



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/21/2015
Invoice #: 90028
API#: 05-123-41950
Supervisor: Nick

Customer: Anadarko Petroleum Corporation
Well Name: Powers 2N-27HZ

County: Weld
State: Colorado
Sec: 22
Twp: 2N
Range: 65W

Consultant: Bryan Brown
Rig Name & Number: Noble 2
Distance To Location: 30
Units On Location: 024/3210/4027/3106/3105/320
Time Requested: 10:00
Time Arrived On Location: 9:35
Time Left Location: 1:30

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.) : 1,869	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1879	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 20%
Conductor Length (ft) : 40	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.25	BBL to Pit: 50.0
Shoe Joint Length (ft) : 43	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 10	H2O Wash Up (bbls): 20.0
Max Rate: 8	Spacer Ahead Makeup
Max Pressure: 1750	30 bbl dye in second 10

Casing ID	8.921	Casing Grade	J-55 only used
Calculated Results	Displacement: 141.94 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)		
cuft of Shoe 18.66 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of cement in annulus		
cuft of Conductor 30.53 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 1378.76 PSI		
cuft of Casing 1072.66 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing		
Total Slurry Volume 1121.85 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 787.34 psi		
bbls of Slurry 199.80 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 31.72 psi		
Sacks Needed 753 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 819.06 psi		
Mix Water 134.09 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 559.70 psi		
	Collapse PSI: 2020.00 psi		
	Burst PSI: 3520.00 psi		
	Total Water Needed: 326.03 bbls		

X Bryan Brown
Authorization To Proceed



Customer
Well Name

Anadarko Petroleum Corporation
Powers 2N-27HZ

INVOICE #

90028

LOCATION

Weld

Supervisor

Nick

Date _____

8/21/2015

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DESCRIPTION OF JOB EVENTS

X BBA — Bryan Brown
Work Performed

X Co. Man
Title

X 8/21/15
Date

Powers 2N-27HZ

