

Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/19/2014
Invoice # 45058
API# 05-123-3645
Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation

Well Name: BUFFALO 14N-15HZ

County: Weld
State: Colorado
Sec: 15
Twp: 1N
Range: 68W

Consultant: TOBY
Rig Name & Number: MAJORS 42
Distance To Location: 30
Units On Location: 4031-3106/ 4022-3213
Time Requested: 2030
Time Arrived: 1930
Time Left Location: 1200

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 1,272
Total Depth (ft) : 1282
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) :
Conductor ID :
Shoe Joint Length (ft) : 43
Landing Joint (ft) : 6

Max Rate: 7
Max Pressure: 2500

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 15%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 26.0
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
30 BBL WATER, DYE IN 2ND 10

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.66 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 0.00 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 714.91 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 733.58 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 130.65 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 492 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 87.68 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 95.48 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 938.35 PSI

Pressure of the fluids inside casing

Displacement: 529.92 psi

Shoe Joint: 31.72 psi

Total 561.64 psi

Differential Pressure: 376.71 psi

Collapse PSI: 2020.00 psi

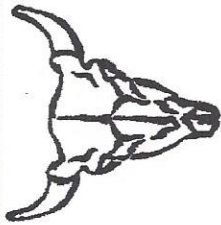
Burst PSI: 3520.00 psi

Total Water Needed: 233.16 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.



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

INVOICE #
LOCATION
FOREMAN
Date

45058
Weld
JASON KELEHER
10/19/2014

Customer
Well Name

Anadarko Petroleum Corporation
BUFFALO 14N-15HZ

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	2115															
MIRU	2045															
CIRCULATE	2151	0	2227	0	0			0			0			0		
Drop Plug		10	2229	30	10			10			10			10		
		20	2232	30	20			20			20			20		
2226		30	2236	70	30			30			30			30		
		40	2238	170	40			40			40			40		
		50	2240	250	50			50			50			50		
M & P		60	2243	320	60			60			60			60		
Time	Sacks															
2159-2225	492	70	2245	380	70			70			70			70		
		80	2247	420	80			80			80			80		
		90	2250	450	90			90			90			90		
		100	2252	470	100			100			100			100		
		110	BUMP	1460	110			110			110			110		
% Excess	15%	120			120			120			120			120		
Mixed bbls	87.6	130			130			130			130			130		
Total Sacks	492	140			140			140			140			140		
bbl Returns	26	150			150			150			150			150		
Water Temp	59															

Notes:

PERFORMED PRESSURE TEST TO 2000 PSI AT 2149, PUMPED 30 BBL WATER W/ DYE IN 2ND 10 AT 2151, MIXED AND PUMPED 492 SKS AT 14.2, 130.6
BBL AT 2159, SHUT DOWN AT 2225, STARTED DISPLACEMENT AT 2227, LANDED PLUG AT 470 PSI AT 222 AND PRESSURED UP TO 1460 PSI, HELD FOR
2 MINUTES AND CHECKED FLOATS, GOT .75 BBL BACK, REPRESSURED WELL TO 1000 PSI FOR 2 MINUTES AND RELEASED.

X 

X

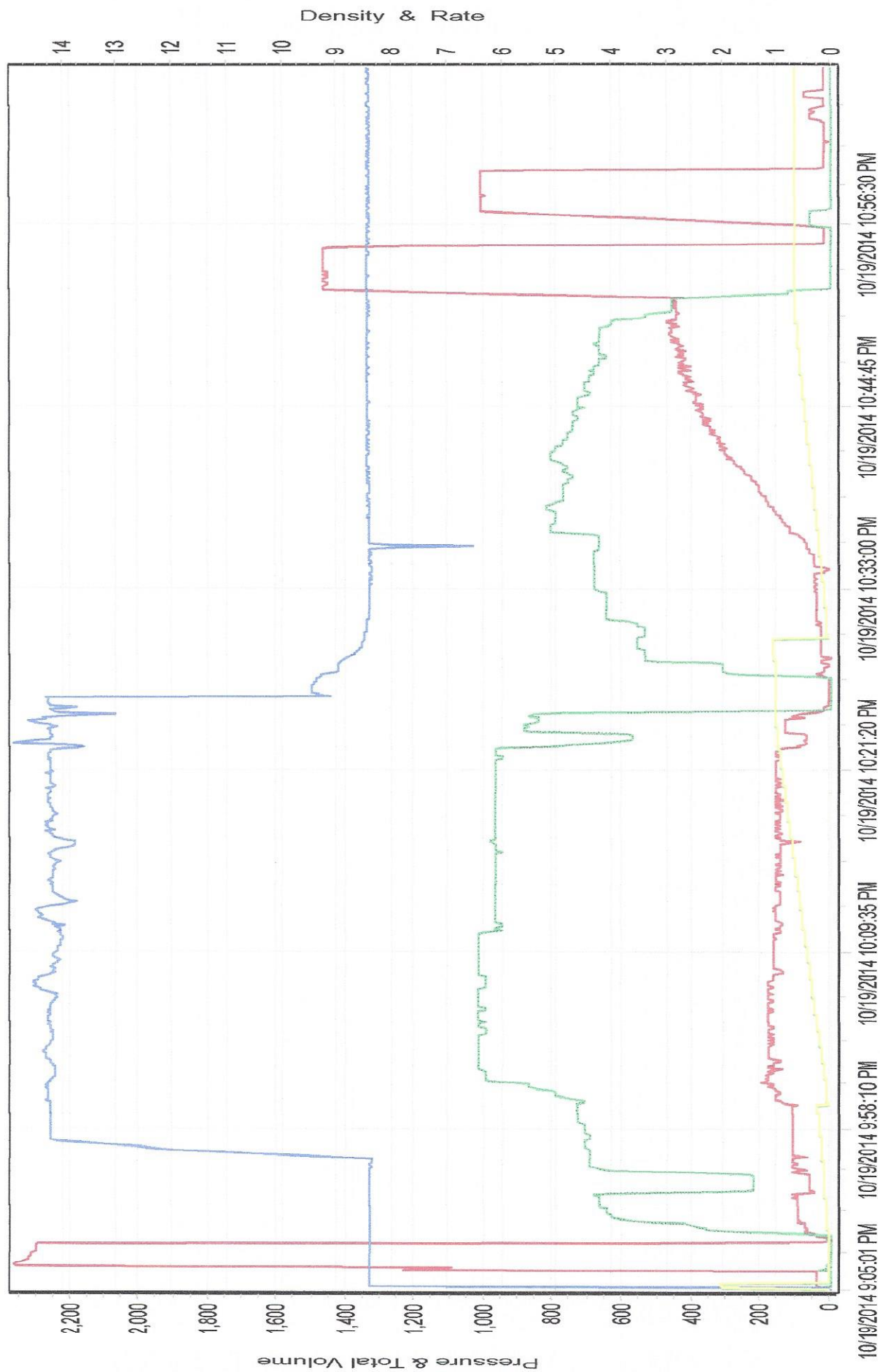
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Work Performed

Title

Date

BUFFALO 14N-15HZ SURFACE





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Release and Indemnification

Customer acknowledges and assumes the risks associated with oil well drilling, cementing and acidizing, including, without limitation, destabilization, loss of production, contamination, fracturing and loss of well control. Customer agrees to release Bison Oil Well Cementing, Inc., Bison Energy Services, Inc., its agents, employees and assigns, from any and all liability for any and all damages whatsoever to property of any kind owned by, in the possession of, or leased by customer and those persons or entities customer has the ability to bind by contract. Customer also agrees to indemnify and hold harmless Bison Oil Well Cementing, Inc., Bison Energy Services, Inc., its agents, employees and assigns, from and against any and all liability, claims, costs, expenses, attorneys fees and damages whatsoever for claims, costs, expenses, attorneys fees and damages whatsoever for personal injury, illness, death, property damage and loss resulting from: loss or reduction of production, destabilization loss of oil well control, failure of or contamination by acid stimulation, hydraulic fracturing, cementing, pumping services, incompatible fluid or other processes to stimulate, complete or end production, and/or any other condition. Customer's release, indemnity and hold harmless obligation shall apply even if the liability and claims are caused by the sole, concurrent, active or passive negligence, fault, or strict liability of Bison Oil Well Cementing, Inc. and/or Bison Energy Services, Inc. or any defect in the data, products, supplies, materials or equipment furnished by Bison Oil Well Cementing, Inc. whether in the design, manufacturing, maintenance, or marketing thereof or from failure to warn of such defect. In the event that any portion of this release and indemnity is found by a court of competent jurisdiction to be inoperable or unenforceable, the remaining portions and provisions shall apply, and customer agrees that the contract price herein shall be the limit of Bison Oil Well Cementing, Inc.'s liability, if any.