



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/23/2014
 Invoice #: 35062
 API#
 Foreman: Kirk Kallhoff

Customer: Anadarko Petroleum Corporation
Well Name: front range farms 36n-14hz

County: Weld
 State: Colorado
 Sec: 11
 Twp: 1n
 Range: 68w

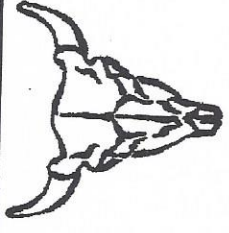
Consultant: randy
 Rig Name & Number: major 29
 Distance To Location: 22
 Units On Location: 4030-3103/4018-3204
 Time Requested: 200 am
 Time Arrived On Location: 1200 am
 Time Left Location: 6:00 pm

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.) : 1,278	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1296	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 21%
Conductor Length (ft) :	Displacement Fluid lb/gal: 8.3
Conductor ID :	BBL to Pit:
Shoe Joint Length (ft) : 39	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 8	H2O Wash Up (bbls): 20.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	

Calculated Results	Pressure of cement in annulus
Displacement: 96.40 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	Hydrostatic Pressure: 942.78 PSI
cuft of Shoe 16.93 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of the fluids inside casing
cuft of Conductor 0.00 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Displacement: 534.23 psi
cuft of Casing 755.76 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Shoe Joint: 28.77 psi
Total Slurry Volume 772.69 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Total 563.00 psi
bbls of Slurry 137.62 bbls (Total Slurry Volume) X (.1781)	Differential Pressure: 379.78 psi
Sacks Needed 519 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Collapse PSI: 2020.00 psi
Mix Water 92.36 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Burst PSI: 3520.00 psi
	Total Water Needed: 238.76 bbls

Randy Case
 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.



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INVOICE # 35062
 LOCATION Weld
 FOREMAN Kirk Kallhoff
 Date 10/23/2014

Customer Anadarko Petroleum Corporation
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DESCRIPTION OF JOB EVENTS

	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
Safety Meeting 403am	0	431pm	10	0			0			0			0		
MIRU 300am	10	433pm	50	10			10			10			10		
CIRCULATE 428am	20	436pm	60	20			20			20			20		
Drop Plug	30	438pm	70	30			30			30			30		
509am	40	440pm	130	40			40			40			40		
M & P	50	442pm	190	50			50			50			50		
Time	60	444pm	260	60			60			60			60		
435 am	70	446pm	320	70			70			70			70		
505 am stop	80	449pm	380	80			80			80			80		
	90	451pm	420	90			90			90			90		
	100			100			100			100			100		
	110			110			110			110			110		
% Excess	120			120			120			120			120		
Mixed bbbls	130			130			130			130			130		
Total Sacks	140			140			140			140			140		
bbbl Returns	150			150			150			150			150		
Water Temp															

Notes:
 bumped plug at 532 am 1400 psi
 137.9 bbbls slurry
 floats held

X *[Signature]*
 Work Performed

X *[Signature]*
 Title

X 10-23-14
 Date

M/D TOTCO 2000 SERIES

— PSI
— Barrels / Minute
— Barrels
— Lbs / Gallon
— Stage Volume

