



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/18/2015
 Invoice #: 45129
 API#: 05-123-40997
 Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation
Well Name: MILK 35N-28HZ

County: Weld
 State: Colorado
 Sec: 21
 Twp: 3N
 Range: 65W

Consultant: RANDY
 Rig Name & Number: ADVANCED 10
 Distance To Location: 11
 Units On Location: 4031-3107, 4036-3203
 Time Requested: 2000
 Time Arrived On Location: 1730
 Time Left Location: 2330

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.) :	1,196	Cement Yield (cuft) :	1.49
Total Depth (ft) :	1211	Gallons Per Sack:	7.48
Open Hole Diameter (in.) :	13.50	% Excess:	16%
Conductor Length (ft) :	45	Displacement Fluid lb/gal:	8.3
Conductor ID :	15.25	BBL to Pit:	19.0
Shoe Joint Length (ft) :	39	Fluid Ahead (bbls):	30.0
Landing Joint (ft) :	5	H2O Wash Up (bbls):	20.0
Max Rate:	6	Spacer Ahead Makeup	
Max Pressure:	1500	30 BBL WATER W/ DYE IN 2ND 10	

Calculated Results	Displacement:	89.81 bbls
cuft of Shoe 17.14 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 34.34 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Pressure of cement in annulus	
cuft of Casing 650.40 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Hydrostatic Pressure: 882.44 PSI	
Total Slurry Volume 701.87 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Pressure of the fluids inside casing	
bbls of Slurry 125.00 bbls (Total Slurry Volume) X (.1781)	Displacement: 498.76 psi	
Sacks Needed 471 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Shoe Joint: 29.12 psi	
Mix Water 83.89 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total 527.88 psi	
	Differential Pressure: 354.56 psi	
	Collapse PSI: 2020.00 psi	
	Burst PSI: 3520.00 psi	
	Total Water Needed: 223.70 bbls	

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**

Customer
Well Name

Anadarko Petroleum Corporation
MILK 35N-28HZ

INVOICE #
LOCATION
FOREMAN
Date

45129
Weld
JASON KELEHER
2/18/2015

Treatment Report Page 2

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	2045															
MIRU	1745															
CIRCULATE	2125	0	2202	0	0			0			0			0		
Drop Plug		10	2204	70	10			10			10			10		
2202		20	2206	70	20			20			20			20		
		30	2209	80	30			30			30			30		
		40	2210	110	40			40			40			40		
M & P		50	2215	230	50			50			50			50		
Time	Sacks	60	2217	300	60			60			60			60		
2135-2200	471	70	2219	370	70			70			70			70		
		80	2221	410	80			80			80			80		
		90	2226	390	90			90			90			90		
		100	BUMP	940	100			100			100			100		
		110			110			110			110			110		
% Excess	16%	120			120			120			120			120		
Mixed bbls	83.87	130			130			130			130			130		
Total Sacks	471	140			140			140			140			140		
bbl Returns	19	150			150			150			150			150		
Water Temp	46															

Notes:

PERFORMED PRESSURE TEST TO 1500 PSI AT 2123, PUMPED 30 BBL WATER WITH DYE IN 2ND 10 AT 2125, MIXED AND PUMPED 471 SKS AT 14.2, 125 BBL AT 2135, SHUT DOWN AT 2200, STARTED DISPLACEMENT AT 2202, PLUG LANDED AT 390 PSI AT 2226 AND PRESSURED UP TO 940, HELD FOR 5 MINUTES AND RELEASED TO CHECK FLOATS, GOT .5 BBL BACK, FLOATS HELD.

x Randy Case
Work Performed

x APC Consultant
Title

x 02/18/2015
Date

MILK 35N-28HZ SURFACE

