



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/14/2017
 Invoice #: 900190
 API#: 05-123-45249
 Foreman: Corey B.

Customer: Anadarko Petroleum Corporation

Well Name: Robin 9-17HZ

County: Weld
 State: Colorado
 Sec: 9
 Twp: 1N
 Range: 65W

Consultant: Matt
 Rig Name & Number: Cartel 88
 Distance To Location: 39
 Units On Location: 1027/3103-4033/3212-4020/321
 Time Requested: 900
 Time Arrived On Location: 820
 Time Left Location:

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 14.2
Casing Depth (ft.) : 1,864	Cement Yield (cuft) : 1.48
Total Depth (ft) : 1874	Gallons Per Sack: 7.40
Open Hole Diameter (in.) : 13.50	% Excess: 20%
Conductor Length (ft) : 80	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.25	BBL to Pit:
Shoe Joint Length (ft) : 44	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 15	H2O Wash Up (bbls): 20.0
Max Rate: 8	Spacer Ahead Makeup
Max Pressure: 2000	30 bbl with Die in @nd 10

Calculated Results	Displacement: 141.86 bbls
cuft of Shoe 19.10 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor 61.05 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Pressure of cement in annulus Hydrostatic Pressure: 1375.07 PSI
cuft of Casing 1046.27 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing Displacement: 784.75 psi Shoe Joint: 32.46 psi Total: 817.21 psi
Total Slurry Volume 1126.42 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Differential Pressure: 557.86 psi
bbls of Slurry 200.62 bbls (Total Slurry Volume) X (.1781)	Collapse PSI: 2020.00 psi Burst PSI: 3520.00 psi
Sacks Needed 761 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total Water Needed: 325.96 bbls
Mix Water 134.10 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	

X [Signature]
 Authorization To Proceed

Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.



**Bison Oil Well Cementing
Single Cement Surface Pipe**

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Well Name

Anadarko Petroleum Corporation
Robin 9-17HZ

INVOICE #
LOCATION
FOREMAN
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900190
Weld
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DESCRIPTION OF JOB EVENTS

Amount Pumped	Time	Event	Description	Rate	BBLs	Pressure
% Excess 20%	820	What rig is doing upon Bison Arrival	Rig Broke Down/Start running Casing			
Mixed bbls 134.1	830	JSA	Bison Crew			
Total Sacks 761	840	Rig up				
bbl Returns 6	1600	Safety Meeting	Bison and Rig crew			
Water Temp 60	1640	Start Job				
	1642	Pressure Test				
Notes:						
	1644	Spacer Ahead	2nd 10 with die	5	30	40
	1650	Lead Cement	14.2 ppg	6	200	50
	1730	Shutdown				
	1732	Drop Plug	Preloaded in plug container			
	1734	Start Displacement		7	90	330
	1800	Bump Plug	500 over final lift 1140 psi	2	141	520
	1802	Floats Held	Held for 2 MIN with 1.5 bll back			
	1805	End Job				
	1815	Rig Down				
	1900	Leave Location				

X Yuri Kulloroff
Work Performed

X CONSULTANT
Title

X 10-14-17
Date

Robin 9-17HZ

