Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 11/14/2015
Invoice # 80654
API# 05-123-40755
Foreman: JASON KELEHER

Customer: Noble Energy Inc.
Well Name: MOSER H34-717

County: Weld
State: Colorado
Sec: 27
Twp: 3N
Range: 65W

Consultant:
Rig Name & Number: H&P 343
Distance To Location: 26
Units On Location: 4031-3106/ 4034-3213
Time Requested: 1730
Time Arrived On Location: 1600
Time Left Location: 2100

WELL DATA

Casing Size OD (in) :	_9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	849
Total Depth (ft) :	883
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	100
Conductor ID :	15.25
Shoe Joint Length (ft) :	41
Landing Joint (ft) :	24
Max Rate:	6
Max Pressure:	1000

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	14.2
Cement Yield (cuft) :	1.49
Gallons Per Sack:	7.48
% Excess:	25%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	20.0
Fluid Ahead (bbls):	50.0
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup
50 BBL WATER DYE IN 2ND 10

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 17.84 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 76.31 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 457.57 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 551.73 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 98.26 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 370 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 65.95 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 64.31 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus
Hydrostatic Pressure: 626.31 PSI

Pressure of the fluids inside casing
Displacement: 348.35 psi
Shoe Joint: 30.32 psi
Total 378.67 psi

Differential Pressure: 247.64 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 200.26 bbls

x _____
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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Well Name	MOSER H34-717

INVOICE #	80654
LOCATION	Weld
FOREMAN	JASON KELEHER
Date	11/14/2015

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DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
% Excess	25%	1600	ARRIVE ON LOCATION	WELL SITE ASSESMENT/ HAZARD HUNT			
Mixed bbls	65.9	1815	MIRU	SPOT EQUIPMENT			
Total Sacks	370	1850	JSA	REVIEW JOB/ HAZARDS/ EMERGENCIES			
bbl Returns	20	1929	Pressure Test	TEST LINES TO 1400			1400
Water Temp	61	1931	Spacer Ahead	50 BBL WATER	6.6	50	170
		1941	Cement	14.2 PPG CEMENT (370 SKS)	6.5	98.2	220
Notes:		1957	Shutdown				
		1959	Drop Plug	PLUG PRELOADED			
		2000	Start Displacement	FRESH WATER	1.5	64.3	250
		2017	Bump Plug	BUMP PLUG			470
		2018	Pressure Test Casing	PRESSURE UP TO 1000 PSI FOR 12 MIN			990
		2034	Check Floats	FLOATS HELD/ .5 BBL BACK			990
		2040	Rig Down	HOLD RIG DOWN JSA			
		2100	Leave Location	HOLD PRE JOURNEY MEETING			

X Derek Dupas
Customer Signature

X
Title

X
Date