



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

Date: 3/12/2015

Invoice # 80059

API#

Foreman: kirk kallhoff

Customer: Anadarko Petroleum Corporation

Well Name: cream state 28c-21hz

County: Weld

State: Colorado

Sec: 28

Twp: 3n

Range: 65w

Consultant: randy

Rig Name & Number: advanced 10

Distance To Location: 10

Units On Location: 4038-3103/4034-3211

Time Requested: 430 am

Time Arrived On Location: 300 am

Time Left Location: 7:30 am

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.) :	1,199	Cement Yield (cuft) :	1.49
Total Depth (ft) :	1217	Gallons Per Sack:	7.48
Open Hole Diameter (in.) :	13.50	% Excess:	20%
Conductor Length (ft) :	45	Displacement Fluid lb/gal:	8.3
Conductor ID :	16	BBL to Pit:	
Shoe Joint Length (ft) :	43	Fluid Ahead (bbls):	30.0
Landing Joint (ft) :	8	H2O Wash Up (bbls):	10.0
Max Rate:		Spacer Ahead Makeup	
Max Pressure:			

Calculated Results		Pressure of cement in annulus	
cuft of Shoe	18.66 cuft	Displacement:	89.99 bbls
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Conductor	40.09 cuft	Hydrostatic Pressure:	884.50 PSI
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Pressure of the fluids inside casing	
cuft of Casing	676.79 cuft	Displacement:	498.45 psi
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Shoe Joint:	31.72 psi
Total Slurry Volume	735.55 cuft	Total	530.17 psi
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Differential Pressure:	354.34 psi
bbls of Slurry	131.00 bbls	Collapse PSI:	2020.00 psi
(Total Slurry Volume) X (.1781)		Burst PSI:	3520.00 psi
Sacks Needed	494 sk	Total Water Needed:	217.90 bbls
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water	87.92 bbls		
(Sacks Needed) X (Gallons Per Sack) ÷ 42			

X *Randy*
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 # 80059
LOCATION Weld
FOREMAN kirk kallhoff
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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	530am															
MIRU	330am															
CIRCULATE	558am	0	635am	10	0			0			0			0		
Drop Plug		10	637am	50	10			10			10			10		
635 am		20	639am	50	20			20			20			20		
		30	641am	110	30			30			30			30		
		40	643am	170	40			40			40			40		
M & P		50	645am	240	50			50			50			50		
Time	Sacks	60	647am	300	60			60			60			60		
605 am	494	70	649am	360	70			70			70			70		
632 am stop		80	651am	400	80			80			80			80		
		90	655am	380	90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	20%	120			120			120			120			120		
Mixed bbls	87.9	130			130			130			130			130		
Total Sacks	494	140			140			140			140			140		
bbl Returns	22	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 655 am 920 psi

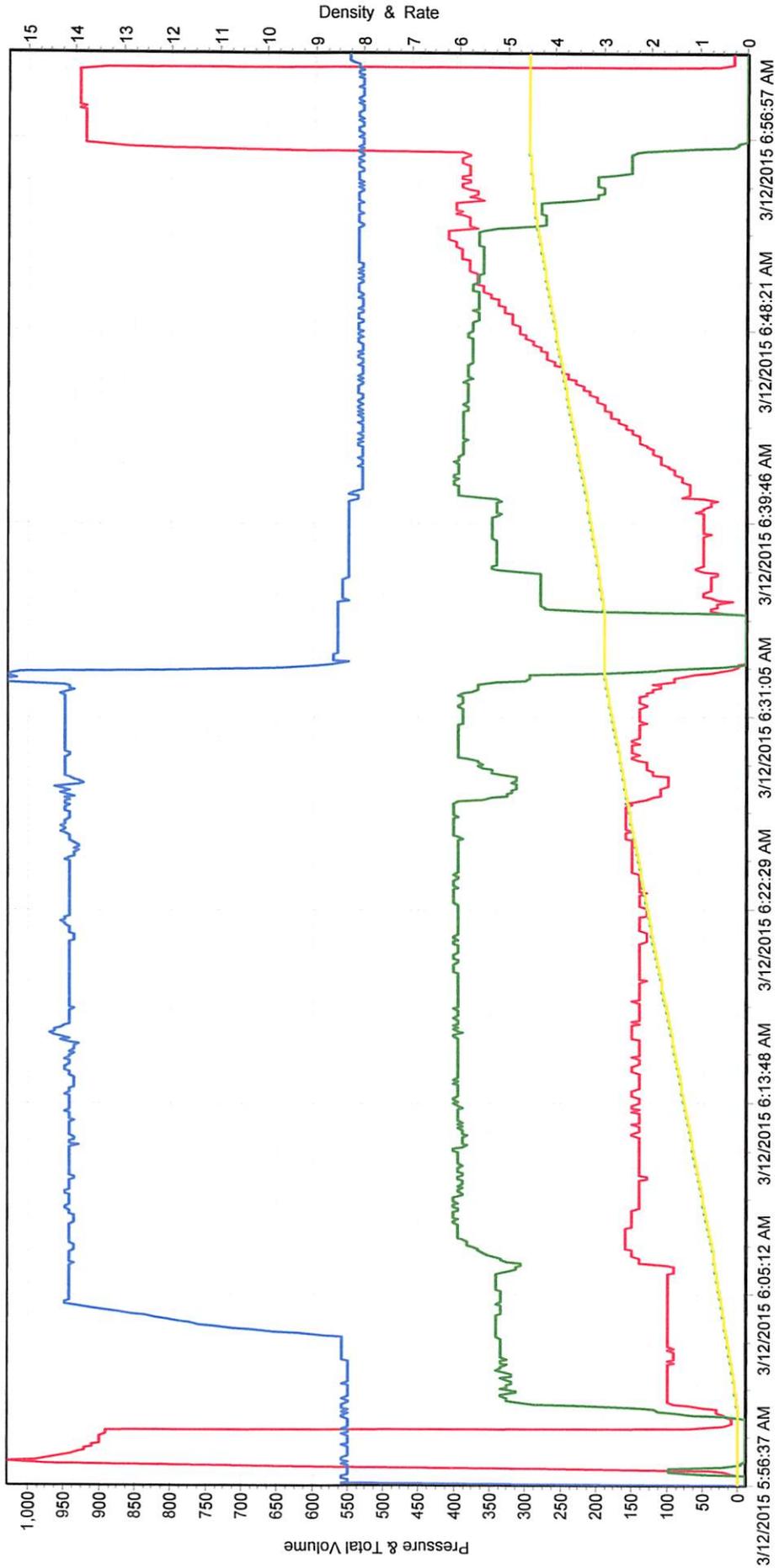
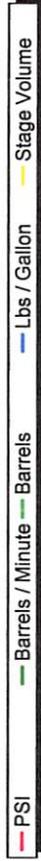
floats held

X *[Signature]*
Work Performed

X _____
Title

X 3-12-15
Date

M/D TOTCO 2000 SERIES



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.