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## **WEXPRO COMPANY E-BILL**

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**BW Musser 38  
POWDER WASH  
Moffat County, Colorado**

### **Cement Production Casing**

**19-Dec-2011**

### **Post Job Report**

# Cementing Job Summary

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 343491		<b>Ship To #:</b> 2891056		<b>Quote #:</b>		<b>Sales Order #:</b> 9134524	
<b>Customer:</b> WEXPRO COMPANY E-BILL				<b>Customer Rep:</b> SST 88, Wexpro			
<b>Well Name:</b> BW Musser			<b>Well #:</b> 38			<b>API/UWI #:</b> 05-081-07618	
<b>Field:</b> POWDER WASH		<b>City (SAP):</b> CRAIG		<b>County/Parish:</b> Moffat		<b>State:</b> Colorado	
<b>Legal Description:</b> Section 4 Township 11N Range 97W							
<b>Contractor:</b> Wexpro			<b>Rig/Platform Name/Num:</b> SST 88				
<b>Job Purpose:</b> Cement Production Casing							
<b>Well Type:</b> Development Well			<b>Job Type:</b> Cement Production Casing				
<b>Sales Person:</b> VOLNER, THOMAS			<b>Srvc Supervisor:</b> TIPPETTS, LLOYD			<b>MBU ID Emp #:</b> 441109	

## Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
BAFFORD, JEFFREY W	10	459218	JENSEN, SCOTT Ray	10	450282	MCKIE, SHAWN D	10	358960
PETERS, ROGER Stalter	10	489419	TIPPETTS, LLOYD Allen	10	441109			

## Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10025113C	100 mile	10238645C	100 mile	10295091C	100 mile	10713218	100 mile
10804483	100 mile	11041166	100 mile	11071577	100 mile	11337605	100 mile
11501577	100 mile						

## Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
12/19/2011	10	3						
<b>TOTAL</b>			Total is the sum of each column separately					

## Job

Formation Name							Date	Time	Time Zone
Formation Depth (MD)	Top			Bottom		Called Out	19 - Dec - 2011	07:00	MST
Form Type			BHST			On Location	19 - Dec - 2011	12:55	MST
Job depth MD	9137. ft		Job Depth TVD			Job Started	19 - Dec - 2011	19:51	MST
Water Depth			Wk Ht Above Floor		4. ft	Job Completed	19 - Dec - 2011	22:07	MST
Perforation Depth (MD)	From			To		Departed Loc	19 - Dec - 2011	23:15	MST

## Well Data

Description	Max pressure psig	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Surface Casing		9.625	8.921	36.		J-55	.	1545.		
Production Openhole			7.875				1545.	9140.		
Production Casing		4.5	3.92	13.5		P-110	.	9137.		

## Sales/Rental/3<sup>rd</sup> Party (HES)

Description	Qty	Qty uom	Depth	Supplier
MICRO MATRIX RETARDER	1	GAL		HES
PLUG,CMTG,TOP,4 1/2,HWE,3.65 MIN/4.14 MA	1	EA		HES
PLUG,CMTG,BOT,4 1/2,HWE,3.65 MIN/4.14 MA	1	EA		HES

## Tools and Accessories

Type	Size	Qty	Make	Depth	Type	Size	Qty	Make	Depth	Type	Size	Qty	Make
Guide Shoe	4.5	1	COMP	9137	Packer					Top Plug	4.5	1	HES
Float Shoe					Bridge Plug					Bottom Plug	4.5	1	HES
Float Collar	4.5	1	COMP	9125	Retainer					SSR plug set			
Insert Float										Plug Container	4.5	1	HES
Stage Tool										Centralizers	4.5	42	COMP

## 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/sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk		
1	MUD FLUSH III	MUD FLUSH III - SBM (528788)			20.00	bbl	8.4	.0	.0	6			
	42 gal/bbl	FRESH WATER											
	0.25 gal/bbl	D-AIR 3000L, 5 GAL PAIL (101007444)											
2	ExtendaCem RS1	EXTENDACEM (TM) SYSTEM (452981)			480.0	sacks	11.5	2.63	15.5	6	15.5		
	0.8 %	HR-7 (100005055)											
	0.3 %	D-AIR 3000 (101007446)											
	0.125 lbm	POLY-E-FLAKE (101216940)											
	0.25 lbm	KWIK SEAL, SK (100064010)											
	15.5 Gal	FRESH WATER											
3	EconoCem RS13	ECONOCEM (TM) SYSTEM (452992)			1175.0	sacks	14.2	1.26	5.52	6	5.52		
	0.2 %	HR-5, 50 LB SK (100005050)											
	0.125 lbm	POLY-E-FLAKE (101216940)											
	3 lbm	SILICALITE - COMPACTED, 50 LB SK (100012223)											
	0.25 lbm	KWIK SEAL, SK (100064010)											
	5.52 Gal	FRESH WATER											
4	ClaySurf EZ				135.97	bbl	8.4	.0	.0	6			
	0.1 gal/bbl	CLAYSURF-EZ, TOTETANK (101532967)											
Calculated Values		Pressures			Volumes								
Displacement	135.97	Shut In: Instant			Lost Returns	0	Cement Slurry		488.51	Pad			
Top Of Cement	SURFACE	5 Min			Cement Returns	86	Actual Displacement		135.7	Treatment			
Frac Gradient		15 Min			Spacers	25	Load and Breakdown			Total Job	649.21		
Rates													
Circulating	7	Mixing		6	Displacement	6	Avg. Job		6				
Cement Left In Pipe	Amount	11.26 ft	Reason	Shoe Joint									
Frac Ring # 1 @	ID	Frac ring # 2 @	ID	Frac Ring # 3 @	ID	Frac Ring # 4 @	ID						
The Information Stated Herein Is Correct				Customer Representative Signature									

## Planned Pump Schedule

### Wexpro BW Musser 38 Production Casing

#### 1. Pressure Test HES Lines

#### 2. Pump Spacer

	Name	Density (lb/gal)	Volume (bbls)	Rate (bpm)	Surfactants
2a.	Mud Flush III	8.4	20	4	

#### 3. Pump Cement

	Name	Density (lb/gal)	Slurry Volume (bbls)	Rate (bpm)	Mix Water Required (bbls)
3a.	ExtendaCem RS1-Lead	11.5	225.2	6	177.2
3b.	EconoCem RS13-Tail	14.2	263.5	6	154.4

#### 4. Shutdown, Wash Pumps and Lines, Drop Top Plug

#### 5. Displacement

	Name	Density (lb/gal)	Volume (bbls)	Rate (bpm)
5a.	Clayfix Water	8.4	115.2	6
5b.	Clayfix Water	8.4	20.0	2



## Cementing Job Log

*The Road to Excellence Starts with Safety*

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<b>Customer:</b> WEXPRO COMPANY E-BILL		<b>Customer Rep:</b> SST 88, Wexpro	
<b>Well Name:</b> BW Musser	<b>Well #:</b> 38	<b>API/UWI #:</b> 05-081-07618	
<b>Field:</b> POWDER WASH	<b>City (SAP):</b> CRAIG	<b>County/Parish:</b> Moffat	<b>State:</b> Colorado
<b>Legal Description:</b> Section 4 Township 11N Range 97W			
<b>Lat:</b> N 0 deg. OR N 0 deg. 0 min. 0 secs.		<b>Long:</b> E 0 deg. OR E 0 deg. 0 min. 0 secs.	
<b>Contractor:</b> Wexpro		<b>Rig/Platform Name/Num:</b> SST 88	
<b>Job Purpose:</b> Cement Production Casing			<b>Ticket Amount:</b>
<b>Well Type:</b> Development Well		<b>Job Type:</b> Cement Production Casing	
<b>Sales Person:</b> VOLNER, THOMAS		<b>Srv Supervisor:</b> TIPPETTS, LLOYD	<b>MBU ID Emp #:</b> 441109

Activity Description	Date/Time	Cht #	Rate bbl/min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
Call Out	12/19/2011 07:00							HES CREW CALLED OUT.
Pre-Convoy Safety Meeting	12/19/2011 10:00							SAFETY MEETING WITH HES CREW. DISCUSS WEATHER, ROAD CONDITIONS, DIRECTIONS, HAZARDS, AND ALL HES POLICIES.
Depart from Service Center or Other Site	12/19/2011 10:15							DEPART ROCK SPRINGS YARD FOR LOCATION
Arrive At Loc	12/19/2011 12:55							HES CREW ARRIVED AT 12:55
Safety Meeting - Pre Rig-Up	12/19/2011 13:54							SAFETY MEETING WITH HES CREW. DISCUSS SPOTTING OF EQUIPMENT, HAZARDS, RIG-UP PROCEDURES AND HES POLICIES.
Rig-Up Equipment	12/19/2011 13:54							RIG-UP EQUIPMENT ON GROUND.
Safety Meeting - Pre Rig-Up	12/19/2011 13:54							SAFETY MEETING WITH HES CREW, RIG CREW, AND COMPANY REP. DISCUSS JOB PROCEDURES, HAZARDS, SAFETY CONCERNS, AND ALL HES POLICIES.
Rig-Up Equipment	12/19/2011 19:40							FINAL RIG-UP OF EQUIPMENT.

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Sales Order # :

9134524

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Wednesday, December 21, 2011 12:19:00

## Cementing Job Log

Activity Description	Date/Time	Cht #	Rate bbl/min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
Other	12/19/2011 19:40							4.5" 13.5 LB P-110 CASING ON BOTTOM AT 1900 CIRCULATING AT 7 BBL/MIN WITH UNITS 0 OF GAS.
Pump Water	12/19/2011 19:51	1	2	5	5		257.0	PUMP 5 BBL WATER AHEAD TO FILL PUMPS AND LINES.
Pressure Test	12/19/2011 19:55	3						PRESSURE TEST HES IRON TO 8000 PSI.
Pump Spacer	12/19/2011 19:56	5	2	20	25		180.0	MIX AND PUMP 20 BBL MUDFLUSH III AT 8.5 LB/GAL
Pump Lead Cement	12/19/2011 19:59	6	6	224.8 3	224.8 3		693.0	MIX AND PUMP 480 SKS LEAD CEMENT AT 11.5 LB/GAL 2.63 CUFT/SK 15.50 GAL/SK
Pump Tail Cement	12/19/2011 20:38	7	6	263.6 8	488.5 1		303.0	MIX AND PUMP 1175 SKS TAIL CEMENT AT 14.2 LB/GAL 1.26 CUFT/SK 5.52 GAL/SK
Shutdown	12/19/2011 21:24	8						SHUTDOWN TO DROP TOP PLUG.
Drop Plug	12/19/2011 21:24	8						DROP PLUG. WITNESSED BY COMPANY REP.
Pump Water	12/19/2011 21:26	9						WASH PUMPS AND LINES TO PIT.
Pump Displacement	12/19/2011 21:35	11	6	115.9 7	115.7		107.0	PUMP 135.97 BBL CLAYSURF DISPLACEMENT.
Slow Rate	12/19/2011 21:56	12	2	20	135.7		250.0	SLOW RATE TO 2 BBL/MIN
Bump Plug	12/19/2011 22:05	13					2881.0	BUMP PLUG WITH 135.97 BBL DISPLACEMENT AWAY. FINAL CIRCULATING PRESSURE 2640 PSI
Check Floats	12/19/2011 22:07	14						HELD 3450 PSI FOR 2 MINS. FLOATS HELD WITH 1.5 BBL BACK TO TRUCK.

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## Cementing Job Log

Activity Description	Date/Time	Cht #	Rate bbl/ min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
Safety Meeting - Pre Rig-Down	12/19/2011 22:10							SAFETY MEETING WITH HES CREW, RIG CREW, AND COMPANY REP. DISCUSS SAFETY RIG-DOWN PROCEDURES, HAZARDS, AND ALL HES POLICIES.
Rig-Down Equipment	12/19/2011 22:15							RIG DOWN ALL EQUIPMENT.
Pre-Convoy Safety Meeting	12/19/2011 23:00							SAFETY MEETING WITH HES CREW. DISCUSS ROAD CONDITIONS, WEATHER, DIRECTIONS, DRIVING HAZARDS, AND ALL HES POLICIES.
Depart Location for Service Center or Other Site	12/19/2011 23:15							DEPART LOCATION FOR ROCK SPRINGS YARD.
Other	12/19/2011 23:15							GOOD FULL RETURNS THROUGH OUT JOB.
Other	12/19/2011 23:15							86 BBL CEMENT TO SURFACE.
Other	12/19/2011 23:15							PLUG BUMPED. FLOATS HELD, 1.5 BBL BACK TO TRUCK.

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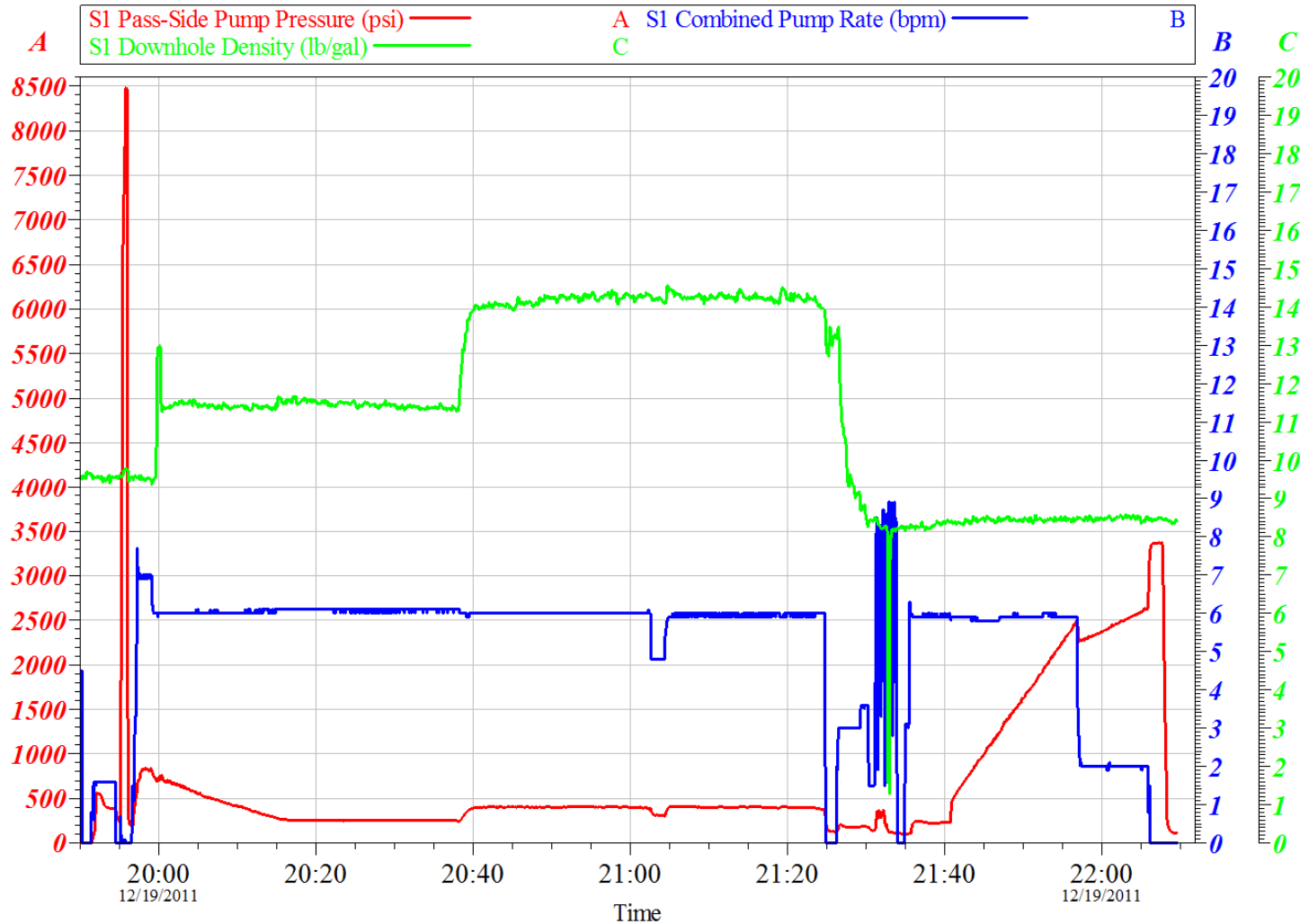
Sales Order # : 9134524

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Wednesday, December 21, 2011 12:19:00

## Cementing Job Log

### WEXPRO SST-88 BW MUSSER #38 SO#9134524 PRODUCTION



Customer: WEXPRO	Job Date: 19-Dec-2011	Sales Order #: 9134524
Well Description: BW MUSSER 38	Job Type: PRODUCTION	Service Supervisor: ALLEN TIPPETTS

OptiCem v6.4.6  
19-Dec-11 22:09

Sold To # : 343491

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Sales Order # : 9134524

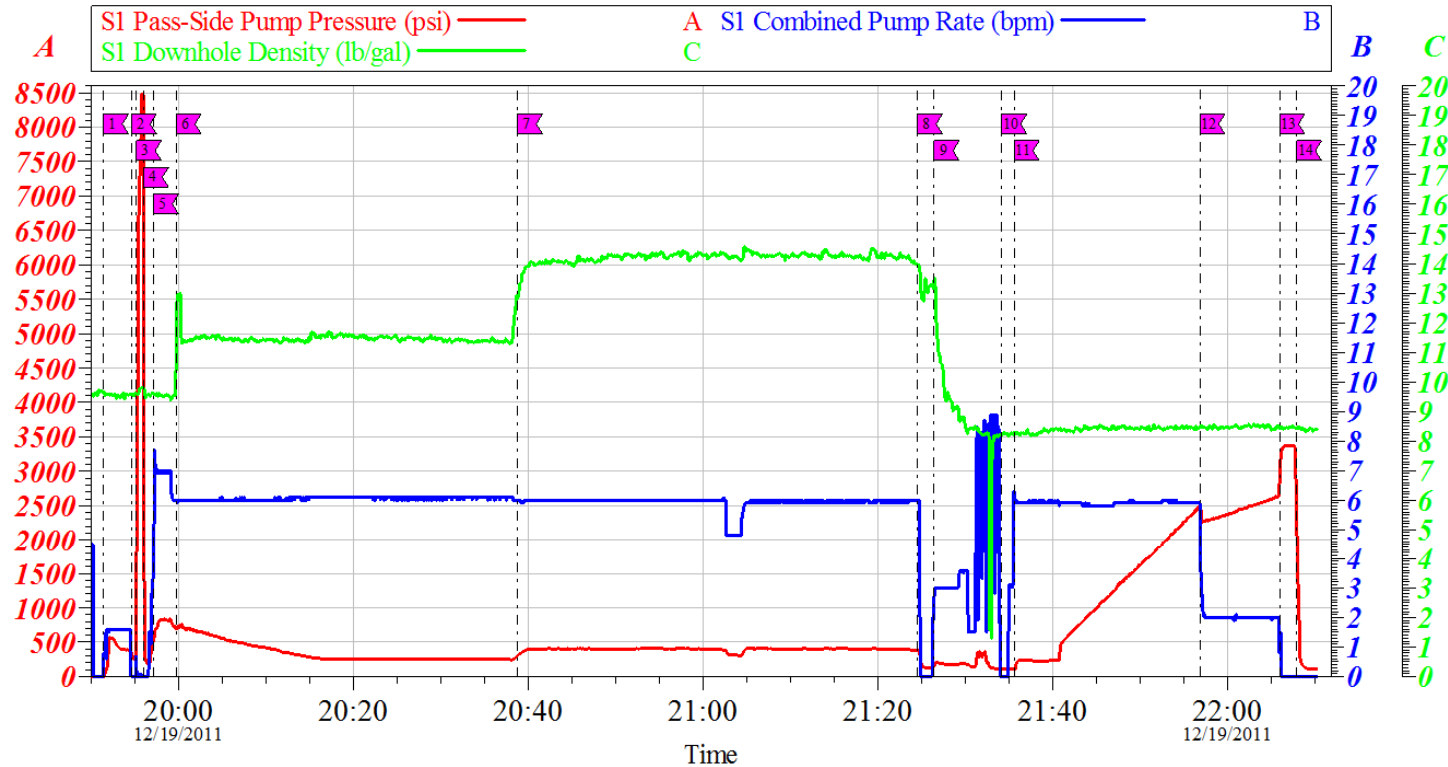
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Wednesday, December 21, 2011 12:19:00



## Cementing Job Log

### WEXPRO SST-88 BW MUSSER #38 SO#9134524 PRODUCTION



Local Event Log									
Intersection	SCPR	SDD	SPPP	Intersection	SCPR	SDD	SPPP		
1 FILL PUMPS AND LINES	19:51:22	0.736	9.651	1.000	2 SHUTDOWN	19:54:33	0.000	9.581	352.1
3 PRESSURE TEST HES IRON	19:55:07	0.700	9.600	303.2	4 RELEASE PRESSURE	19:55:57	0.000	9.762	824.2
5 PUMP MUDFLUSH	19:57:05	3.700	9.600	514.8	6 PUMP LEAD CEMENT	19:59:41	6.000	11.48	693.6
7 PUMP TAIL CEMENT	20:38:45	6.000	12.82	303.6	8 SHUTDOWN DROP PLUG	21:24:31	6.000	13.98	375.0
9 WASH PUMPS AND LINES TO PIT	21:26:26	2.595	13.43	151.8	10 SHUTDOWN	21:34:10	0.000	8.210	108.0
11 PUMP DISPLACEMENT	21:35:36	6.300	8.228	107.0	12 SLOW RATE	21:56:51	5.900	8.488	249.5
13 LAND PLUG	22:05:59	1.400	8.440	288.1	14 CHECK FLOATS END JOB	22:07:54	0.000	8.450	235.8

Customer: WEXPRO	Job Date: 19-Dec-2011	Sales Order #: 9134524
Well Description: BW MUSSER 38	Job Type: PRODUCTION	Service Supervisor: ALLEN TIPPETTS

OptiCem v6.4.6  
19-Dec-11 22:10

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Wednesday, December 21, 2011 12:19:00

## Cementing Job Log

## HALLIBURTON

## Water Analysis Report

COMPANY:	WEXPRO	Date Recorded	12/19/2011
SUBMITTED BY:	ALLEN TIPPETTS	SO#	9134524
LEASE:	BW MUSSER	Job Type	PRODUCTION
WELL #:	7-Feb	Camp Location	ROCK SPRINGS, WY

## CEMENT MIX WATER REQUIREMENTS

Item	Recorded Test Value	Max Acceptable Limit	Potential Problems in Exceeding Limit
pH	7	5 to 8.5	Chemicals in water can cause severe retardation
Chlorides <sup>1,2</sup>	0	3000 mg/L	Can accelerate the set time on cement 1% ~ 4800 mg/L
Total Alkalinity	120	1000 mg/L	Cement is greatly retarded to the point where it may not set up at all, decrease strength of cement and possibly thicken cement slurry. (Typically occurs @ pH ≥ 8.3)
Total Hardness	120	400 mg/L	Slightly shortens pump time on cement.
Sulfates	<200	1500 mg/L	Will greatly decrease the strength of cement
Iron	0	300 mg/L	Could cause gelation issues with cement
Water Temp	84°	50F to 80F	High temps will accelerate; Low temps may risk freezing in cold weather

## NOTES:

1. If the water's pH is greater than or equal to 8, avoid using it since Magnesium may be present (there are no field test strips for Magnesium).

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Submitted Respectfully by: \_\_\_\_\_

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