

## Job Details & Summary

### Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Casing	Outer	9.625	8.921	36	n/a	0	1542	0
Open Hole	Outer	n/a	8.5	n/a	n/a	1542	6740	20
Casing	Inner	5.5	4.778	20	n/a	0	17610	0
Open Hole	Outer	n/a	8.5	n/a	n/a	6740	17610	15

### Equipment / People

Unit Type	Unit	Power Unit	Employee #1	Mileage
Field Bin	602		Davis, Rod	100
Field Bin	604		Hyde, Tyson	100
Bulk Trailer	508		Jimenez, Edgar	100
Cement Pump	102	202	Boyd, Brian	100
Light Duty Pickups	3		Dent, Jerod	100
Plug Container	150509			100
Swage	150530			100

### Timing

Event	Date/Time
Call Out	12/25/2016 08:00
Depart Facility	12/25/2016 09:00
On Location	12/25/2016 10:30
Rig Up Iron	12/25/2016 11:00
Job Started	12/25/2016 15:40
Job Completed	12/25/2016 19:20
Rig Down Iron	12/25/2016 19:40
Depart Location	12/25/2016 22:00

### General Job Information

Metrics	Value
Well Fluid Density	10.2 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	1430 bbls
Rig Circulation Time	4 hours
Calculated Displacement	390.5 bbls
Actual Displacement	390.5 bbls
Total Spacer to Surface	90 bbls
Total CMT to Surface	0 bbls
Well Topped Out	No
Top Out Volume	0 bbls

### Well Fluid Details

Metrics	Value
Plastic Viscosity	10
Yield Point	9
10 sec. SGS	3
10 min. SGS	9
30 min. SGS	12
Filtrate	7
Flow Line Temp.	115

### Job Details

Metrics	Value
Flare Prior to Job	No
Flare During Job	No
Flare at End of Job	No
Well Full Prior to Job	Yes
Well Fluid Density Into Well	10.2 lb/gal
Well Fluid Density Out of Well	10.2 lb/gal

### Job Details (cont.)

Metrics	Value
BHCT	220 °F
BHST	220 °F



### Circulation

Lost Circulation Experienced
No

### Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft <sup>3</sup> /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Top (ft)
1	1	Water	Flush	8.33			42.00		60.00	0
1	2	CD Spacer	Spacer	11.00			33.76		40.00	0
1	3	ALTCem P100-X2	Lead	12.50	2.07	11.80		890.00	327.86	0
1	4	ALTCem P50-X1	Tail	13.50	1.47	7.41		1950.00	511.00	6740
1	5	MMCR Water	Displacement	8.33			41.90		5.00	17340
1	6	Water w/ Clay Protection and Biocide	DisplacementFinal	8.33			41.91		370.00	0



Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom	Used (gal)
1	2	Spacer	CD Spacer	ASR-20	StrengthRetrogression	179.30	lb/bbl	
1	2	Spacer	CD Spacer	AR-31	Retarder	0.64	lb/bbl	
1	2	Spacer	CD Spacer	AVS-10	Viscosifier	0.80	lb/bbl	
1	2	Spacer	CD Spacer	ADF-20	Defoamer	0.30	gal/bbl	5
1	3	Lead	ALTCem P100-X2	AC3-10	Cement	100.00	%	
1	3	Lead	ALTCem P100-X2	ABX-30	BondEnhancer	0.40	%BWOB	
1	3	Lead	ALTCem P100-X2	ADF-11	Defoamer	0.20	%BWOB	
1	3	Lead	ALTCem P100-X2	AFL-10	FluidLoss	0.30	%BWOB	
1	3	Lead	ALTCem P100-X2	AR-31	Retarder	0.15	%BWOB	
1	3	Lead	ALTCem P100-X2	AVS-20	Viscosifier	0.10	%BWOB	
1	3	Lead	ALTCem P100-X2	ADF_20	Defoamer	0.30	gal/bbl	15
1	4	Tail	ALTCem P50-X1	ACG-10	Cement	50.00	%	
1	4	Tail	ALTCem P50-X1	AFA-10	Extender	50.00	%	
1	4	Tail	ALTCem P50-X1	ADF-11	Defoamer	0.20	%BWOB	
1	4	Tail	ALTCem P50-X1	AFL-50	FluidLoss	0.20	%BWOB	
1	4	Tail	ALTCem P50-X1	AR-10	Retarder	0.40	%BWOB	
1	4	Tail	ALTCem P50-X1	AR-31	Retarder	0.05	%BWOB	
1	4	Tail	ALTCem P50-X1	AVS-10	Viscosifier	0.10	%BWOB	
1	4	Tail	ALTCem P50-X1	AVS-50	Viscosifier	2.00	%BWOB	
1	5	Displacement	MMCR Water	AR-61	Retarder	0.10	gal/bbl	1
1	6	DisplacementFinal	Water w/ Clay Protection and Biocide	ASF-50	ClayProtection	0.08	gal/bbl	31
1	6	DisplacementFinal	Water w/ Clay Protection and Biocide	Biocide	Other	0.01	gal/bbl	4



## Job Logs

Line	#	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Annular Pressure (psi)	Comment
1		Call out	12/25/2016	08:00						Altcecm crew called out to Bayswater Thornton J-29-30HN production casing cement job.
2		Pre convoy meeting	12/25/2016	08:45						Altcecm crew discuss routes and hazards associated with driving such as following distance, alternate route and weather conditions.
3		Depart facility	12/25/2016	09:15						Altcecm crew depart for location.
4		Arrive on location	12/25/2016	10:30						Altcecm crew arrive on location.
5		Safety meeting	12/25/2016	10:45						Altcecm crew assess location and discuss hazards associated with spotting in equipment and rig up hazards such as slips/falls, pinch points, overhead lines, clear communication, proper P.P.E. and weather condition.
6		Spot equipment	12/25/2016	11:00						Altcecm crew spot in pump and bulk truck to rig up
7		Rig up iron	12/25/2016	11:30						Altcecm crew rig up all ground fittings such as water, bulk and iron lines and hoses.
8		Safety meeting	12/25/2016	15:00						Altcecm crew, customer representative and rig crew discuss job procedure and safety topics such as muster area, emergency contact, evacuation procedure, job contingency plans, communication with all pertinent personnel, first aid, fire extinguishers, weather conditions and location specific hazards.
9		Start job	12/25/2016	15:40						Start cement job. 5.5", 20 lb, P-110 casing on bottom at 10 bbl/min with 0 gas and full returns with a total of 1,800 bbls mud circulated.
10		Fill lines	12/25/2016	15:41	8.33	2	3	200		Fill lines with 3 bbls water ahead.
11		Shutdown	12/25/2016	15:42						Shutdown to pressure test.
12		Pressure test	12/25/2016	15:43						Pressure test iron to 7,000 psi.
13		Pump spacer	12/25/2016	15:45	8.33	6	63	1000		Pump 60 bbls fresh water spacer ahead.
14		Pump spacer	12/25/2016	15:56	11	6	103	1100		Pump 40 bbls CD spacer at 11 ppg.
15		Pump lead cement	12/25/2016	16:03	12.5	6	193	1150		Pump 90 bbls ALTCEM P100-X2 Lead cement at 12.5 ppg, 2.07 yld, 11.8 gal/sk.
16		Slow rate	12/25/2016	16:16	12.5	4	8	200		Slow rate due to cement delivery issue.
17		Increase rate	12/25/2016	16:18	12.5	6	431	900		Increase rate after lining out delivery issue. Pump remaining 230 bbls of lead cement.
18		Pump tail cement	12/25/2016	16:55	13.5	6	941	250		Pump 510 bbls ALTCEM P50-X1 Tail cement at 13.5 ppg, 1.47 yld, 7.41 gal/sk.
19		Shutdown	12/25/2016	18:22						Shutdown to wash up.
20		Wash lines	12/25/2016	18:23						Wash pumps and lines to pit.
21		Drop plug	12/25/2016	18:25						Load bottom wiper plug into plug container
22		Pump displacement	12/25/2016	18:31	8.33	2	5	200		Pump 5 bbls of water displacement with .1 gal/bbls AR-61 retarder
23		Shutdown	12/25/2016	18:34						Shutdown to load top wiper plug into plug container
24		Pump displacement	12/25/2016	18:38	8.33	10	10	200		Pump 5 bbl ASF-50 displacement at 10 bbl/min with 0.01 gal/bbls biocide
25		Shutdown	12/25/2016	18:39						Shutdown to open plug container and verify for customer that top plug was pumped away
26		Pump displacement	12/25/2016	18:41	8.33	10	155	2000		Pump 145 bbls ASF-50 displacement at 10 bbl/min 0.01 gal/bbls biocide



Line	#	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Annular Pressure (psi)	Comment
27		Slow rate	12/25/2016	18:58	8.33	8	375	1800		Pump 220 bbls ASF-50 displacement at 10 bbl/min 0.01 gal/bbls biocide
28		Land plug	12/25/2016	19:18	8.33	8	375	2577		Land plug with total of 375 bbls displacement away. Brought pressure up to 4,370 psi.
29		Check floats	12/25/2016	19:24						Floats held with 5 bbls back to truck
30		End job	12/25/2016	19:30						End cement job. Received 30 bbls spacer to surface.
31		Rig down	12/25/2016	19:35						Altcm crew rig down all iron and fittings.
32		Pre convoy meeting	12/25/2016	21:30						Altcm crew discuss routes and hazards associated with driving such as following distance, alternate route and weather conditions.
33		Depart location	12/25/2016	21:45						Altcm crew depart for facility.



## Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	63 °F	50-80 °F
pH Level	6	5.5-8.5
Chlorides	15 mg/L	0-3000 mg/L
Total Alkalinity	40	0-1000
Total Hardness	<55 mg/L	0-500 mg/L
Carbonates	0 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	1500 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

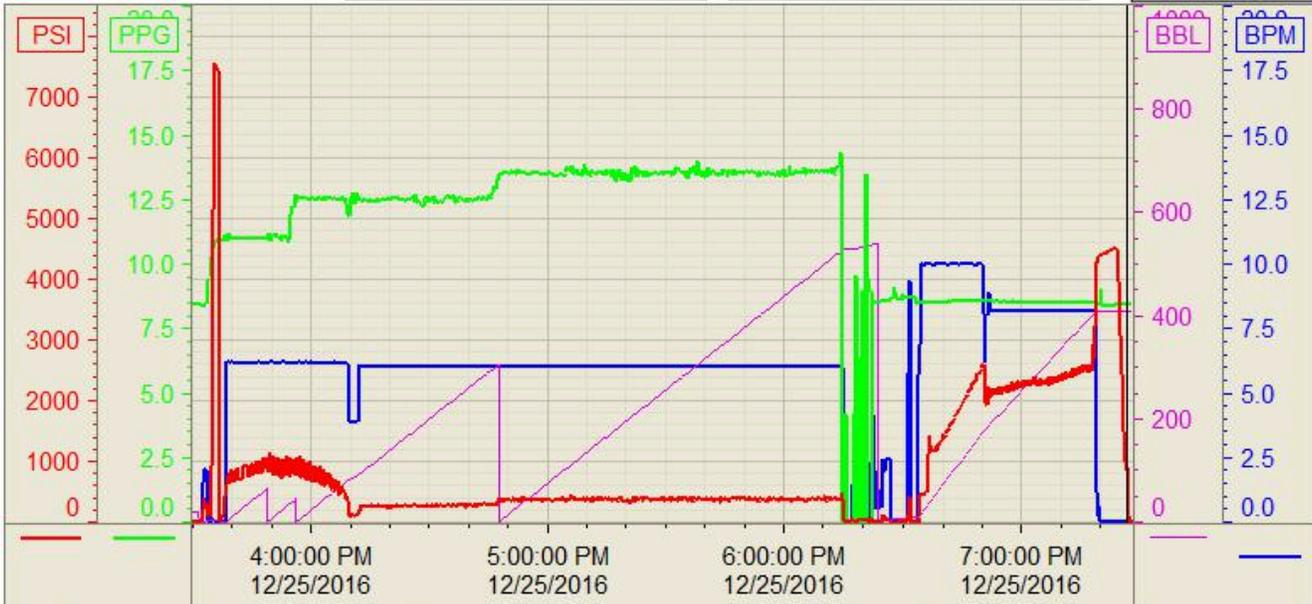
## Pump Diagrams

### Job Chart

Customer: Bayswater Exploration  
Well Number: J-29-30HN  
Lease Info: Thornton



Print Date/Time  
12/25/2016 8:29:18 PM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	870.5	12/25/2016 7:26:38 PM	Cementer\DS_DISCHARGE_PRES
2	Den - Density (PPG)	8.43	12/25/2016 7:26:38 PM	Cementer\DENSITY_ACTUAL_RAT
3	Down Hole Total (BBL)	410.1	12/25/2016 7:26:38 PM	Cementer\DOWNHOLE_FLOW_TC
4	Combined Rate (BPM)	0.00	12/25/2016 7:26:38 PM	Cementer\Flow_Combined

Source: Control1 8:29:13 PM