



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/1/2014

Invoice # 12312

API# 445564

Foreman: MONTE

Customer: encana

Well Name: volg mccoy 2h-5h-f267

County: weld
State: coloradoSec: 5
Twp: 2n
Range: 67wConsultant: quiz
Rig Name & Number: h & p 278
Distance To Location: 24.2
Units On Location: 3103-3211, 4024, 4020
Time Requested: 10:00pm
Time Arrived On Location: 22:00
Time Left Location:

WELL DATA

Casing Size OD (in) : 9.6250
Casing Weight (lb) : 40
Casing Depth (ft.) : 833
Total Depth (ft) : 869
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 108
Conductor ID : 15.5
Shoe Joint Length (ft) : 36
Landing Joint (ft) : 25

Max Rate: 5
Max Pressure: 1000

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 15.2
Cement Yield (cuft) : 1.27
Gallons Per Sack: 5.89
% Excess: 25%
Displacement Fluid lb/gal:
BBL to Pit:
Fluid Ahead (bbls):
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

10 fresh 10 dye 10 fresh

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 15.33 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 86.95 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 227.05 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 329.33 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 73.32 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 324 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 45.46 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 62.33 bbls

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

Pressure of cement in annulus

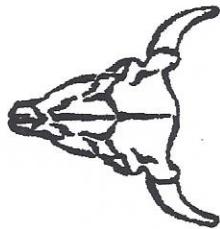
Hydrostatic Pressure: 657.74 PSI

Pressure of the fluids inside casing

Displacement: #N/A psi**Shoe Joint:** 28.43 psi**Total** #N/A psi**Differential Pressure:** #N/A psi**Collapse PSI:** 2570.00 psi**Burst PSI:** 3950.00 psi**Total Water Needed:** 65.46 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

encana
volg mccooy 2h-5h-f267

INVOICE #
LOCATION
FOREMAN
Date

12312
weld
MONTE
2/1/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting		1:15am		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
MIRU	2:45	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI		
CIRCULATE	3:05	0	3:52	110	0			0			0			0				
Drop Plug		10	3:52	110	10			10			10			10				
		20	3:54	100	20			20			20			20				
		30	3:56	280	30			30			30			30				
		40	3:58	260	40			40			40			40				
M & P		50	4:00	350	50			50			50			50				
		60	4:02	350	60			60			60			60				
		70	4:06	520	70			70			70			70				
		80			80			80			80			80				
3:20-3:45	324	624																
		90			90			90			90			90				
		100			100			100			100			100				
		110			110			110			110			110				
		120			120			120			120			120				
% Excess	25%	120			120			120			120			120				
Mixed bbls	45.5	130			130			130			130			130				
Total Sacks	324	140			140			140			140			140				
		150			150			150			150			150				
bbl Returns	12																	

Notes:

saftey meeting, miru, pressure test per company man, circulate 30 bbls ahead with dye in 2nd 10. mix and pump 324 sks at 25 % excess
drop plug and displace 21.3 bbls h2o, 12 back

X Rig Supervisor

X Rig Supervisor

X 02-03-14

Work Performed



Bison Oil Well Cementing Single Cement Surface Pipe

Cementing Customer Satisfaction Survey

Service Date	2/1/2014
Well Name	volg mccoy 2h-5h-f267
County	weld
State	colorado
SEC	5
TWP	2n
RNG	67w

Invoice Number	20511
API #	445564
Job Type	Single Cement Surface Pipe
Company Name	encana

Customer Representative quiz

Supervisor Name monte

Employee Name (Including Supervisor)
<u>jon</u>
<u>jeff</u>

Exposure Hours (Per Employee)

<u>5</u>
<u>5</u>
10

Total Exposure Hours

Did we encounter any problems on this job?

☐ Yes ☒ No

To Be Completed By Customer

Rating/Description

- 5 - Superior Performance (Established new quality/performance standards)
 - 4 - Exceeded Expectation (Provided more than what was required/expected)
 - 3 - Met Expectations (Did what was expected)
 - 2 - Below Expectations (Job problems/failures occurred - *Recovery made)
 - 1 - Poor Performance (Job problems/failures occurred - *Some recovery made)
- *Recovery: resolved issue(s) on jobsite in a timely and professional manner

RATING	CATEGORY
<u>3</u>	Personnel -
<u>3</u>	Equipment -
<u>3</u>	Job Design -
<u>3</u>	Product/Material -
<u>3</u>	Health & Safety -
<u>3</u>	Environmental -
<u>3</u>	Timeliness -
<u>3</u>	Condition/Appearance -
<u>3</u>	Communication -

CUSTOMER SATISFACTION RATING

- Did our personnel perform to your satisfaction?
- Did our equipment perform to your satisfaction?
- Did we perform the job to the agreed upon design?
- Did our products and materials perform as you expected?
- Did we perform in a safe and careful manner (Pre/post mtgs, PPE, TSMR, etc..)?
- Did we perform in an environmentally sound manner (spills, leaks, cleanup, etc..)?
- Was job performed as scheduled (On time to site, accessible to customers, completed when expected)?
- Did the equipment condition and appearance meet your expectations?
- How well did our personnel communicate during mobilization, rig up and job execution?

Please Circle:

- | | | |
|------------|-----------|--|
| Yes | <u>No</u> | Did an accident or injury occur? |
| Yes | <u>No</u> | Did an injury requiring medical treatment occur? |
| Yes | <u>No</u> | Did a first-aid injury occur? |
| Yes | <u>No</u> | Did a vehicle accident occur? |
| <u>Yes</u> | No | Was a post-job safety meeting held? |

Please Circle:

- | | | |
|------------|-----------|--------------------------------------|
| <u>Yes</u> | No | Was a pre-job safety meeting held? |
| <u>Yes</u> | No | Was a job safety analysis completed? |
| <u>Yes</u> | No | Were emergency services discussed? |
| Yes | <u>No</u> | Did environmental incident occur? |
| Yes | <u>No</u> | Did any near misses occur? |

Additional Comments:

THE INFORMATION HEREIN IS CORRECT -

X Jim Juveney
Customer Representative's Signature

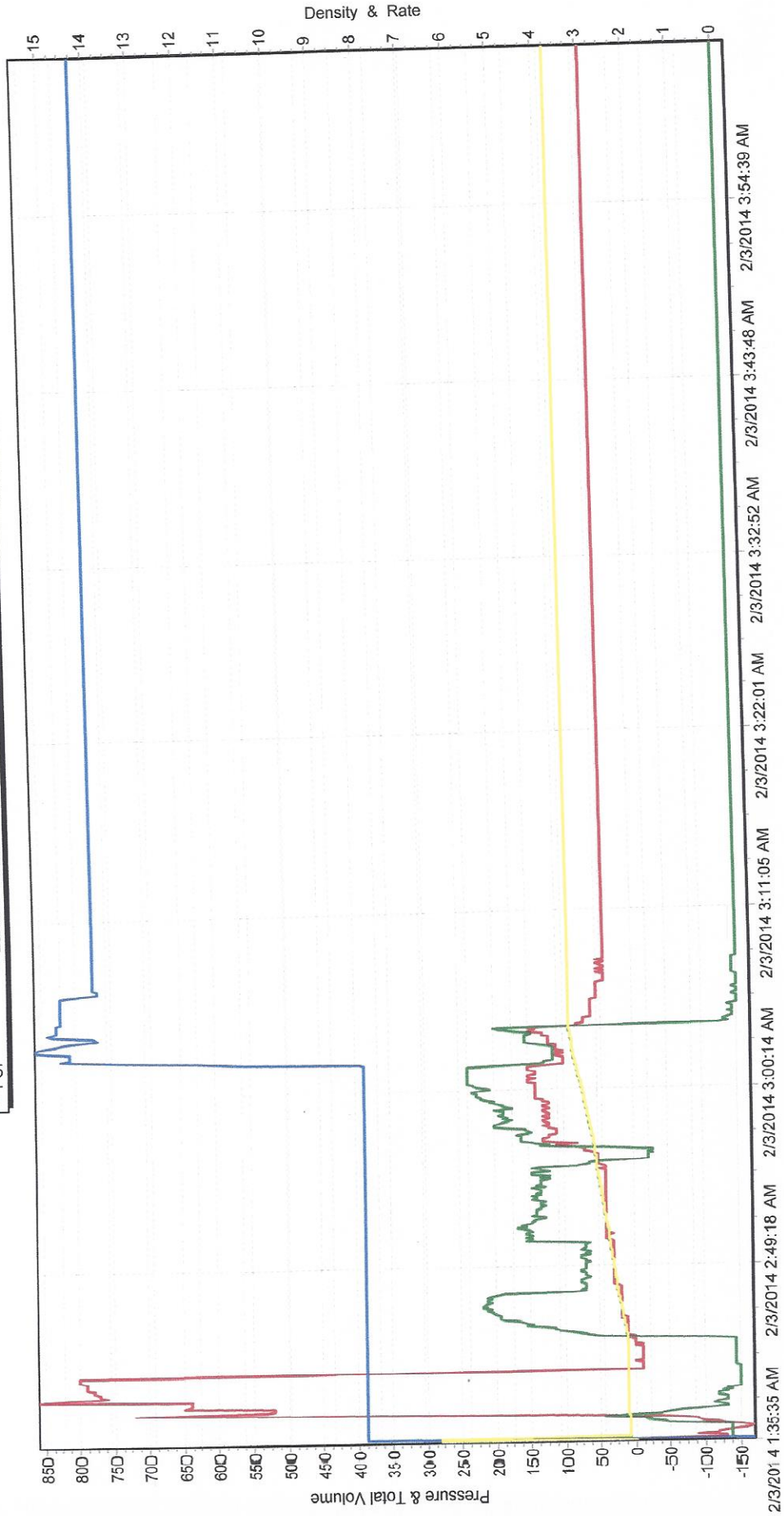
DATE:

02-03-14

Any additional Customer Comments or HSE concerns should be described on the back of this form

M/D TOTCO 2000 SERIES

— PSI — Barrels / Minute — Barrels — Lbs / Gallon — Stage Volume





BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET














ASK: SURFACE CASING CEMENTING		CEMENTER/SUPERVISOR: monte bedeaux		PAGE 1	OF 3
NAME: volg mccooy 2h-5h-f267		RIG # h & p 238	LOCATION: frontier rd	DATE: 2-2-14	
ATOR: encana		CONSULTANT: quiz		INVOICE # 12312	
EQUIPED: <input type="checkbox"/> Hard Hat <input type="checkbox"/> Safety Glasses <input type="checkbox"/> Steel Toe Boots <input type="checkbox"/> Impact Gloves		<input type="checkbox"/> FR CoverallsADDITIONAL PPE (based on job specific hazards) <input type="checkbox"/> Reflective Vest <input type="checkbox"/> Goggles <input type="checkbox"/> Faceshield <input type="checkbox"/> Chemical Resistant Gloves <input type="checkbox"/> Personal H2S Monitor <input type="checkbox"/> Chemical Resistant Clothing <input type="checkbox"/> Personal Methane Monitor <input type="checkbox"/> Air Purifying Respirator <input type="checkbox"/> Supplied Air Respirator			
JOB STEPS		POTENTIAL HAZARDS		RECOMMENDED ACTION OR PROCEDURE	
iew JSA	Misunderstanding	Clarify job and associated hazards and safety concerns		mb	
duct pre job safety meeting	Misunderstanding	-Hold safety meeting with all personnel on location, ensure everyone pays attention to ensure they understand their role and responsibility during the job -Review treatment report with consultant and attain signature for authorization to proceed -Identify and address short service employees (SSE) who are on location -Coordinate with well site supervisor for directions on where and when to park the equipment -All Bison crew members walk the location prior to driving in to access specific hazards -Utilize spotters when trucks are in motion -Establish buffer zone around equipment utilizing cones and caution tape -Cementier follows up to ensure connections are secure -Lift with your legs and use teamwork when rigging up -Utilize reflective vests and wands to increase visibility at night -Deploy spill berms and buckets -Inspect slings, chains and hooks prior to lift -Ensure line of sight with crane/tugger operator is maintained throughout the lift and hand signals are understood -Ensure no personnel are under suspended equipment -Utilize a tag line to control the load		mb	
ve trucks in and rig up equipment	Other traffic on location, overhead lines, pinch points, heavy lifting, slips/falls			mb	
e cement head and hoses to rig floor	Overhead work, improper hookup/load not properly secured, poor communication between ground personnel and crane/tugger operator	-Only Bison personnel install the cement head and hoses -Maintain line of sight and communication with crane/tugger operator -Remove non-essential personnel from rig floor, wait until other activity is done -Rig crew does not install chains until head and hoses are installed -Ensure a clear path when swinging a hammer -Ensure all fittings and hoses have proper pressure rating for the job and fall within the parameters of the <i>Bison Oilwell Iron Inspection Program</i>		mb	
irect Cement head/swage/pin, chickens and es.	Working in a congested area, pinch points, swinging hammers, slippery rig floor			mb	
ssure test lines	Test to: PSI- 1000 Maximum pressure allowed for job: PSI- 1500	Equipment failing under high pressures		mb	
np Spacer (dye marker)/Mix and Pump tent	PSI- 1500	-Pressure test prior to job, utilize heavy duty hose hobbles and pressure relief valve -Keep rig floor and buffer area clear while pumping -Utilize proper PPE -Have access to water to rinse affected skin -Deploy spill berms and buckets		mb	
Serious injury from high pressure line failure or catastrophic equipment failure. Casing hydraulicing from hole, causing injury. Burns or skin irritation from splashing cement, uncontrolled spills					



BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET

p plug	Slips, trips, falls. Miscommunication between pump operator and cementer, pressure against a closed stop	-Utilize 3 points of contact while descending/climbing ladder and stairs -Have visual contact between cementer and pump operator before pump is engaged	mb
placement	Unexpected pressure associated with resuming of pumping, casing hydraulicing from hole, serious injury from high pressure line failure or catastrophic equipment failure.	-Ensure rig floor remains clear and non-essential personnel stay clear from buffer area -Pump operator monitors pump pressure constantly -Utilize proper PPE	mb
imp plug-Test float and release pressure	Pressure jumps before expected (calculated) displacement. Pressure jumps rapidly and higher than expected.	-Pump operator slows rate to 2BPM when 5 bbls from calculated displacement and down to 1 bpm -Pump operator monitors pressure constantly -Pressure relief valve installed on pump	mb
Pressure test casing required)	Test to: PSI- na FOR:MIN- na	Serious injury from high pressure line or catastrophic equipment failure	mb
ash up / rig down	Splashing cement slurry, heavy lifting, pinch points, unsecured hoses	-Utilize stakes or portable tank manifold to secure hoses -Use proper lifting technique (2 man lift, lift with legs, plan your route)	mb
part location	Other traffic and personnel and location, overhead lines	-All Bison crew member walk the planned exit route to access possible obstacles and hazards -Utilize spotters while backing	mb
General Precautions/Stop Work - If you see a leaking connection, notify the cementer. Do not attempt to hammer up a leaking connection as there may be pressure on the lines. -Any person on location, regardless of their position or experience level has the authority and responsibility to stop the job if they witness an unsafe act or condition.			mb
OTHER HAZARDS SPECIFIC TO LOCATION OR COMMENT NOT ADDRESSED ABOVE:		NEAREST EMERGENCY MEDICAL FACILITY (OTHER THAN 911): longmont	mb

rd
COUNT-- 14

Signature and Company		
	Bison	Nach Frank 2 H&P
	Bison	
	Wise	
	Muel	
	Wise	
	Wise	
	Wise	
	EMCANA	
	RDF	
	HIP	
	HIP	
	H&P	
		



BISON
Oil Well Cementing Inc.

PRE TRIP CEMENT CALL OUT SHEET

INVOICE #

12312

DATE/TIME

2-2-14

WELL NAME

Volg-mecoy 2H-5H-F267

OPERATOR

Quz

CUSTOMER

Encang

LOCATION/RIG

144P 238

DELIVERED TO

Frontier Rd

PRE CHECK CALL OUT

CHECK ITEMS	Supervisor Initials	Other Initials	BULK TRUCK DRIVER	Supervisor Initials	Other Initials
DRY SAMPLE #	MB	JK	VACUUM BREAKER PORT CLEANED & INSPECTED & SPARE ON TRUCK	MB	
REQUIRED CEMENT CONNECTIONS	MB	JK	WATER JET AT MIX HEAD REMOVED, INSPECTED & CLEANED	MB	
TYPE OF CEMENT	BAFFNTA	✓	CEMENTING HEAD INSPECTED & CLEANED	MB	
# OF LBS/SACKS	Full		MIX TUB INSPECTED & CLEANED	MB	
FLOAT EQUIPMENT	at Rig		CENTRIFUGALS GREASED, TIGHTENED & INSPECTED	MB	
BEGINNING FUEL	Full	✓	DECK MOTORS STARTED	MB	
STARTING MILEAGE	68535	✓	VERIFY ALL AIR VALVES ARE FUNCTIONAL	MB	
PERSONAL PROTECTIVE EQUIPMENT	MB	JK	VERIFY ALL VALVES ARE FUNCTIONAL ON BULK TRUCK	MB	JK
DRIVING DIRECTIONS	MB	JK	VERIFY BERMS ARE ON BULK TRUCK	MB	JK
DRIVERS LOGS UPDATED PRIOR TO LEAVING YARD	MB	JK	VERIFY SPARE CEMENT HEAD IS ON BULK TRUCK	MB	JK
TRUCK PRE TRIP COMPLETED	MB	JK	VERIFY 1" TUBING IS ON BULK TRUCK AND ADEQUATELY SECURED	MB	JK
ROCK CATCHERS REMOVED & CLEANED	MB		CHECK FOR ADEQUATE SUPPLY OF KCL, DYE AND DEFOAMER	MB	✓
VACUUM BREAKER REMOVED & CLEANED	MB		TOP OFF FUEL IN TRUCKS POST TRIP		
VERIFY CORRECT POP OFF PIN IN PLACE	MB		VERIFY PARKING METER GAUGE IS ON TRUCK		
VERIFY PRESSURE TRANSDUCERS ARE CLEAN OF CEMENT	MB		DRAIN AIR TANKS		
CLEAN TRUCKS	MB	JK			
TIGHTEN PACKING NUTS ON PLUNGERS	MB				

CEMENT HEAD CHECK LIST

	Supervisor Initials	Other Initials
THREADS	MB	
VALVES	MB	
PIN	MB	

COMMENTS: