Drilling Fluid Summary

MA CANADA REPRESENTATIVE Brad Vickery

Operator:	Athabasca Oil Corporation	Contractor:	Horizon # 10
Well Name:	ATH HZ Simon	Tool Push:	
Location:	16-36-063-25W5		
Supervisor:	Allan Dauphinee	Province:	Alberta
		Field:	Simonette
Spud Date:	12/13/2013		
Release Date:	2/13/2014	Total Depth:	5301 mMD (3580 mTVD)
Total Days:	63	Well Profile:	Horizontal

Hole Sections:

Well Profile	Hole Size	Casing / Liner Size	Casing / Mud Up Depth	Days on Interval	Mud System	Density (kg/m^3)	Fluid Loss (mL/30min)	Viscosity (sec/L)	Yield Point (Pa)	Logging VIS/YP
Surface	311	244.5	621	4.5	Gel Slurry/Chem	1130	11	55		
1st Intermediate	222	193.7	3166	14.5	Invert	1030	6.2	63	2.55	
2nd Intermediate	171	139.7	3600	10.5	Invert	1370	6.2	51	6.13	
Main	171	139.7	5301	33.5	Invert	1690	5	78	4.6	

Solids Control Equipment:

Shaker	Cobra		
Centrifuge	Cambel		
Centrifuge			
Shaker	Cobra		

Surveys:

Depth	Inc.	Azimuth	Depth	Inc.	Azimuth
1174	0.4	3.6			
1230	0.4	14.8			
1284	0.4	16.9			
1727	1.2	46.0			
1782	1.1	54.0			
2164	0.6	35.6			
2220	0.4	32.0			
2468	0.7	34.0			
2907	0.6	21.0			
3292	0.4	23.0			
3501	46.0	193.0			
3550	51.0	193.0			
3815	89.0	180.0			
3824	90.0	182.0			
4257	89.0	184.0			
5000	90.0	178.0			
5009	91.0	178.0			
5173	90.0	179.0			

Depth At Report Time:

Report #	Depth	Report #	Depth	Report #	Depth	Report #	Depth
1	1579	23	5301				
2	2165						
3	2393						
4	2646						
5	2869						
6	3064						
7	3164						
8	3402						
9	3590						
10	3190						
11	3212						
12	3213						
13	3235						
14	3251						
15	3346						
16	3604						
17	3972						
18	4117						
19	4330						
20	4577						
21	5092						
22	5291						

Brief Description of Hole Problems:

Product Usage:

Trucking Company: FORMULA POWELL Location: 16-36-063-25W5

Material Costs Estimated vs. Actual

			Surface Hole		Intermediate Hole		Main Hole		Total Used		
Product Name	Cost	Size	Estimated	Actual	Estimated	Actual	Estimated	Actual	Estimated	Actual	Total Cost
Alkapam A1103D	$204.96	25		10						10	$2,049.60
Barite - FedWate	$16.80	40				2130		3721		5851	$98,296.80
Bentone 150	$188.57	22.68						14		14	$2,639.98
Bentonite (Gel)	$8.94	45.36		150						150	$1,341.00
CAL CARB '0'	$7.11	25						20		20	$142.20
CAL CARB '325'	$7.11	25						10		10	$71.10
Cal Chloride Powder	$30.20	36.36				35		95		130	$3,926.00
Calcium Chloride High Test	$30.20	40						(32)		(32)	($966.40)
Calcium Nitrate	$31.39	36.36		26						26	$816.14
Citrus Power (20L)	$130.92	20		6		7		109		122	$15,972.24
ControlSeal (22.68 kg)	$90.12	22.68				80		176		256	$23,070.72
Desco CF	$72.30	11.34		3						3	$216.90
Enviro Spud Stix/Soap Sticks	$14.02	1		40						40	$560.80
Graphite (3724)	$53.20	22.68						(49)		(49)	($2,606.80)
Graphite Powder (25 Kg)	$58.64	25						220		220	$12,900.80
InverMAX (m3) September	$1,080.00	1				10		0		10	$11,275.20
Lignite / Humalite	$12.64	22.68		2						2	$25.28
Lime	$9.96	20						200		200	$1,992.00
Lime - Hydrated (22.68 kg)	$14.00	22.68				361		125		486	$6,804.00
MA BEADS (22.68 Kg)	$49.26	22.68						240		240	$11,822.40
MA BLOK (11.34 kg)	$59.94	11.34				80		145		225	$13,486.50
MA EMUL (205 L)	$637.80	205				5				5	$3,189.00
MA Oilwet (205 L)	$698.20	205				6		19		25	$17,455.00
MAXoil (m3) December	$1,055.00	1				23		97		120	$126,600.00
MAXoil (m3) November	$1,055.00	1				90				90	$94,950.00
MAXoil (m3) October	$1,060.00	1						30		30	$31,800.00
MAXoil (m3) September	$1,030.00	1				22				22	$22,206.80
MAXoil February DV (m3)	$1,095.00	1						10		10	$10,950.00
MAXtrol (22.68 kg)	$81.20	22.68				80		145		225	$18,270.00
Organoseal (22.68 Kg)	$77.90	22.68						6		6	$467.40
Sawdust (7.3kg)	$3.98	7.3		100		5				105	$417.90
SODA ASH	$16.08	22.68		5						5	$80.40
TKPP (25 kg)	$135.68	25		1						1	$135.68
Truvis (25 kg)	$229.46	25				51				51	$11,702.46
Ultraseal XP	$51.45	11.34				60		136		196	$10,084.20
Unig-RM (20 L)	$585.00	20						2		2	$1,170.00
WALNUT MEDIUM	$24.58	22.68						3		3	$73.74
Pallets	$20.00					117		89		206	$4,120.00
PALLETS RETURNED	$8.00					(25)		(120)		(145)	($1,160.00)
Engineering	$545.00					9		14		23	$12,535.00

Surface Hole: Estimated Cost:
Actual Cost: $6,409.32

Top Hole: Estimated Cost:
Actual Cost: $235,721.60

Main Hole: Estimated Cost:
Actual Cost: $311,258.12

Total Products Cost: Estimated Cost:
Actual Cost: $553,389.04

Technical Service Costs: $12,535.00
Number of Days: 23

Trucking Costs:
Trucking Charges:
Pallets: 206 @ $20.00 $4,120.00
Pallets Credited: (145) @ $8.00 ($1,160.00)

Total Trucking: $2,960.00

Total Drilling Fluids Cost (Products / Technical Service / Trucking): $568,884.04

Interval Discussions:

ATH HZ Simon 16-36-063-25W5 5301 m (3580 mTVD) 63 Days Dec 2013 - Feb 2014

Surface Hole 311 mm to 621 m Gel Slurry/Chem: Spudded well on December 13, 2013 with water, allowing the native clays to build the viscosity while drilling. Drilled a 311 mm surface hole, adding Sawdust every 30 m drilled to help prevent mud rings from forming while drilling, to 450 m. Added Gel to increase the viscosity and ensure proper hole cleaning while drilling. Drilled to a total surface depth of 621 m and pulled out of the hole to run casing. Ran 244.5 mm casing to bottom and cemented with good returns. Maximum Density: 1130 kg/m³. 4.5 Days.

Intermediate Hole 222 mm to 3166 m Invert: Ran in the hole, displaced the hole to invert and drilled out the cement. Drilled a 222 mm intermediate hole ahead to 1750 m adding MAXtrol, MA BLOK, Ultra Seal XP and ControlSeal every 12 hours to help prevent seepage losses while drilling and MA Oilwet and MA EMUL to help coat new solids in the system to maintain and emulsion of 700 V. **Drilled ahead to 2406 m and pulled out of the hole to make up a new bit due to a low rate of penetration (ROP).** Drilled ahead to 2465 m and pulled out of the hole to make up a new bit. Drilled ahead to 2802 m and pulled out of the hole to change out the bit, encountering no problems while tripping. **Drilled ahead to 2869 m and pulled out of the hole to make up a new bit due to a low ROP.** Drilled to the intermediate casing point at 3166 m and pulled out of the hole for logging. Logged the hole with logs going to bottom and pulled out of the hole to run casing. Ran 193.7 mm casing to bottom and cemented with good returns. **Invert Losses: 120.56 m³.** Maximum Density: 1030 kg/m³. 14.5 Days.

Strat Hole 171 mm to 3600 m Invert: Ran in the hole and drilled out the cement with a weighted invert. Drilled a 171 mm strat hole to 3529 m and pulled out of the hole to pick up coring tools. Cored the hole from 3536-3556 m and 3562-3588 m. Drilled ahead to a total strat depth of 3600 m and pulled out of the hole for logging. Logged the hole with logs going to bottom and pulled out of the hole to run cement plugs. Ran cement plugs from 3423-3375 m and from 3275-3100 m and cemented with no problems encountered. **Invert Losses: 24 m³.** Maximum Density: 1370 kg/m³. 10.5 Days.

Main Hole 171 mm to 5301 m (3580 mTVD) Invert: Ran in the hole and time drilled the build section. Drilled a 171 mm hole to 3213 m at 1 inch/5 min. and pulled out of the hole to make up a new bit. Time drilled ahead at a rate of 0.5 m/hour to kick off the cement plug and pulled out of the hole to pick up the cement string. Cemented plug from 3234-2697 m. Ran in the hole and tagged the cement and time drilled the cement, kicking off the cement plug with no issues. Directionally drilled from 3203-3220 m and pulled out of the hole to make up a new bit. **Drilled ahead to 3678 m, increasing the density to 1500 kg/m^3 at 3500 m due to high back ground gas, and pulled out of the hole to change out the bit.** Drilled ahead to 4133 m, adding Graphite and MA BEADS to help with sliding while drilling, and pulled out of the hole for MWD tools. Drilled ahead to 4178 m and pulled out of the hole for a bit. Drilled ahead to 4571 m and pulled out of the hole to make up a new bit, no problems while tripping. Drilled ahead to a total depth of 5301 m and pulled out of the hole to pick up the reamer assembly. Reamed to bottom and pulled out of the hole to run a liner. Ran 139.7 mm liner to bottom and cemented with good cement returns and stripped back the density of the fluid. Rig released on: February 13, 2014. **Invert Losses: 137.44 m³.** Maximum Density: 1700 kg/m³. 33.5 Days.

TD Formation: Duvernay
Total Invert Losses: 282 m³
Average Invert Losses: 4.9 m³ / 100 m