BISON OIL WELL CEMENTING, INC.

1738 Wynkoop St., Ste. 102
Denver, Colorado 80202
Phone: 303-296-3010
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E-mail: bisonoil1@qwestoffice.net

SERVICE INVOICE

№ 12552

WELL NO. AND FARM	COUNTY	STATE	DATE
Rodman Bruntz	Weld	CO	11-18-13

CHARGE TO	WELL LOCATION	CONTRACTOR
Encana	SEC. 26 TWP. 2N RANGE 66W	Ensign 124

DELIVERED TO	LOCATION 1	CODE
18-35	Shop	
SHIPPED VIA	**LOCATION 2**	**CODE**
3163-3214	18-35	
TYPE AND PURPOSE OF JOB	**LOCATION 3**	**CODE**
Surface Pipe	shop	
	WELL TYPE	**CODE**
	Gas	

PRICE REFERENCE	DESCRIPTION	UNITS QTY.	UNITS MEAS.	UNIT PRICE	AMOUNT
	Pump charge	1	each	1400.00	1400 00
	BF VIII 3% BCA1, 25 lbs per sk BCLY-1	499	sks	22.45	11202 55
	mileage 4.00 per mile 60 mile min Round trip Truck	2	each	240.00	480 00
	mileage 1.50 per mile 60 mile min Round trip Pick up	1	each	90.00	90 00
	Blue Dye	10	oz	15.00	150 00
	BCLY-1	3	Qks	25.00	75 00
		1	each	225.00	225 00
		100	lbs	2.00	200 00

Encana Oil & Gas (USA) Inc.	
DJ Basin	
Well:	Rodman Bruntz 26-2671
AFE:	SW1317543E
Major/Minor CC:	E715 618
Signature:	
Approver:	RC DM #382253

Total Weight | Loaded Miles | Ton Miles

If this account is not paid within 30 days of invoice date a FINANCE CHARGE will be made. Computed at a single monthly rate of 1½% which is equal to an ANNUAL PERCENTAGE RATE OF 18%.

TAX REFERENCES

SUB TOTAL	13822 55
TAX	
TOTAL	

"TAXES WILL BE ADDED AT CORPORATE OFFICE"

SUBJECT TO CORRECTION

Customer or His Agent

Bison Oil Well Cementing, Inc. Representative

Customers hereby acknowledges and specifically agrees to the terms and conditions on this work order, including, without limitation, the provisions on the reverse side hereof which include the release and indemnity.

Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 11/18/2013
Invoice # 12552
API#
Foreman: Kirk Kallhoff

Customer: encana
Well Name: rodman bruntz 2c-26h

County: weld
State: Colorado

Sec: 26
Twp: 2n
Range: 66w

Consultant: ~~mike~~ Dave H
Rig Name & Number: ensign 124
Distance To Location:
Units On Location: 3102-3206-3211
Time Requested: 700am
Time Arrived On Location: 700am
Time Left Location:

WELL DATA

Casing Size OD (in) :	9.6250
Casing Weight (lb) :	40
Casing Depth (ft.) :	1,240
Total Depth (ft) :	1268
Open Hole Diameter (in.) :	12.25
Conductor Length (ft) :	93
Conductor ID :	15.5
Shoe Joint Length (ft) :	44
Landing Joint (ft) :	18
Max Rate:	
Max Pressure:	

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	15.2
Cement Yield (cuft) :	1.27
Gallons Per Sack:	5.89
% Excess:	40%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	
Fluid Ahead (bbls):	
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup

Casing ID 8.835 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 18.73 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 74.87 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 359.22 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 452.82 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 112.91 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 499 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 70.00 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 92.05 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 979.10 PSI

Pressure of the fluids inside casing

Displacement: 515.69 psi
Shoe Joint: 34.74 psi
Total 550.43 psi

Differential Pressure: 428.67 psi

Collapse PSI: 2570.00 psi
Burst PSI: 3950.00 psi

Total Water Needed: 90.00 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

Customer	encana
Well Name	rodman bruntz 2c-26h

INVOICE #	12552
LOCATION	weld
FOREMAN	Kirk Kallhoff
Date	11/18/2013

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting	1218
MIRU	1135
CIRCULATE	217
Drop Plug	
254 pm	
M & P	

Time	Sacks
224 pm	499
251 pm stop	

% Excess	40%
Mixed bbls	70
Total Sacks	499
bbl Returns	40

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
0	254	20	0			0			0			0		
10	256	50	10			10			10			10		
20	258	60	20			20			20			20		
30	300	250	30			30			30			30		
40	302	350	40			40			40			40		
50	304	430	50			50			50			50		
60	306	490	60			60			60			60		
70	308	520	70			70			70			70		
80	310	580	80			80			80			80		
90	313	550	90			90			90			90		
100			100			100			100			100		
110			110			110			110			110		
120			120			120			120			120		
130			130			130			130			130		
140			140			140			140			140		
150			150			150			150			150		

Notes:

bumped plug at 315pm 630 psi

112.9 bbls slurry

X _____
Work Preformed

X _____
Title

X 11-18-13
Date

Bison Oil Well Cementing
Single Cement Surface Pipe

Cementing Customer Satisfaction Survey

Service Date	11/18/2013
Well Name	rodman bruntz 2c-26h
County	weld
State	Colorado
SEC	26
TWP	2n
RNG	66w

Invoice Number	20511
API #	0
Job Type	Single Cement Surface Pipe
Company Name	encana

Customer Representative: dave

Supervisor Name: kirk kallhoff

Employee Name (Including Supervisor)	Exposure Hours (Per Employee)
chris	9
eric	9
Total Exposure Hours	18

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	CUSTOMER SATISFACTION RATING
5	Personnel -	Did our personnel perform to your satisfaction?
5	Equipment -	Did our equipment perform to your satisfaction?
5	Job Design -	Did we perform the job to the agreed upon design?
5	Product/Material -	Did our products and materials perform as you expected?
5	Health & Safety -	Did we perform in a safe and careful manner (Pre/post mtgs, PPE, TSMR, etc..)?
5	Environmental -	Did we perform in an environmentally sound manner (spills, leaks, cleanup, etc..)?
5	Timeliness -	Was job performed as scheduled (On time to site, accessible to customers, completed when expected)?
5	Condition/Appearance -	Did the equipment condition and appearance meet your expectations?
5	Communication -	How well did our personnel communicate during mobilization, rig up and job execution?

Please Circle:			Please Circle:		
Yes	No	Did an accident or injury occur?	Yes	No	Was a pre-job safety meeting held?
Yes	No	Did an injury requiring medical treatment occur?	Yes	No	Was a job safety analysis completed?
Yes	No	Did a first-aid injury occur?	Yes	No	Were emergency services discussed
Yes	No	Did a vehicle accident occur?	Yes	No	Did environmental incident occur?
Yes	No	Was a post-job safety meeting held?	Yes	No	Did any near misses occur?

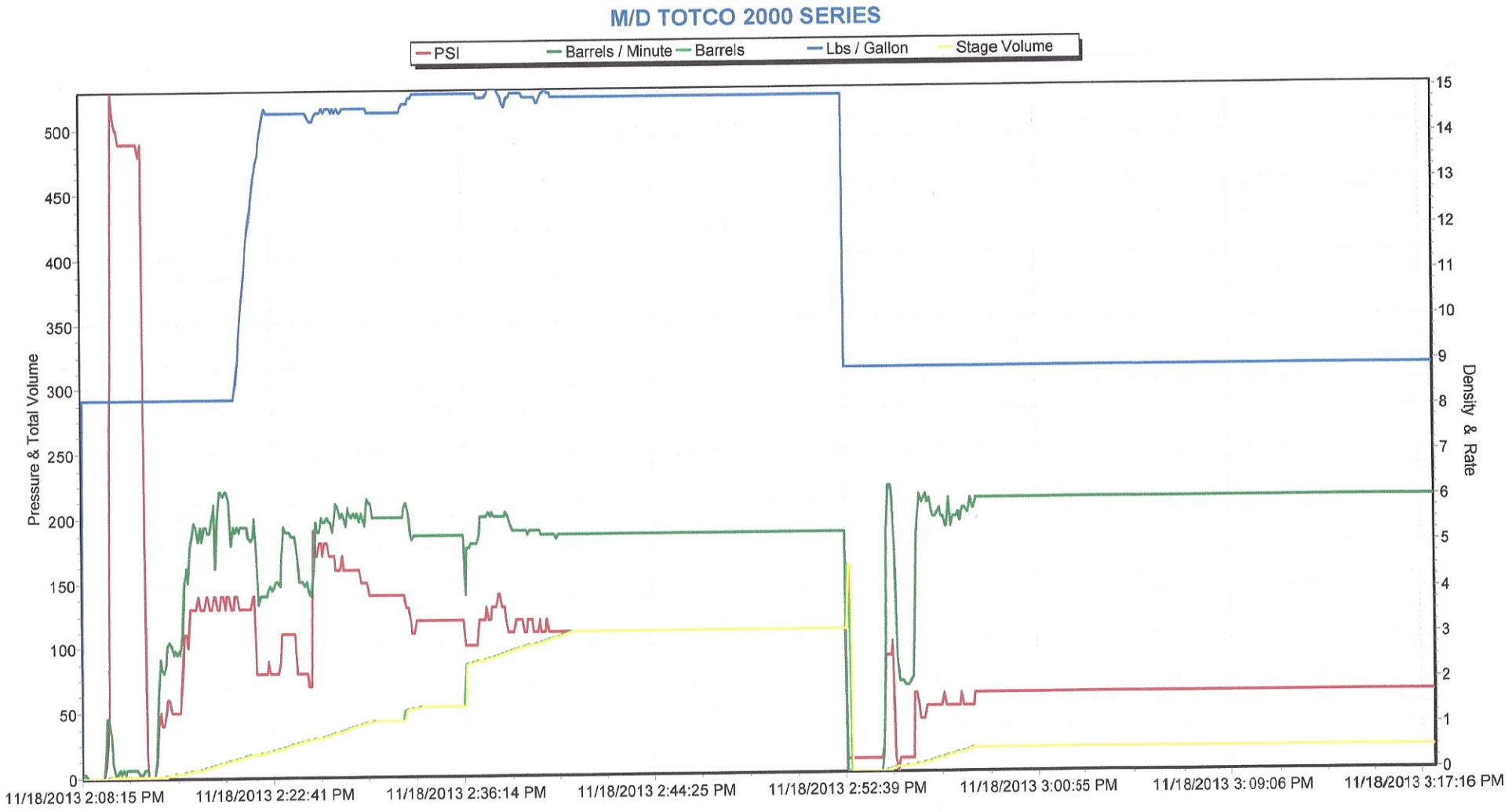
Additional Comments:

THE INFORMATION HEREIN IS CORRECT -

X _____
Customer Representative's Signature

DATE: 11-18-13

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
Pressure & Total Volume
Density & Rate
0
50
100
150
200
250
300
350
400
450
500
0
1
2
3
4
5
6
7
8
9
10
11
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11/18/2013 2:08:15 PM
11/18/2013 2:22:41 PM
11/18/2013 2:36:14 PM
11/18/2013 2:44:25 PM
11/18/2013 2:52:39 PM
11/18/2013 3:00:55 PM
11/18/2013 3:09:06 PM
11/18/2013 3:17:16 PM

BISON

BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET

ASK: SURFACE CASING CEMENTING	CEMENTER/SUPERVISOR: Kirk Kallhoff	PAGE 1	OF 3
NAME: rodman bruntz 2c-26h	RIG #ensign 124 / LOCATION:18-35	DATE: 11-18-13	
ATOR: encana	CONSULTANT: ~~mike~~ Dave H	INVOICE # 12552	

EQUIRED: ☑ Hard Hat ☑ Safety Glasses ☑ Steel Toe Boots ☑ Impact Gloves ☑ FR Coveralls ☐ Reflective Vest

ADDITIONAL PPE (based on job specific hazards) ☐ Goggles ☐ Faceshield ☐ Chemical Resistant Gloves ☐ Chemical Resistant Clothing ☐ Air Purifying Respirator ☐ Supplied Air Respirator ☐ Personal H2S Monitor ☐ Personal Methane Monitor

JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION OR PROCEDURE	REVIEWED BY
iew JSA	Misunderstanding	Clarify job and associated hazards and safety concerns	kk
ıduct 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	kk
ve trucks in and rig up equipment	Other traffic on location, overhead lines, pinch points, heavy lifting, slips/falls	-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 -Cementer 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	kk
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	-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	kk
ınect Cement head/swage/pin, chicksens and es.	Working in a congested area, pinch points, swinging hammers, slippery rig floor	-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 *Bison Oilwell Iron Inspection Program*	kk
ssure test lines — Test to: PSI- 500; Maximum pressure allowed for job: PSI- 2000	Equipment failing under high pressures	-Ensure rig floor is clear and personnel are away from hoses prior to test -Establish buffer area around high pressure hoses -Lines are checked from a distance and using pressure gauges -Cementer ensures pressure gauges are functioning properly Pressure relief valve set to: PSI- 1750 Max. pump pressure: PSI- 2000	kk
ıp Spacer (dye marker)/Mix and Pump ıent	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	-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	kk

BISON

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	kk
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	kk
mp plug-Test float and release pressure		Pressure jumps before expected (calculated) displacement. Pressure jumps rapidly and higher than expected.	-Pump operator slows rate to 2 BPM when 5 bbls from calculated displacement and down to 1 bpm within 2 bbls of calculated displacement -Pump operator monitors pressure constantly -Pressure relief valve installed on pump	kk
ssure test casing required)	Test to: PSI- FOR: MIN-	Serious injury from high pressure line or catastrophic equipment failure	-Ensure rig floor remains clear and non-essential personnel stay clear from the buffer area	kk
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)	kk
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	kk
neral 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.		
THER HAZARDS SPECIFIC TO LOCATION OR ONMENT NOT ADDRESSED ABOVE:				

NATED EMERGENCY MUSTER AREA: access rd

COUNT-- 16

NEAREST EMERGENCY MEDICAL FACILITY (OTHER THAN 911): greeley

BISON

BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET

Signature and Company	
JCF Bison	Ensign
~~Thom~~ 124	
Eric P. Rimer Bison	John Roberts Ensign
Bison	
Mike Bison	
ENSIGN	
JOE STIMO ENSIGN 124	
Henry Yocs RELIABLE	
Ensign	
Ensign	

BISON
Oil Well Cementing Inc.

PRE TRIP CEMENT CALL OUT SHEET

INVOICE # 12552 DATE/TIME 11-18-13

WELL NAME Redman Brandt OPERATOR

CUSTOMER Encana

LOCATION/RIG 18-35 Ensign 124

DELIVERED TO

PRE CHECK CALL OUT 4018-3211

CHECK ITEMS	Supervisor Initials	Other Initials	BULK TRUCK DRIVER	Supervisor Initials	Other Initials
DRY SAMPLE #	KK		VACUUM BREAKER PORT CLEANED & INSPECTED & SPARE ON TRUCK	✓	
REQUIRED CEMENT CONNECTIONS			WATER JET AT MIX HEAD REMOVED, INSPECTED & CLEANED	✓	
TYPE OF CEMENT BFN III 3%	KK		CEMENTING HEAD INSPECTED & CLEANED	✓	
# OF LBS/SACKS 3/4	KK		MIX TUB INSPECTED & CLEANED	✓	
FLOAT EQUIPMENT			CENTRIFUGALS GREASED, TIGHTENED & INSPECTED	✓	
BEGINNING FUEL 3/4	KK		DECK MOTORS STARTED	✓	
STATING MILAGE			VERIFY ALL AIR VALVES ARE FUNCTIONAL	✓	
PERSONAL PROTECTIVE EQUIPMENT	✓		VERIFY ALL VALVES ARE FUNCTIONAL ON BULK TRUCK	✓	
DRIVING DIRECTIONS	✓		VERIFY BERMS ARE ON BULK TRUCK	✓	
DRIVERS LOGS UPDATED PRIOR TO LEAVING YARD	✓		VERIFY SPARE CEMENT HEAD IS ON BULK TRUCK	✓	
TRUCK PRE TRIP COMPLETED	✓		VERIFY 1" TUBING IS ON BULK TRUCK	✓	
ROCK CATCHERS REMOVED & CLEANED	✓		VERIFY 1" IS ADEQUATELY SECURED ON BULK TRUCK	✓	
VACUUM BREAKER REMOVED & CLEANED	✓		CHECK FOR ADEQUATE SUPPLY OF KCL, DYE AND DEFOAMER	✓	
VERIFY CORRECT POP OFF PIN IN PLACE	✓		TOP OFF FUEL IN TRUCKS POST TRIP		
VERIFY PRESSURE TRANSDUCERS ARE CLEAN OF CEMENT	✓		VERIFY PARKING METER GAUGE IS ON TRUCK	✓	
CLEAN TRUCKS			DRAIN AIR TANKS		
TIGHTEN PACKING NUTS ON PLUNGERS	✓				

CEMENT HEAD CHECK LIST

	Supervisor Initials	Other Initials
THREADS	✓	
VALVES	✓	
PIN	✓	

COMMENTS: