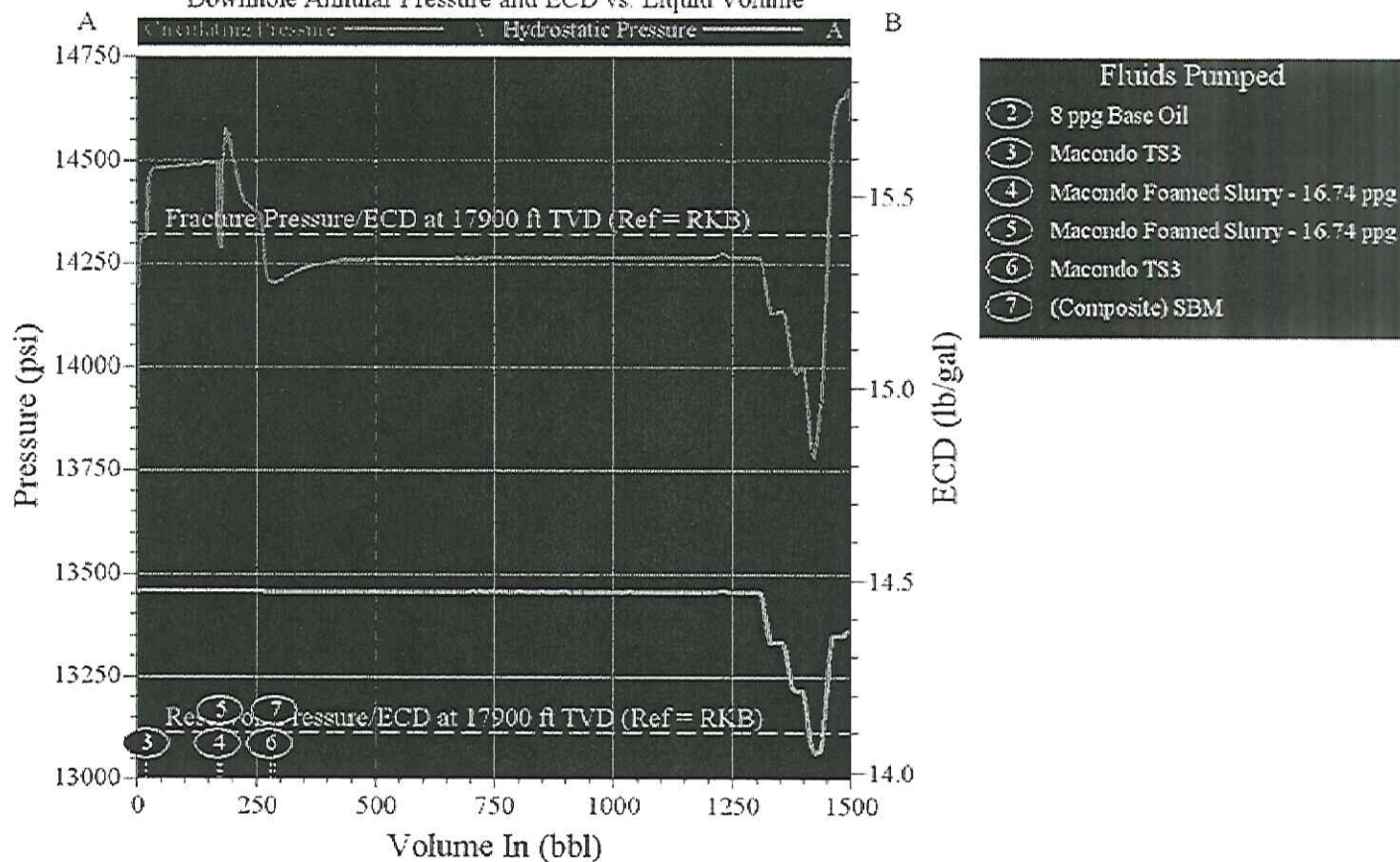
Downhole Annular Pressure and ECD vs. Liquid Volume



OptiCem

Circulating Pressure and Density at Fracture Zone

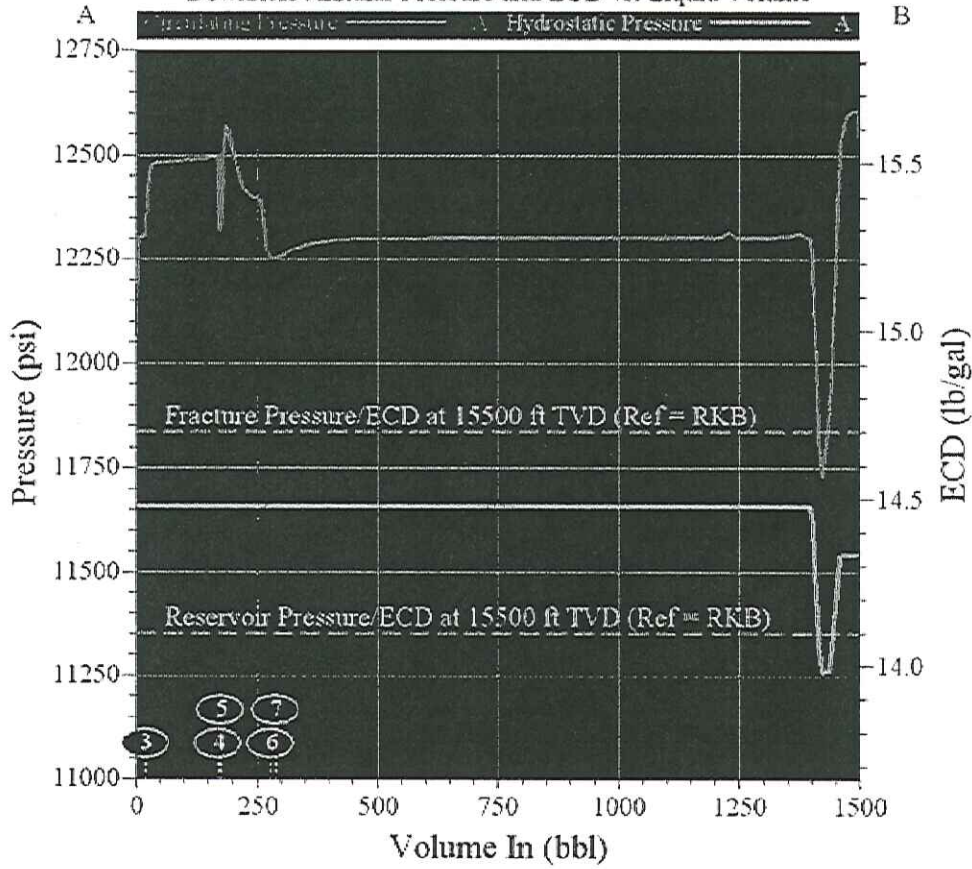
Downhole Annular Pressure and ECD vs. Liquid Volume



OptiCem

Circulating Pressure and Density at Reservoir Zone

Downhole Annular Pressure and ECD vs. Liquid Volume



- Fluids Pumped**
- ② 8 ppg Base Oil
 - ③ Macondo TS3
 - ④ Macondo Foamed Slurry - 16.74 ppg
 - ⑤ Macondo Foamed Slurry - 16.74 ppg
 - ⑥ Macondo TS3
 - ⑦ (Composite) SBM

HALLIBURTON

Cementing Gulf of Mexico, Broussard

LAB RESULTS - Lead

Job Information

Request/Slurry	65112/3	Rig Name	TRANSOCEAN HORIZON	Date	February 10th 2010
Submitted By	Jesse Gagliano	Job Type	Production Casing	Bulk Plant	Fourchon-C-Port I, La, USA
Customer	BP	Location	Mississippi Cny	Well	Mississippi Canyon 252 OCS-G-32306 Macondo #1

Well Information

Casing/Liner Size	9 5/8"	Depth MD	19650 ft	BHST	262 F
Hole Size	12 1/4"	Depth TVD	19650 ft	BHCT	223 F

Drilling Fluid Information

Mud Company	MI	Type	SOBM	Density	14,6 PPG	PV/YP
-------------	----	------	------	---------	----------	-------

Cement Information - Lead Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
						Slurry Density	16.741	PPG
						Slurry Yield	1.37	FT3
100.00	% BWOC	Lafarge Class H	Bulk	Dec 29, 2009	LOCATI ON	Water Requirement	4.84	GPS
						Total Mix Fluid	5.04	GPS
0.07	% BWOC	EZ-FLO	Bulk	Dec 29, 2009	BLEND ED	Foam Density	14.496	PPG
						Foam Quality	12.98	%
0.25	% BWOC	D-Air 3000	Bulk	Dec 29, 2009	BLEND ED	Water Source	Fresh Water	
1.88	lb/sk	KCl (Potassium Chloride) Salt	Bulk	Dec 29, 2009	BLEND ED	Water Chloride	N/A	ppm
20.00	% BWOC	SSA-1 (Silica Flour) - PB	Bulk	Dec 29, 2009	BLEND ED			
15.00	% BWOC	SSA-2 (100 Mesh) - PB	Bulk	Dec 29, 2009	BLEND ED			
0.20	% BWOC	SA-541	Bulk	Dec 29, 2009	BLEND ED			
0.11	gps	ZoneSealant 2000	Lab	Mar 15, 2009				
0.20	gps	SCR-100L	Lab	Dec 23, 2008	2117			
4.84	gps	Fresh Water	Lab	Jan 18, 2010				

Operation Test Results Request ID:65112/3

Thickening Time, Request Test ID:722097

Temp (°F)	Pressure (psi)	Batch Mix (min)	Reached in (min)	Start BC	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)
223	15,945	0	89	7	04:57	04:58	04:59	05:00

Mud Balance Density, Request Test ID:722106

Density (ppg)
16.5

Mixability (0 - 5) - 0 is not mixable, Request Test ID:722100

Mixability rating (0 - 5)
5

Foam Mix and Stability, Request Test ID:727534

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

SG top
1.91

SG bot.
1.91

Conditioning time (hrs:min)
00:00

FYSA Viscosity Profile & Gel Strength, Request Test ID:722102

Test Temp (°F)

80

foamed fysa rpms 22 8 5 3 2 2 2 1 3d= 0 6d = 0

Non API Rheology, Request Test ID:722103

Test temp (°F)	600	300	200	100	60	30	20	10	6	3
80	120	58	36	16	8	4	2	2	2	2

Non API Rheology, Request Test ID:722104

Test temp (°F)	600	300	200	100	60	30	20	10	6	3
130	55	28	18	8	4	2	2	2	2	2

Non API Rheology, Request Test ID:722105

Test temp (°F)	600	300	200	100	60	30	20	10	6	3
190	192	108	66	34	20	10	6	2	2	2

UCA Comp. Strength, Request Test ID:722098

End Temp (°F)	Pressure (psi)	50 psi (hh:mm)	500 psi (hh:mm)	12 hr CS (psi)	24 hr CS (psi)	48 hr CS (psi)
262	15,945	02:28	02:42	1,829	1,872	1,946

Crush Compressive Strength, Request Test ID:727535

Time 1 (hrs)	Strength 1	Time 2 (hrs)	Strength 2	Time 3 (hrs)	Strength 3	Time 4 (hrs)	Strength 4	Foam quality
12	0	24	0	36	0	48	0	0

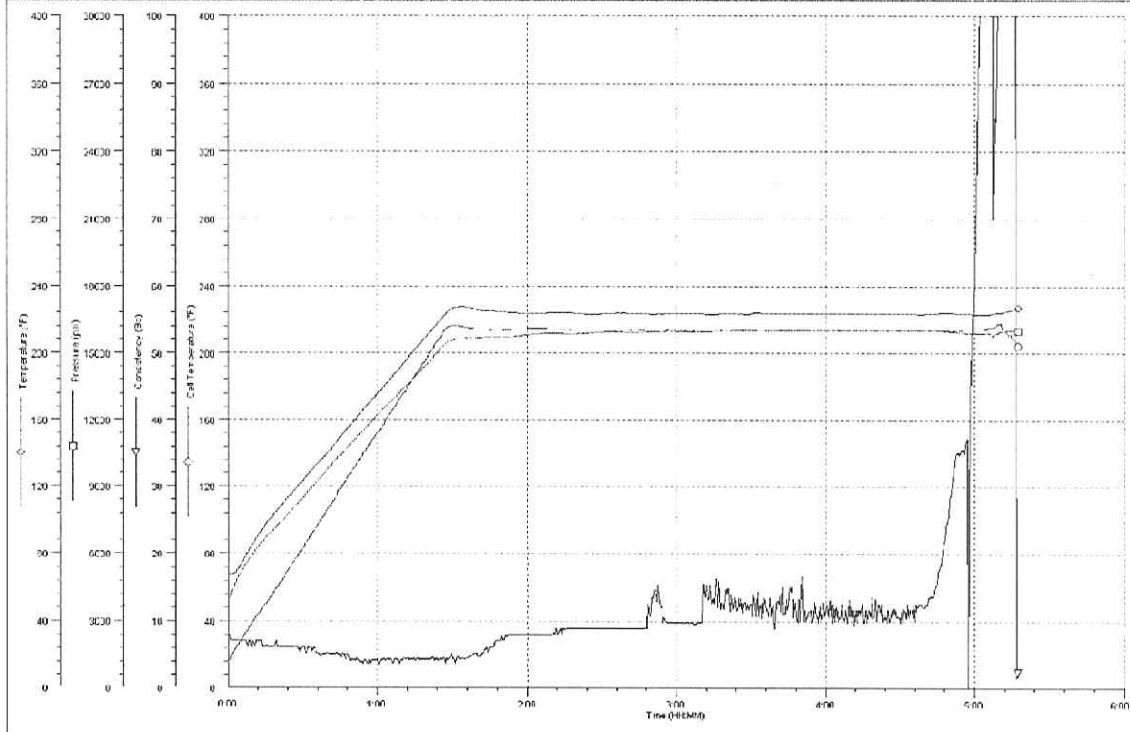
60 hr c/s = 0 72 hr c/s = 0 84 hr c/s = 0 96 hr c/s = 1145

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

Temperature: 227 °F
Cell Temperature: 204 °F

Pressure: 15932 psi

Consistency: 2 Dc

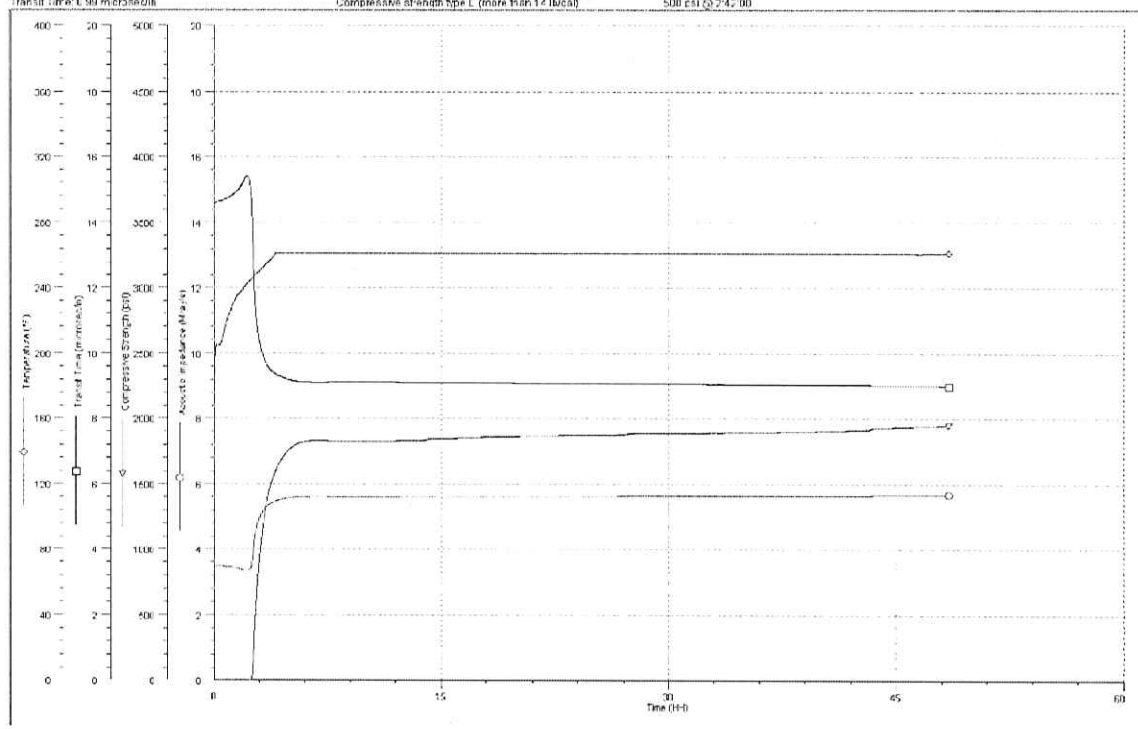


This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

Well ID:
Temperature: 261 °F
Transit Time: 6.99 minutes

Customer:
Strength: 1945 psi
Compressive strength type: C (more than 14 lbs/cu ft)

50 psi @ 2:28:30
500 psi @ 2:42:00



This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.