

HOBBS OCD

ATS-14-412

Form 3160-3
(August 2007)

NOV 02 2014

SECRETARY'S POTASH

OCD Hobbs

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010UNORTHODOX
LOCATION RECEIVEDUNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. SHL: NM-84902 BHL: NM-54432	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Read and Stevens, Inc		7. If Unit or CA Agreement, Name and No.	
3a. Address 400 N. Pennsylvania Ave #1000 Roswell, NM 88201		8. Lease Name and Well No. <313633> North Lea 3 Fed Com #2H	
3b. Phone No. (include area code) 575-622-3770		9. API Well No. 30-025-42227	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 200' FNL 1670' FEL Lot 2 At proposed prod. zone 330' FSL 1670' FEL Unit 8		10. Field and Pool, or Exploratory Read and Stevens <50461> Teas East; Bone Spring South	
11. Sec., T. R. M. or Blk. and Survey or Area Sec. 3 T-20S R-34E		12. County or Parish Lea	
13. State NM		14. Distance in miles and direction from nearest town or post office* 26 miles WSW of Hobbs	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 200'		16. No. of acres in lease 640-612.45	
17. Spacing Unit dedicated to this well 160.15		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. See raduis maps attached.	
19. Proposed Depth 10,925TVD/ 15,385'MD		20. BLM/BIA Bond No. on file NM-2310	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) GL - 3678.6' RKB - 3700.6'		22. Approximate date work will start* 07/01/2014	
23. Estimated duration 60 days until completion		24. Attachments	

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the BLM.

25. Signature Randy McManis, President		Name (Printed/Typed) Lawrence		Date 01/20/2014	
Title Sr. VP. Drilling and Exploration President					
Approved by (Signature) James A. Amos		Name (Printed/Typed)		Date OCT 28 2014	
Title FIELD MANAGER		Office CARLSBAD FIELD OFFICE			

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

Capitan Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

NOV 04 2014

Read and Stevens, Inc.

400 N Pennsylvania Ave #1000, Roswell, NM 88201

Operator Certification: Application for Permit to Drill
North Lea 3 Fed Com #2H
Read and Stevens, Inc.
Lea County, New Mexico

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in the Application for Permit to Drill (APD) package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Read and Stevens, Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. I also certify responsibility for the operations conducted on that portion of the leased lands associated with this application with bond coverage provided by BLM Bond Number NM-2310. This statement is subject to the provisions of the 18U.S.C.1001 for filing a false statement.

Signed: Bob Roy McMillan
Tim Collier President
~~Sr. VP Drilling and Exploration~~

Dated: 23 January, 2014

Contents

Article I.	Well Overview:	3
Article II.	Estimated Formation Tops (geoprognois with TVD's adjusted to actual KB):	3
Article III.	Pressure Control:	3
Article IV.	Casing Program (minimum):	3
Article V.	Cement Program:	4
Section 5.01	13.375" Surface Casing	4
Section 5.02	9.625" Intermediate Casing	4
(i)	Cement detail if DV tool is used: Assuming losses at 3200'. DV tool and ECP will be placed at 3100'.	5
(ii)	Cement detail if no DV tool is used:	5
Section 5.03	5.5" Production Casing	6
Article VI.	Product Descriptions:	7
Article VII.	Mud Program:	8
Article VIII.	Mud Monitoring System:	8
Article IX.	Logging, Drill stem testing and Coring:	8
Article X.	Bottom Hole:	8
Article XI.	Abnormal Conditions:	8
Article XII.	H2S:	9
Article XIII.	Directional:	9
Article XIV.	Drilling Recorder:	9

Article I. Well Overview:

The North Lea 3 Fed Com #1H will be a horizontal well. 5.5" production casing will be used with ported subs for the completion. See attached WBS for spacing of ported subs.

Article II. Estimated Formation Tops (geoprognois with TVD's adjusted to actual KB):

Formation	TVD	Subsea	Thickness	Type
Rustler	1616'	-2079'		
Top of Salt	1746'	-1949'		
Base of Salt	3354'	-341'		
Tansil (Top of Capitan Reef)	3354'	-341'	2290'	Possible Fresh Water
Grayburg (Capitan Reef Bottom)	5101'	1400'		
Lamar Lime	5646'	1951'		
Delaware	5680'	1985'		
Brushy Canyon	7304'	3609'		
Bone Spring Lime	8244'	4549'		
Avalon	8748'	5053'	694'	Hydrocarbon
1 st Bone Spring	9442'	5747'	534'	Hydrocarbon
2 nd Bone Spring	9976'	6281'	621'	Hydrocarbon
3 rd Bone Spring	10597'	6902'	358'	Hydrocarbon

No shallow water zones as per the attached POD and water column report.

Article III. Pressure Control:

A 13-5/8" 5M BOP and 5M choke manifold will be used. See schematics below.

BOP test shall be conducted:

- A. when initially installed
- B. whenever any seal subject to test pressure is broken
- C. following related repairs
- D. at 30 day intervals

BOP, choke, kill lines, Kelly cock, inside BOP, etc. will be hydro tested to 250psi(low) and 5,000psi(high). The annular will be tested to 250psi (low) and 2500psi (high).

BOP will be function tested on each trip.

A Co-Flex hose may be used from the BOP to the Choke Manifold. If this is used the manufacturer specifications and certifications will be furnished prior to use. A variance is requested for use of a Co-Flex hose.

Downstream of the Choke Manifold assembly 1502(15,000psi working pressure) hammer unions will be used to connect the mud/gas separator. See Choke Manifold diagram. A variance is requested for use of hammer unions downstream of the choke manifold.

Article IV. Casing Program (minimum):

All casing is new API casing.

Sell COA

Hole Size	Casing	Weight lb/ft	Grade	Conn	MD/RKB	Stage
	20"				120'	Conductor
16"	13.375"	54.5	J-55	STC	4641' 1750'	Surface
12.25"	9.625"	40	L-80	LTC	5656' 5465'	Intermediate
8.5"	5.5"	17	P-110	BTC	15400'	Production

Size	Collapse psi	SF	Burst psi	SF	Tension Klbs	SF
13.375	1130	3.08	2730	3.54	514	5.66
9.625	3090	1.28	5750	2.03	727	3.33
5.5	7480	1.55	10640	1.29	568	3.06

Intermediate will be fluid filled per Steve Mon's
 13.375" casing will be set 25' into the Rustler
 9.625" casing will be set 10' into the Lamar Lime

7/11/14

Article V. Cement Program:

Section 5.1 13.375" Surface Casing

Lead:

Slurry WT	Yield	Sx	Gallons/ Sack	Excess	Additives
13.5ppg	1.93cuft/sk	598	9.71	100%	Class C + 4% bwoc Bentonite II + 2% bwoc Calcium Chloride + 0.25 lbs/ sack Cello Flake + 0.005% bwoc Static Free + 0.005 gps FP-6L

Tail:

Slurry WT	Yield	Sx	Gallons/ Sack	Excess	Additives
14.8ppg	1.34cuft/sk	166	6.35	100%	Class C + 1.5% bwoc Calcium Chloride + 0.005 lbs/ sack Static Free + 0.005 gps FP-6L

Circulate cement to surface. If cement does not circulate a 1" grout string will be used to perform a top job. The 13.375" casing ID is 12.615" and the OD of the coupling on the 9.625" casing is 10.620", which gives 1.995" divided by two will leave 0.9975" around. The 1" grout string fits in between the two annuli.

Cement volumes will be adjusted respectively once actual casing depth is determined and washout from a fluid caliper.

Section 5.2 9.625" Intermediate Casing

A DV tool and ECP will be used to cement this 9½" casing if losses are encountered in the Capitan Reef. DV tool and ECP placement will be determined if and when the loss circulation is encountered. DV tool and ECP placement will be a minimum of 100' above the lost circulation zone and a minimum of 100' from the previous casing shoe.

- (i) Cement detail if DV tool is used: Assuming losses at 3200'. DV tool and ECP will be placed at 3100'.

Cement Stage 1

Lead:

Slurry WT	Yield	Sx	Gallons/ Sack	Excess	Additives
12.6ppg	2.13cuft/sk	595	8.81	80%	Class C (35:65) + Poz (Fly Ash) + 4% bwoc Bentonite II + 5% bwoc MPA-5 + 0.25% bwoc FL-52 + 5 lbs/sack LCM-1 + 0.125 lbs/sack Cello Flake + 0.005 lbs/sack Static Free + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride

Tail :

Slurry WT	Yield	Sx	Gallons/ Sack	Excess	Additives
14.8ppg	1.33cuft/sk	220	6.35	80%	Class C

Cement Stage 2

Slurry WT	Yield	Sx	Gallons/ Sack	Excess	Additives
12.6ppg	2.13cuft/sk	690	8.81	80%	Class C (35:65) + Poz (Fly Ash) + 4% bwoc Bentonite II + 5% bwoc MPA-5 + 0.25% bwoc FL-52 + 5 lbs/sack LCM-1 + 0.125 lbs/sack Cello Flake + 0.005 lbs/sack Static Free + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride

Once DV tool placement is determined cement volumes will be adjusted accordingly.

- (ii) Cement detail if no DV tool is used:

Lead:

Slurry WT	Yield	Sx	Gallons/ Sack	Excess	Additives
12.5ppg	2.13cuft/sk	1275	8.81	80%	Class C (35:65) + Poz (Fly Ash) + 4% bwoc Bentonite II + 5% bwoc MPA-5 + 0.25% bwoc FL-52 + 5 lbs/sack LCM-1 + 0.125 lbs/sack Cello Flake + 0.005 lbs/sack Static Free + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride

Tail:

Slurry WT	Yield	Sx	Gallons/ Sack	Excess	Additives
14.8ppg	1.33cuft/sk	230	6.35	80%	Class C

Circulate cement to surface. If cement does not circulate to surface a top squeeze job or casing perforation will be used.

This will be discussed with the BLM prior to commencing remedial cement job. As well, a temperature survey or CBL will be performed. This will be discussed with the BLM prior to either being run.

Cement volumes will be adjusted accordingly once actual casing depth is determined and washout from a fluid caliper.

Section 5.3 5.5" Production Casing**Lead: Surface-10,900'**

Slurry WT	Yield	Sx	Gallons/ Sack	Excess	Additives
11.9ppg	2.38cuft/sk	1528	13.22	80%	Class H (50:50) + Poz (Fly Ash) + 10% bwoc Bentonite II + 5% bwow Sodium Chloride + 5 lbs/sack LCM-1 + 0.005 lbs/sack Static Free + 0.005 gps FP-6L

Tail: 10900'-TD

Slurry WT	Yield	Sx	Gallons/ Sack	Excess	Additives
13.2ppg	1.62cuft/sk	770	9.45	20%	Class H (15:61:11) Poz (Fly Ash):Class H Cement:CSE-2 + 4% bwow Sodium Chloride + 3 lbs/sack LCM-1 + 0.6% bwoc FL-25 + 0.005 gps FP-6L + 0.005% bwoc Static Free

Circulate cement to surface. If cement does not circulate to surface a top squeeze job or casing perforation will be used.

This will be discussed with the BLM prior to commencing remedial cement job. As well, a temperature survey or CBL will be performed. This will be discussed with the BLM prior to either being run.

Cement volumes will be adjusted accordingly once actual casing depth is determined and washout from a fluid caliper.

Article VI. Product Descriptions:

Bentonite II
P105

CSE-2

An additive which contributes to low density, high compressive strength development of cement slurries at all temperature ranges. This material also controls free water without the need for standard extenders.

Calcium Chloride

A powdered, flaked or pelletized material used to decrease thickening time and increase the rate of strength development.

Cello Flake

Graded (3/8 to 3/4 inch) cellophane flakes used as a lost circulation material.

Class C Cement

Intended for use from surface to 6000 ft., and for conditions requiring high early strength and/or sulfate resistance.

Class H Cement

Class H cement is an API type, all purpose oil well cement which is used without modification in wells up to 8,000 ft. It possesses a moderate sulfate resistance. With the use of accelerators or retarders, it can be used in a wide range of well depths and temperatures.

FL-25

An all purpose salt-tolerant fluid loss additive that provides exceptional fluid loss control across a wide range of temperatures and salinity conditions and remedial cementing applications.

FL-52

A water soluble, high molecular weight fluid loss additive used in medium to low density slurries. It is functional from low to high temperature ranges.

FP-6L

A clear liquid that decreases foaming in slurries during mixing.

LCM-1

A graded (8 to 60 mesh) naturally occurring hydrocarbon, asphaltite. It is used as a lost circulation material at low to moderate temperatures and will act as a slurry extender. Cement compressive strength is reduced.

MPA-5

Used to enhanced compressive, tensile, flexural strength development and reduced permeability

Poz (Fly Ash)

A synthetic pozzolan, (primarily Silicon Dioxide). When blended with cement, Pozzolan can be used to create lightweight cement slurries used as either a filler slurry or a sulfate resistant completion cement.

Sodium Chloride

At low concentrations, it is used to protect against clay swelling.

Sodium Metasilicate

An extender used to produce economical, low density cement slurry.

Static Free

An anti-static additive used to prevent air entrainment due to agglomerated particles. Can be used in Cementing and Fracturing operations to aid in the flow of dry materials.

Article VII. Mud Program:

See COA

Depth	Hole	Type	MW	PV	YP	WL	pH	Sol %
0-1641	16"	Fresh Water	8.4-8.9	10-12	12-15	NC	9.5	<3.0
1641-5658	12.25"	Brine	9.8-10	1	1	NC	9.5	<1.0
5658-10400	8.5"	Cut Brine	8.4-8.6	1	1	NC	9.5	<1.0
10400-TD	8.5"	Cut Brine	8.9-9.1	4-6	4-6	18-20	9.5	<3.0

Sufficient mud will be on location to control any abnormal conditions encountered. Such as but not limited to a kick, lost circulation and hole sloughing.

Article VIII. Mud Monitoring System:

A Pason PVT system will be rigged up prior to spudding the well. A volume monitoring system that measures, calculates, and displays readings from the mud system on the rig to alert the rig crew of impending gas kicks and lost circulation issues.

Components**a) PVT Pit Bull monitor:**

Acts as the heart of the system, containing all the controls, switches, and alarms. Typically, it is mounted near the driller's console.

b) Junction box:

Provides a safe, convenient place for making the wiring connections.

c) Mud probes:

Measure the volume of drilling fluid in each individual tank.

d) Flow sensor:

Measures the relative amount of mud flowing in the return line.

Article IX. Logging, Drill stem testing and Coring:

2 man mud logging will start after surface casing has been set.

8.5" hole will have LWD (Gamma Ray) to section TD.

Article X. Bottom Hole:

Temperature is expected to be 162°F, using a 0.76°/100' gradient. The bottom hole pressure is expected to be 5192psi maximum using a pressure gradient of 0.44psi/ft. With a partially evacuated hole and a gradient of 0.22psi the maximum surface pressure would be 2596psi.

Article XI. Abnormal Conditions:

No abnormal conditions are expected. Temperature is expected to be normal. All zones are expected to be normal pressure.

Lost circulation is possible in both the 16" and 12.25" hole sections. 20ppb of LCM will be maintained in the active system at all times while drilling these sections. As well, a 50bbl pill of 50ppb LCM will be premixed in the slug pit in case lost circulation is encountered. If complete loss circulation is encountered in the Capitan Reef the Brine will be switched over to fresh water. The BLM will be notified of this and an inspector requested to witness the drilling fluid swap.

Article XII. H2S:

No H2S is expected. But there is the possibility of the presence of H2S. Attached is the H2S response plan.

Article XIII. Directional:

Directional survey plan and plot attached.

Article XIV. Drilling Recorder:

Rig up EDR & PVT prior to spud to record drilling times and other drilling parameters from surface to TD.



New Mexico Office of the State Engineer **Water Column/Average Depth to Water**

No records found.

Basin/County Search:

Basin: Lea County

County: Lea

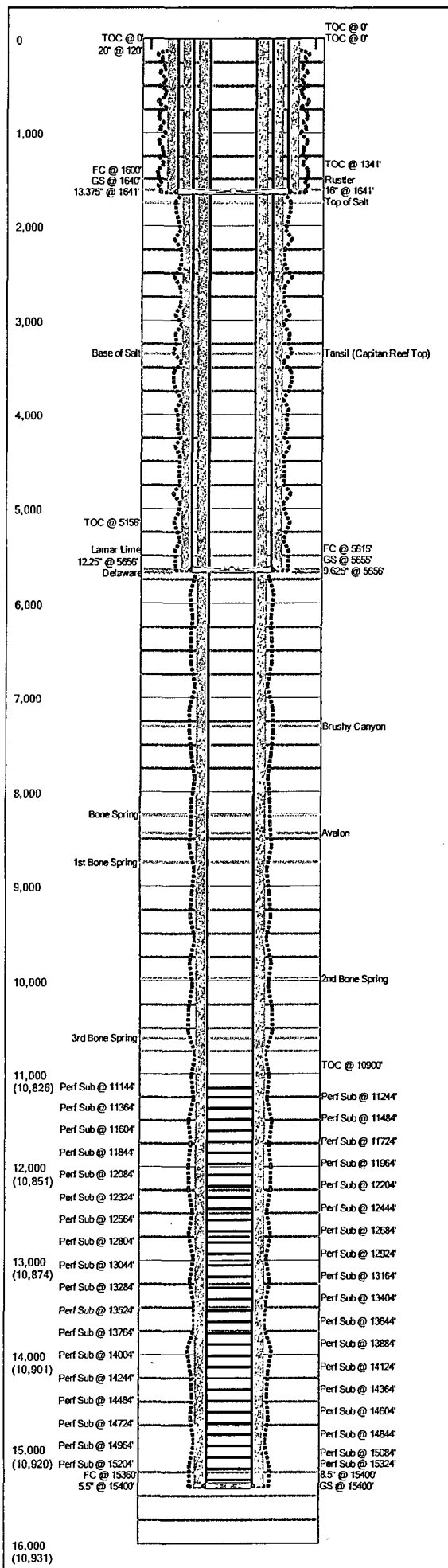
PLSS Search:

Section(s): 3

Township: 20S

Range: 34E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



Last Updated: 1/21/2014 01:45 PM

Field Name		Lease Name		Well No.
North Lea		North Lea 3 Fed		2H
County, State			API No.	
Lea, New Mexico			0111111112222	
Version	Version Tag			
1 Planning				
G.L. (ft)	K.B. (ft)	Sec.	Township/Block	Range/Survey
3,672.6	3,694.6	3	20S	34E
Operator		Well Status	Latitude	Longitude
Read and Stevens		Planning	32.608939	103.544878
Footage Call				
200' FNL & 1670' FEL From Section				
PropNum		Spud Date		Comp. Date
18917				
Additional Information				
AFE No.:				
Permit No.:				
Read and Stevens well No.:10717				
Lease No.: NM-84902●				
Bond No.: NM-2310				
Prepared By		Updated By		Last Updated
Steve Morris		Steve Morris		1/21/2014 1:45 PM

Hole Summary

Date	O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
	16.000	120	1,641	Surface
	12.250	1,641	5,656	Intermediate
	8.500	5,656	15,400	Production

Tubular Summary

Date	Description	O.D. (in)	Wt (lb/ft)	Grade	Top (MD ft)	Bottom (MD ft)
	Conductor Casing	20.000	54.50		0	120
	Surface Casing	13.375	54.50	J-55	0	1,641
	Intermediate Casing	9.625	40.00	L-80	0	5,656
	Production Casing	5.500	17.00	P-110	0	15,400

Casing Cement Summary

Date	No. Sx	Csg. O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
	598	13.375	0	1,341	120' Lead casing in conductor with no excess 126.7cuft 22.6bbbls
					1221' Lead casing in open hole with 100% excess 1027cuft 189.2bbbls
	166	13.375	1,341	1,641	300' Tail casing in open hole with 100% excess 187.9cuft 33.5bbbls
					40' Tail in shoe track with no excess 34.7cuft 6.2bbbls
	1,275	9.625	0	5,156	1641' Lead casing in casing with no excess 513.9cuft 91.5bbbls
					3515' Lead casing in open hole with 80% excess 2201.7cuft 392.1bbbls
	230	9.625	5,156	5,656	500' Tail casing in open hole with 80% excess 281.9cuft 50.2bbbls
					40' Tail shoe track with no excess 17cuft 3bbbls
	1,528	5.500	0	10,900	5656' Lead casing in casing with no excess 1474.8cuft 262.7bbbls
					5244' Lead casing in open hole with 80% excess 2162.3cuft 385.1bbbls
	770	5.500	10,900	15,400	4500' Tail casing in open hole with 20% excess 1237cuft 220.3bbbls
					80' Tail shoe track with no excess 10.4cuft 1.9bbbls

Tools/Problems Summary

Date	Tool Type	O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)
	FC	13.375	0.000	1,600	0
	GS	13.375	0.000	1,640	0

Date	Tool Type	O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)
	FC	9.625	0.000	5,615	0
	GS	9.625	0.000	5,655	0
	Perf Sub	5.500	0.000	11,144	11,160
	Perf Sub	5.500	0.000	11,244	11,260
	Perf Sub	5.500	0.000	11,364	11,380
	Perf Sub	5.500	0.000	11,484	11,500
	Perf Sub	5.500	0.000	11,604	11,620
	Perf Sub	5.500	0.000	11,724	11,740
	Perf Sub	5.500	0.000	11,844	11,860
	Perf Sub	5.500	0.000	11,964	11,980
	Perf Sub	5.500	0.000	12,084	12,100
	Perf Sub	5.500	0.000	12,204	12,220
	Perf Sub	5.500	0.000	12,324	12,340
	Perf Sub	5.500	0.000	12,444	12,460
	Perf Sub	5.500	0.000	12,564	12,580
	Perf Sub	5.500	0.000	12,684	12,700
	Perf Sub	5.500	0.000	12,804	12,820
	Perf Sub	5.500	0.000	12,924	12,940
	Perf Sub	5.500	0.000	13,044	13,060
	Perf Sub	5.500	0.000	13,164	13,180
	Perf Sub	5.500	0.000	13,284	13,300
	Perf Sub	5.500	0.000	13,404	13,420
	Perf Sub	5.500	0.000	13,524	13,540
	Perf Sub	5.500	0.000	13,644	13,660
	Perf Sub	5.500	0.000	13,764	13,780
	Perf Sub	5.500	0.000	13,884	13,900
	Perf Sub	5.500	0.000	14,004	14,020
	Perf Sub	5.500	0.000	14,124	14,140
	Perf Sub	5.500	0.000	14,244	14,260
	Perf Sub	5.500	0.000	14,364	14,380
	Perf Sub	5.500	0.000	14,484	14,500
	Perf Sub	5.500	0.000	14,604	14,620
	Perf Sub	5.500	0.000	14,724	14,740
	Perf Sub	5.500	0.000	14,844	14,860
	Perf Sub	5.500	0.000	14,964	14,980
	Perf Sub	5.500	0.000	15,084	15,100
	Perf Sub	5.500	0.000	15,204	15,220
	Perf Sub	5.500	0.000	15,324	15,340
	FC	5.500	0.000	15,360	0
	GS	5.500	0.000	15,400	0

Formation Tops Summary

Formation	Top (MD ft)	Comments
Rustler	1,616	Interbedded Anhydrite, Gypsum and Halite beds.
Top of Salt	1,746	Interbedded Halite with stringers of other evaporite minerals
Base of Salt	3,354	Base of Salt
Tansil (Capitan Reef Top)	3,354	Interbedded red and grey sandstones, shale and anhydrite, as well as some dolomite facies
Lamar Lime	5,646	Limestone
Delaware	5,680	Interbedded Carbonate and Sandstone layers
Brushy Canyon	7,304	Interbedded Carbonate and Sandstone layers
Bone Spring	8,244	Marker bed for the top of the Leonardian age rocks
Avalon	8,442	Interbedded Organic-rich Siltstones with interbedded carbonate, and quartz-rich silts. Deposition setting often described as benthic or "deep-water"
1st Bone Spring	8,748	Interbedded Argillaceous quartz-rich siltstones with interbedded organic-rich silt beds (often colloquially described as shales).
2nd Bone Spring	9,976	Interbedded Argillaceous quartz-rich siltstones with interbedded organic-rich silt beds (often colloquially described as shales).
3rd Bone Spring	10,597	Interbedded Argillaceous quartz-rich siltstones with interbedded organic-rich silt beds (often colloquially described as shales).

Last Updated: 1/21/2014 01:45 PM

Field Name	Lease Name	Well No.	County, State	API No.
North Lea	North Lea 3 Fed	2H	Lea, New Mexico	0111111112222
Version	Version Tag	Spud Date	Comp. Date	G.L. (ft) K.B. (ft)
1	Planning			3,672.6 3,694.6
Sec.	Township/Block	Range/Survey	Footage Call	
3	20S	34E	200' FNL & 1670' FEL From Section	
Operator	Well Status	Latitude	Longitude	PropNum
Read and Stevens	Planning	32.608939	103.544878	18917
Last Updated	Prepared By	Updated By		
01/21/2014 1:45 PM	Steve Morris	Steve Morris		
Additional Information				
AFE No.: Permit No.: Read and Stevens well No.:10717 Lease No.: NM-84902 Bond No.: NM-2310				

Hole Summary

Date	O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
	16.000	120	1,641	Surface
	12.250	1,641	5,656	Intermediate
	8.500	5,656	15,400	Production

Tubular Summary

Date	Description	No. Jts	O.D. (in)	Wt (lb/ft)	Grade	Top (MD ft)	Bottom (MD ft)	Comments
	Conductor Casing	3	20.000	54.50		0	120	
	Surface Casing	38	13.375	54.50	J-55	0	1,641	Burst 2730psi SF 3.54Collapse 1130psi SF 3.08Tensile514klbs SF 5.66 ID12.615" Drift12.459"
	Intermediate Casing	129	9.625	40.00	L-80	0	5,656	Burst 5750psi SF 2.03 Collapse 300psi SF 1.28Tensile 727klbs SF 3.33 ID 8.835"Drift 8.679"
	Production Casing	373	5.500	17.00	P-110	0	15,400	Burst 10640psi SF 1.29 Collapse 7480psi SF 1.55 Tensile568klbs SF 3.06 ID 4.892" Drift 4.767"

Casing Cement Summary

Date	No. Sx	Yield (cuft/sk)	Vol. (cuft)	Csg. O.D. (in)	Top (MD ft)	Bottom (MD ft)	Description	Comments
	598	1.93	1,154	13.375	0	1,341	Lead 13.5ppg 9.71gps Class C+ 4% bwoc Bentonite II + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.005% bwoc Static Free + 0.005 gpsFP-6L	120' Lead casing in conductor with no excess 126.7cuft 22.6bbbs
	166	1.35	224	13.375	1,341	1,641	Tail 14.8ppg 6.35gps Class C +1.5% bwoc Calcium Chloride +0.005 lbs/sack Static Free +0.005 gps FP-6L	300' Tail casing in open hole with 100% excess 187.9cuft 33.5bbbs 40' Tail in shoe track with no excess 34.7cuft 6.2bbbs
	1,275	2.13	2,716	9.625	0	5,156	Lead 12.6ppg 2.13gps Class C(35:65) + Poz (Fly Ash) + 4%bwoc Bentonite II + 5% bwoc MPA-5 + 0.25% bwoc FL-52 +5 lbs/sack LCM-1 + 0.125 lbs/sack Cello Flake + 0.005 lbs/sack Static Free + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5%bwow Sodium Chloride	1641' Lead casing in casing with no excess 513.9cuft 91.5bbbs 3515' Lead casing in open hole with 80% excess 2201.7cuft 392.1bbbs
	230	1.35	311	9.625	5,156	5,656	Tail 14.8ppg 6.35gps Class C	500' Tail casing in open hole with 80% excess 281.9cuft 50.2bbbs 40' Tail shoe track with no excess 17cuft 3bbbs
	1,528	2.38	3,637	5.500	0	10,900	Lead 11.9ppg 13.22gps Class H(50:50) + Poz (Fly Ash) + 10%bwoc Bentonite II + 5% bwow Sodium Chloride + 5 lbs/sack LCM-1 + 0.005 lbs/sack StaticFree + 0.005 gps FP-6L	5656 Lead casing in casing with no excess 1474.8cuft 262.7bbbs 5244' Lead casing in open hole with 80% excess 2162.3cuft 385.1bbbs
	770	1.62	1,247	5.500	10,900	15,400	Tail 13.2ppg 9.45gps Class H(15:61:11) Poz (Fly Ash):Class H Cement:CSE-2 + 4% bwow Sodium Chloride + 3 lbs/sack LCM-1 + 0.6% bwoc FL-25 +0.005 gps FP-6L + 0.005%bwoc Static Free	4500' Tail casing in open hole with 20% excess 1237cuft 220.3bbbs 80' Tail shoe track with no excess 10.4cuft 1.9bbbs

Tools/Problems Summary

Date	Tool Type	O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)	Description	Comments
	Float Collar	13.375	0.000	1,600	0		
	Guide Shoe	13.375	0.000	1,640	0		
	Float Collar	9.625	0.000	5,615	0		
	Guide Shoe	9.625	0.000	5,655	0		
	Perforated Sub	5.500	0.000	11,144	11,160	Opti-Port	Stage 36
	Perforated Sub	5.500	0.000	11,244	11,260	Opti-Port	Stage 35
	Perforated Sub	5.500	0.000	11,364	11,380	Opti-Port	Stage 34
	Perforated Sub	5.500	0.000	11,484	11,500	Opti-Port	Stage 33

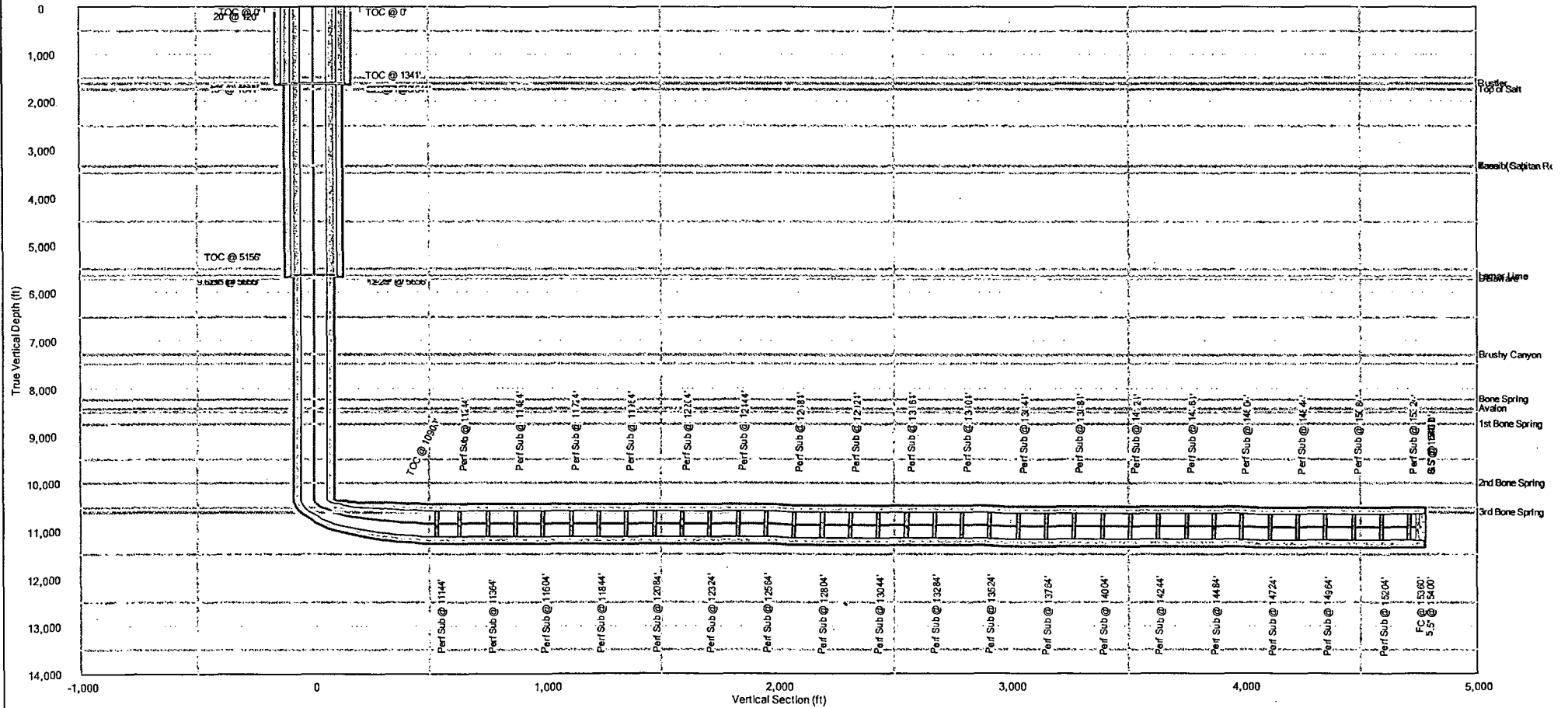
Last Updated: 1/21/2014 01:45 PM

Date	Tool Type	O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)	Description	Comments
	Perforated Sub	5.500	0.000	11,604	11,620	Opti-Port	Stage 32
	Perforated Sub	5.500	0.000	11,724	11,740	Opti-Port	Stage 31
	Perforated Sub	5.500	0.000	11,844	11,860	Opti-Port	Stage 30
	Perforated Sub	5.500	0.000	11,964	11,980	Opti-Port	Stage 29
	Perforated Sub	5.500	0.000	12,084	12,100	Opti-Port	Stage 28
	Perforated Sub	5.500	0.000	12,204	12,220	Opti-Port	Stage 27
	Perforated Sub	5.500	0.000	12,324	12,340	Opti-Port	Stage 26
	Perforated Sub	5.500	0.000	12,444	12,460	Opti-Port	Stage 25
	Perforated Sub	5.500	0.000	12,564	12,580	Opti-Port	Stage 24
	Perforated Sub	5.500	0.000	12,684	12,700	Opti-Port	Stage 23
	Perforated Sub	5.500	0.000	12,804	12,820	Opti-Port	Stage 22
	Perforated Sub	5.500	0.000	12,924	12,940	Opti-Port	Stage 21
	Perforated Sub	5.500	0.000	13,044	13,060	Opti-Port	Stage 20
	Perforated Sub	5.500	0.000	13,164	13,180	Opti-Port	Stage 19
	Perforated Sub	5.500	0.000	13,284	13,300	Opti-Port	Stage 18
	Perforated Sub	5.500	0.000	13,404	13,420	Opti-Port	Stage 17
	Perforated Sub	5.500	0.000	13,524	13,540	Opti-Port	Stage 16
	Perforated Sub	5.500	0.000	13,644	13,660	Opti-Port	Stage 15
	Perforated Sub	5.500	0.000	13,764	13,780	Opti-Port	Stage 14
	Perforated Sub	5.500	0.000	13,884	13,900	Opti-Port	Stage 13
	Perforated Sub	5.500	0.000	14,004	14,020	Opti-Port	Stage 12
	Perforated Sub	5.500	0.000	14,124	14,140	Opti-Port	Stage 11
	Perforated Sub	5.500	0.000	14,244	14,260	Opti-Port	Stage 10
	Perforated Sub	5.500	0.000	14,364	14,380	Opti-Port	Stage 9
	Perforated Sub	5.500	0.000	14,484	14,500	Opti-Port	Stage 8
	Perforated Sub	5.500	0.000	14,604	14,620	Opti-Port	Stage 7
	Perforated Sub	5.500	0.000	14,724	14,740	Opti-Port	Stage 6
	Perforated Sub	5.500	0.000	14,844	14,860	Opti-Port	Stage 5
	Perforated Sub	5.500	0.000	14,964	14,980	Opti-Port	Stage 4
	Perforated Sub	5.500	0.000	15,084	15,100	Opti-Port	Stage 3
	Perforated Sub	5.500	0.000	15,204	15,220	Opti-Port	Stage 2
	Perforated Sub	5.500	0.000	15,324	15,340	Opti-Port	Stage 1
	Float Collar	5.500	0.000	15,360	0		
	Guide Shoe	5.500	0.000	15,400	0		

Formation Top Summary

Formation Name	Top (MD ft)	Comments
Rustler	1,616	Interbedded Anhydrite, Gypsum and Halite beds.
Top of Salt	1,746	Interbedded Halite with stringers of other evaporite minerals
Base of Salt	3,354	Base of Salt
Tansil (Capitan Reef Top)	3,354	Interbedded red and grey sandstones, shale and anhydrite, as well as some dolomite facies
Lamar Lime	5,646	Limestone
Delaware	5,680	Interbedded Carbonate and Sandstone layers
Brushy Canyon	7,304	Interbedded Carbonate and Sandstone layers
Bone Spring	8,244	Marker bed for the top of the Leonardian age rocks
Avalon	8,442	Interbedded Organic-rich Siltstones with interbedded carbonate, and quartz-rich silts, Deposition setting often described as benthic or "deep-water"
1st Bone Spring	8,748	Interbedded Argillaceous quartz-rich siltstones with interbedded organic-rich silt beds (often colloquially described as shales).
2nd Bone Spring	9,976	Interbedded Argillaceous quartz-rich siltstones with interbedded organic-rich silt beds (often colloquially described as shales).
3rd Bone Spring	10,597	Interbedded Argillaceous quartz-rich siltstones with interbedded organic-rich silt beds (often colloquially described as shales).

Field Name		Lease Name		Well No.	County, State		API No.		Version	Version Tag		Spud Date	Comp. Date	G.L. (ft)	K.B. (ft)	
North Lea		North Lea 3 Fed		2H	Lea, New Mexico		0111111112222		1	Planning				3,672.6	3,694.6	
Sec.	Township/Block		Range/Survey		Footage Call		Latitude		Longitude		Well Status		PropNum		Operator	
3	20S		34E		200' FNL & 1670' FEL From Section		32.608939		103.544878		Planning		18917		Read and Stevens	
Last Updated		Prepared By		Updated By		Additional Information										
1/21/14 1:45:59 PM		Steve Morris		Steve Morris		AFE No.:										





Read and Stevens Inc.

North Lea Prospect T20S-R34E

Section 3

North Lea Federal Com 3 #2H

North Lea Federal Com 3 #2H

Plan: 131003 North Lea 3 Fed Com 2H

MOJO Standard Survey

03 October, 2013



MOJO
DIRECTIONAL CORPORATION



MOJO Standard Survey



Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #2H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL @ 3694.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL @ 3694.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #2H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #2H	Survey/Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 2H	Database:	EDM 5000.1 Single User Db

Project:	North Lea Prospect T20S-R34E		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site:	Section 3				
Site Position:		Northing:	586,163.01 usft	Latitude:	32° 36' 32.180 N
From:	Lat/Long	Easting:	784,123.26 usft	Longitude:	103° 32' 41.562 W
Position Uncertainty:	1.0 usft	Slot Radius:	16 "	Grid Convergence:	0.42 °

Well:	North Lea Federal Com 3 #2H					
Well Position	+N/-S	0.0 usft	Northing:	586,163.01 usft	Latitude:	32° 36' 32.180 N
	+E/-W	0.0 usft	Easting:	784,123.26 usft	Longitude:	103° 32' 41.562 W
Position Uncertainty	1.0 usft		Wellhead Elevation:	usft	Ground Level:	3,672.6 usft

Wellbore:	North Lea Federal Com 3 #2H				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	28/12/2012	7.41	60.51	48,695

Design:	131003 North Lea 3 Fed Com 2H				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	179.70	

Survey Tool Program	Date	03/10/2013		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
0.0	15,400.2	131003 North Lea 3 Fed Com 2H (North L	MWD	MWD - Standard



MOJO Standard Survey



Company: Read and Stevens Inc.
Project: North Lea Prospect T20S-R34E
Site: Section 3
Well: North Lea Federal Com 3 #2H
Wellbore: North Lea Federal Com 3 #2H
Design: 131003 North Lea 3 Fed Com 2H

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well North Lea Federal Com 3 #2H
WELL @ 3694.6usft (Original Well Elev)
WELL @ 3694.6usft (Original Well Elev)
Grid
Minimum Curvature
EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.0	0.00	0.00	0.0	-3,694.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
100.0	0.00	0.00	100.0	-3,594.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
200.0	0.00	0.00	200.0	-3,494.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
300.0	0.00	0.00	300.0	-3,394.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
400.0	0.00	0.00	400.0	-3,294.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
500.0	0.00	0.00	500.0	-3,194.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
600.0	0.00	0.00	600.0	-3,094.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
700.0	0.00	0.00	700.0	-2,994.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
800.0	0.00	0.00	800.0	-2,894.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
900.0	0.00	0.00	900.0	-2,794.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
1,000.0	0.00	0.00	1,000.0	-2,694.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
1,100.0	0.00	0.00	1,100.0	-2,594.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
1,200.0	0.00	0.00	1,200.0	-2,494.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
1,300.0	0.00	0.00	1,300.0	-2,394.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
1,400.0	0.00	0.00	1,400.0	-2,294.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
1,500.0	0.00	0.00	1,500.0	-2,194.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
1,600.0	0.00	0.00	1,600.0	-2,094.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
1,615.6	0.00	0.00	1,615.6	-2,079.0	0.0	0.0	0.0	0.00	586,163.01	784,123.26
Rustler										
1,640.6	0.00	0.00	1,640.6	-2,054.0	0.0	0.0	0.0	0.00	586,163.01	784,123.26
13 3/8"										
1,700.0	0.00	0.00	1,700.0	-1,994.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
1,745.6	0.00	0.00	1,745.6	-1,949.0	0.0	0.0	0.0	0.00	586,163.01	784,123.26
Top of Salt										
1,800.0	0.00	0.00	1,800.0	-1,894.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
1,900.0	0.00	0.00	1,900.0	-1,794.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
2,000.0	0.00	0.00	2,000.0	-1,694.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26
2,100.0	0.00	0.00	2,100.0	-1,594.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26



MOJO Standard Survey



Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #2H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL @ 3694.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL @ 3694.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #2H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #2H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 2H	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
2,200.0	0.00	0.00	2,200.0	-1,494.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
2,300.0	0.00	0.00	2,300.0	-1,394.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
2,400.0	0.00	0.00	2,400.0	-1,294.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
2,500.0	0.00	0.00	2,500.0	-1,194.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
2,600.0	0.00	0.00	2,600.0	-1,094.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
2,700.0	0.00	0.00	2,700.0	-994.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
2,800.0	0.00	0.00	2,800.0	-894.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
2,900.0	0.00	0.00	2,900.0	-794.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
3,000.0	0.00	0.00	3,000.0	-694.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
3,100.0	0.00	0.00	3,100.0	-594.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
3,200.0	0.00	0.00	3,200.0	-494.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
3,300.0	0.00	0.00	3,300.0	-394.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
3,353.6	0.00	0.00	3,353.6	-341.0	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
Capitan Reef/Base of Salt											
3,400.0	0.00	0.00	3,400.0	-294.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
3,500.0	0.00	0.00	3,500.0	-194.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
3,600.0	0.00	0.00	3,600.0	-94.6	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
3,700.0	0.00	0.00	3,700.0	5.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
3,800.0	0.00	0.00	3,800.0	105.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
3,900.0	0.00	0.00	3,900.0	205.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
4,000.0	0.00	0.00	4,000.0	305.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
4,100.0	0.00	0.00	4,100.0	405.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
4,200.0	0.00	0.00	4,200.0	505.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
4,300.0	0.00	0.00	4,300.0	605.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
4,400.0	0.00	0.00	4,400.0	705.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
4,500.0	0.00	0.00	4,500.0	805.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
4,600.0	0.00	0.00	4,600.0	905.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	



MOJO Standard Survey



Company: Read and Stevens Inc.
Project: North Lea Prospect T20S-R34E
Site: Section 3
Well: North Lea Federal Com 3 #2H
Wellbore: North Lea Federal Com 3 #2H
Design: 131003 North Lea 3 Fed Com 2H

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well North Lea Federal Com 3 #2H
WELL @ 3694.6usft (Original Well Elev)
WELL @ 3694.6usft (Original Well Elev)
Grid
Minimum Curvature
EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg. (°/100usft)	Northing (usft)	Easting (usft)
4,700.0	0.00	0.00	4,700.0	1,005.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
4,800.0	0.00	0.00	4,800.0	1,105.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
4,900.0	0.00	0.00	4,900.0	1,205.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
5,000.0	0.00	0.00	5,000.0	1,305.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
5,100.0	0.00	0.00	5,100.0	1,405.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
5,200.0	0.00	0.00	5,200.0	1,505.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
5,300.0	0.00	0.00	5,300.0	1,605.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
5,400.0	0.00	0.00	5,400.0	1,705.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
5,500.0	0.00	0.00	5,500.0	1,805.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
5,600.0	0.00	0.00	5,600.0	1,905.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
5,645.6	0.00	0.00	5,645.6	1,951.0	0.0	0.0	0.0	0.00	586,163.01	784,123.26
Lamar Lime 5,655.6	0.00	0.00	5,655.6	1,961.0	0.0	0.0	0.0	0.00	586,163.01	784,123.26
9 5/8" 5,679.6	0.00	0.00	5,679.6	1,985.0	0.0	0.0	0.0	0.00	586,163.01	784,123.26
Delaware/Bell Canyon 5,700.0	0.00	0.00	5,700.0	2,005.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
5,800.0	0.00	0.00	5,800.0	2,105.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
5,900.0	0.00	0.00	5,900.0	2,205.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
6,000.0	0.00	0.00	6,000.0	2,305.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
6,100.0	0.00	0.00	6,100.0	2,405.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
6,200.0	0.00	0.00	6,200.0	2,505.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
6,300.0	0.00	0.00	6,300.0	2,605.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
6,400.0	0.00	0.00	6,400.0	2,705.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
6,500.0	0.00	0.00	6,500.0	2,805.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
6,583.6	0.00	0.00	6,583.6	2,889.0	0.0	0.0	0.0	0.00	586,163.01	784,123.26
Cherry Canyon 6,600.0	0.00	0.00	6,600.0	2,905.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26



MOJO Standard Survey



Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #2H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL @ 3694.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL @ 3694.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #2H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #2H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 2H	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (°/100usft)	Northing (usft)	Easting (usft)	
6,700.0	0.00	0.00	6,700.0	3,005.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
6,800.0	0.00	0.00	6,800.0	3,105.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
6,900.0	0.00	0.00	6,900.0	3,205.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
7,000.0	0.00	0.00	7,000.0	3,305.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
7,100.0	0.00	0.00	7,100.0	3,405.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
7,200.0	0.00	0.00	7,200.0	3,505.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
7,300.0	0.00	0.00	7,300.0	3,605.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
7,303.6	0.00	0.00	7,303.6	3,609.0	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
Brushy Canyon											
7,400.0	0.00	0.00	7,400.0	3,705.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
7,500.0	0.00	0.00	7,500.0	3,805.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
7,600.0	0.00	0.00	7,600.0	3,905.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
7,700.0	0.00	0.00	7,700.0	4,005.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
7,800.0	0.00	0.00	7,800.0	4,105.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
7,900.0	0.00	0.00	7,900.0	4,205.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
8,000.0	0.00	0.00	8,000.0	4,305.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
8,100.0	0.00	0.00	8,100.0	4,405.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
8,200.0	0.00	0.00	8,200.0	4,505.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
8,243.6	0.00	0.00	8,243.6	4,549.0	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
Bone Spring											
8,300.0	0.00	0.00	8,300.0	4,605.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
8,400.0	0.00	0.00	8,400.0	4,705.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
8,500.0	0.00	0.00	8,500.0	4,805.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
8,600.0	0.00	0.00	8,600.0	4,905.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
8,700.0	0.00	0.00	8,700.0	5,005.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
8,747.6	0.00	0.00	8,747.6	5,053.0	0.0	0.0	0.0	0.00	586,163.01	784,123.26	
Avalon Shale											
8,800.0	0.00	0.00	8,800.0	5,105.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26	



MOJO Standard Survey



Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #2H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL @ 3694.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL @ 3694.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #2H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #2H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 2H	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)		TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (°/100usft)	Northing (usft)	Easting (usft)
8,900.0	0.00	0.00	0.00	8,900.0	5,205.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
9,000.0	0.00	0.00	0.00	9,000.0	5,305.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
9,100.0	0.00	0.00	0.00	9,100.0	5,405.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
9,200.0	0.00	0.00	0.00	9,200.0	5,505.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
9,300.0	0.00	0.00	0.00	9,300.0	5,605.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
9,400.0	0.00	0.00	0.00	9,400.0	5,705.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
9,441.6	0.00	0.00	0.00	9,441.6	5,747.0	0.0	0.0	0.0	0.00	586,163.01	784,123.26
1st Bone Spring											
9,500.0	0.00	0.00	0.00	9,500.0	5,805.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
9,600.0	0.00	0.00	0.00	9,600.0	5,905.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
9,700.0	0.00	0.00	0.00	9,700.0	6,005.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
9,800.0	0.00	0.00	0.00	9,800.0	6,105.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
9,900.0	0.00	0.00	0.00	9,900.0	6,205.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
9,975.6	0.00	0.00	0.00	9,975.6	6,281.0	0.0	0.0	0.0	0.00	586,163.01	784,123.26
2nd Bone Spring											
10,000.0	0.00	0.00	0.00	10,000.0	6,305.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
10,100.0	0.00	0.00	0.00	10,100.0	6,405.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
10,200.0	0.00	0.00	0.00	10,200.0	6,505.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
10,300.0	0.00	0.00	0.00	10,300.0	6,605.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
10,324.0	0.00	0.00	0.00	10,324.0	6,629.4	0.0	0.0	0.0	0.00	586,163.01	784,123.26
10,350.0	2.86	180.00	0.00	10,350.0	6,655.4	-0.6	0.0	0.6	11.00	586,162.36	784,123.26
10,400.0	8.36	180.00	0.00	10,399.7	6,705.1	-5.5	0.0	5.5	11.00	586,157.47	784,123.26
10,450.0	13.86	180.00	0.00	10,448.8	6,754.2	-15.2	0.0	15.2	11.00	586,147.84	784,123.26
10,500.0	19.36	180.00	0.00	10,496.7	6,802.1	-29.5	0.0	29.5	11.00	586,133.56	784,123.26
10,550.0	24.86	180.00	0.00	10,543.0	6,848.4	-48.3	0.0	48.3	11.00	586,114.74	784,123.26
10,600.0	30.36	180.00	0.00	10,587.3	6,892.7	-71.4	0.0	71.4	11.00	586,091.58	784,123.26
10,610.9	31.56	180.00	0.00	10,596.6	6,902.0	-77.0	0.0	77.0	11.00	586,085.98	784,123.26
3rd Bone Spring											



MOJO Standard Survey



Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #2H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL @ 3694.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL @ 3694.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #2H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #2H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 2H	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
10,650.0	35.86	180.00	10,629.1	6,934.5	-98.7	0.0	98.7	11.00	586,064.28	784,123.26	
10,700.0	41.36	180.00	10,668.2	6,973.6	-129.9	0.0	129.9	11.00	586,033.09	784,123.26	
10,750.0	46.86	180.00	10,704.1	7,009.5	-164.7	0.0	164.7	11.00	585,998.30	784,123.26	
10,800.0	52.36	180.00	10,736.5	7,041.9	-202.8	0.0	202.8	11.00	585,960.24	784,123.26	
10,850.0	57.86	180.00	10,765.0	7,070.4	-243.8	0.0	243.8	11.00	585,919.24	784,123.26	
10,900.0	63.36	180.00	10,789.6	7,095.0	-287.3	0.0	287.3	11.00	585,875.69	784,123.26	
10,950.0	68.86	180.00	10,809.8	7,115.2	-333.0	0.0	333.0	11.00	585,830.00	784,123.26	
11,000.0	74.36	180.00	10,825.6	7,131.0	-380.4	0.0	380.4	11.00	585,782.57	784,123.26	
11,050.0	79.86	180.00	10,836.7	7,142.1	-429.2	0.0	429.2	11.00	585,733.85	784,123.26	
11,100.0	85.36	180.00	10,843.2	7,148.6	-478.7	0.0	478.7	11.00	585,684.28	784,123.26	
11,142.2	90.00	180.00	10,844.9	7,150.3	-520.9	0.0	520.9	11.00	585,642.15	784,123.26	
11,200.0	89.94	179.98	10,844.9	7,150.3	-578.7	0.0	578.7	0.10	585,584.33	784,123.27	
11,300.0	89.84	179.96	10,845.1	7,150.5	-678.7	0.1	678.7	0.10	585,484.34	784,123.32	
11,400.0	89.74	179.93	10,845.5	7,150.9	-778.7	0.2	778.7	0.10	585,384.34	784,123.42	
11,500.0	89.64	179.90	10,846.0	7,151.4	-878.7	0.3	878.7	0.10	585,284.34	784,123.56	
11,600.0	89.54	179.88	10,846.7	7,152.1	-978.7	0.5	978.7	0.10	585,184.35	784,123.75	
11,700.0	89.44	179.85	10,847.6	7,153.0	-1,078.7	0.7	1,078.7	0.10	585,084.35	784,123.99	
11,800.0	89.34	179.82	10,848.7	7,154.1	-1,178.7	1.0	1,178.7	0.10	584,984.36	784,124.28	
11,900.0	89.24	179.80	10,849.9	7,155.3	-1,278.7	1.3	1,278.7	0.10	584,884.37	784,124.61	
12,000.0	89.14	179.77	10,851.3	7,156.7	-1,378.7	1.7	1,378.6	0.10	584,784.39	784,124.99	
12,100.0	89.03	179.74	10,852.9	7,158.3	-1,478.6	2.2	1,478.6	0.10	584,684.40	784,125.41	
12,200.0	88.93	179.72	10,854.7	7,160.1	-1,578.6	2.6	1,578.6	0.10	584,584.42	784,125.89	
12,300.0	88.83	179.69	10,856.7	7,162.1	-1,678.6	3.1	1,678.6	0.10	584,484.44	784,126.41	
12,400.0	88.73	179.66	10,858.8	7,164.2	-1,778.6	3.7	1,778.6	0.10	584,384.47	784,126.97	
12,500.0	88.63	179.63	10,861.1	7,166.5	-1,878.6	4.3	1,878.5	0.10	584,284.50	784,127.59	
12,600.0	88.53	179.61	10,863.6	7,169.0	-1,978.5	5.0	1,978.5	0.10	584,184.54	784,128.25	
12,682.1	88.45	179.59	10,865.7	7,171.1	-2,060.6	5.6	2,060.6	0.10	584,102.48	784,128.83	



MOJO Standard Survey



Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #2H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL @ 3694.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL @ 3694.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #2H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #2H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 2H	Database:	EDM 5000.1 Single User Db

Planned Survey												
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)		
12,700.0	88.45	179.59	10,866.2	7,171.6	-2,078.5	5.7	2,078.5	0.00	584,084.58	784,128.96		
12,800.0	88.45	179.59	10,868.9	7,174.3	-2,178.4	6.4	2,178.4	0.00	583,984.62	784,129.68		
12,900.0	88.45	179.59	10,871.6	7,177.0	-2,278.4	7.1	2,278.4	0.00	583,884.66	784,130.40		
13,000.0	88.45	179.59	10,874.3	7,179.7	-2,378.4	7.9	2,378.4	0.00	583,784.70	784,131.13		
13,100.0	88.45	179.59	10,877.0	7,182.4	-2,478.3	8.6	2,478.3	0.00	583,684.74	784,131.85		
13,200.0	88.45	179.59	10,879.8	7,185.2	-2,578.3	9.3	2,578.3	0.00	583,584.78	784,132.57		
13,300.0	88.45	179.59	10,882.5	7,187.9	-2,678.2	10.0	2,678.3	0.00	583,484.83	784,133.30		
13,400.0	88.45	179.59	10,885.2	7,190.6	-2,778.2	10.8	2,778.2	0.00	583,384.87	784,134.02		
13,500.0	88.45	179.59	10,887.9	7,193.3	-2,878.2	11.5	2,878.2	0.00	583,284.91	784,134.74		
13,600.0	88.45	179.59	10,890.6	7,196.0	-2,978.1	12.2	2,978.1	0.00	583,184.95	784,135.47		
13,696.9	88.45	179.59	10,893.2	7,198.6	-3,075.0	12.9	3,075.0	0.00	583,088.09	784,136.17		
13,700.0	88.45	179.59	10,893.3	7,198.7	-3,078.1	12.9	3,078.1	0.06	583,084.99	784,136.19		
13,800.0	88.51	179.59	10,895.9	7,201.3	-3,178.0	13.7	3,178.1	0.06	582,985.03	784,136.91		
13,900.0	88.57	179.59	10,898.5	7,203.9	-3,278.0	14.4	3,278.0	0.06	582,885.07	784,137.64		
14,000.0	88.62	179.59	10,901.0	7,206.4	-3,378.0	15.1	3,378.0	0.06	582,785.11	784,138.36		
14,100.0	88.68	179.59	10,903.3	7,208.7	-3,478.0	15.8	3,478.0	0.06	582,685.14	784,139.08		
14,200.0	88.74	179.59	10,905.5	7,210.9	-3,577.9	16.5	3,578.0	0.06	582,585.17	784,139.80		
14,300.0	88.80	179.59	10,907.7	7,213.1	-3,677.9	17.3	3,677.9	0.06	582,485.20	784,140.52		
14,400.0	88.86	179.59	10,909.7	7,215.1	-3,777.9	18.0	3,777.9	0.06	582,385.22	784,141.24		
14,500.0	88.92	179.59	10,911.7	7,217.1	-3,877.9	18.7	3,877.9	0.06	582,285.25	784,141.96		
14,600.0	88.97	179.59	10,913.5	7,218.9	-3,977.8	19.4	3,977.9	0.06	582,185.27	784,142.68		
14,700.0	89.03	179.59	10,915.3	7,220.7	-4,077.8	20.1	4,077.9	0.06	582,085.29	784,143.40		
14,800.0	89.09	179.59	10,916.9	7,222.3	-4,177.8	20.9	4,177.9	0.06	581,985.31	784,144.12		
14,900.0	89.15	179.59	10,918.4	7,223.8	-4,277.8	21.6	4,277.8	0.06	581,885.32	784,144.84		
15,000.0	89.21	179.59	10,919.9	7,225.3	-4,377.8	22.3	4,377.8	0.06	581,785.34	784,145.55		
15,100.0	89.27	179.59	10,921.2	7,226.6	-4,477.8	23.0	4,477.8	0.06	581,685.35	784,146.27		
15,200.0	89.32	179.59	10,922.4	7,227.8	-4,577.8	23.7	4,577.8	0.06	581,585.36	784,146.99		



MOJO Standard Survey



Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #2H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL @ 3694.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL @ 3694.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #2H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #2H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 2H	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (°/100usft)	Northing (usft)	Easting (usft)	
15,300.0	89.38	179.59	10,923.6	7,229.0	-4,677.7	24.4	4,677.8	0.06	581,485.38	784,147.70	
15,400.2	89.44	179.59	10,924.6	7,230.0	-4,777.9	25.2	4,778.0	0.06	581,385.20	784,148.42	

Casing Points											
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")						
1,640.6	1,640.6	13 3/8"		13-3/8	17-1/2						
15,400.2	10,924.6	5 1/2"		5-1/2	8-1/2						
5,655.6	5,655.6	9 5/8"		9-5/8	12-1/4						

Formations											
Measured Depth (usft)	Vertical Depth (usft)	Name		Lithology	Dip (°)	Dip Direction (°)					
7,303.6	7,303.6	Brushy Canyon			0.00						
9,975.6	9,975.6	2nd Bone Spring			0.00						
8,243.6	8,243.6	Bone Spring			0.00						
5,679.6	5,679.6	Delaware/Bell Canyon			0.00						
6,583.6	6,583.6	Cherry Canyon			0.00						
1,745.6	1,745.6	Top of Salt			0.00						
8,747.6	8,747.6	Avalon Shale			0.00						
1,615.6	1,615.6	Rustler			0.00						
9,441.6	9,441.6	1st Bone Spring			0.00						
3,353.6	3,353.6	Capitan Reef/Base of Salt			0.00						
5,645.6	5,645.6	Lamar Lime			0.00						
10,610.9	10,596.6	3rd Bone Spring			0.00						

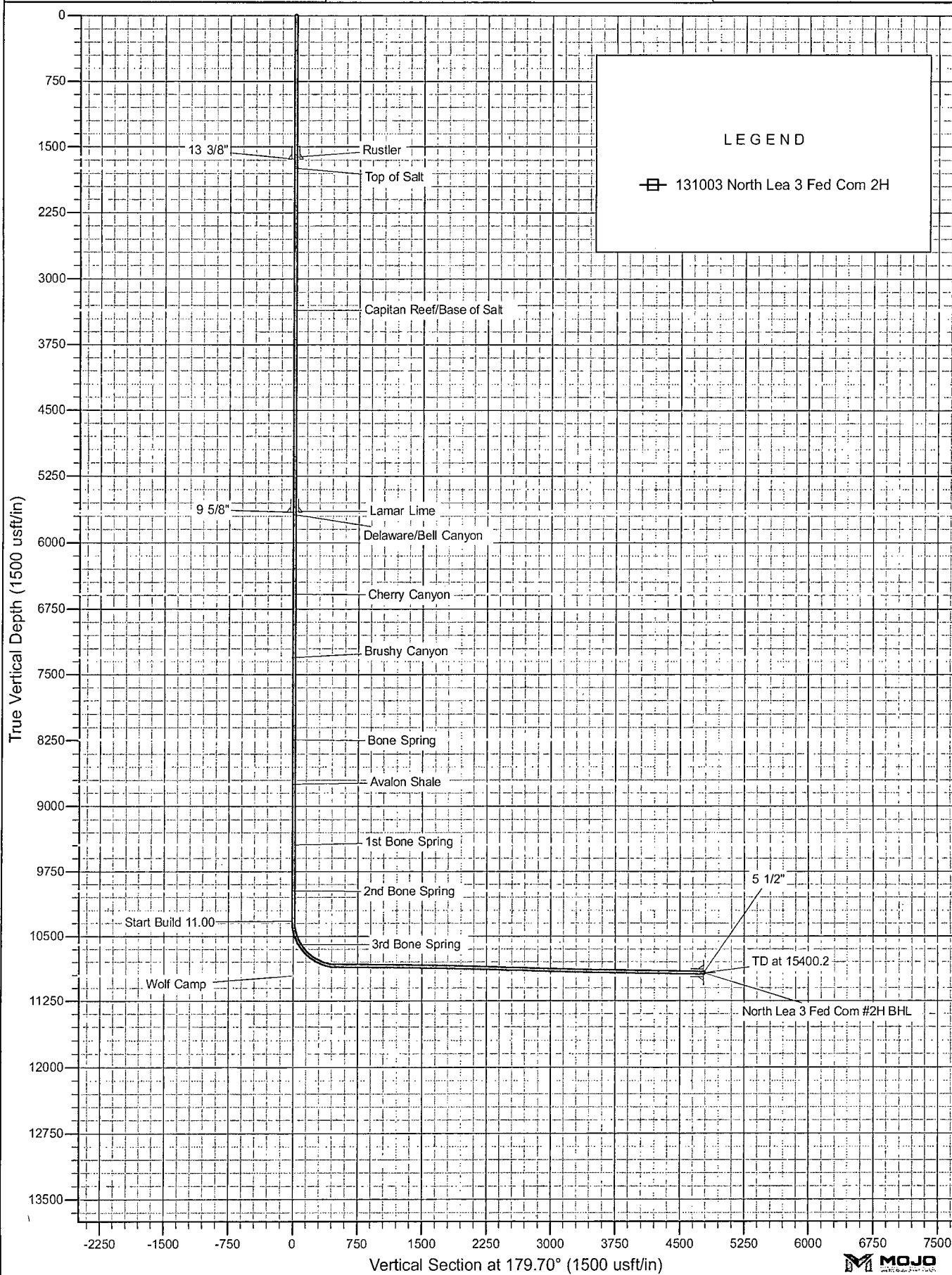
Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------

Project: North Lea Prospect T20S-R34E
 Site: Section 3
 Well: North Lea Federal Com 3 #2H
 Wellbore: North Lea Federal Com 3 #2H
 Design: 131003 North Lea 3 Fed Com 2H



Azimuths to Grid North
 True North: -0.42°
 Magnetic North: 6.99°

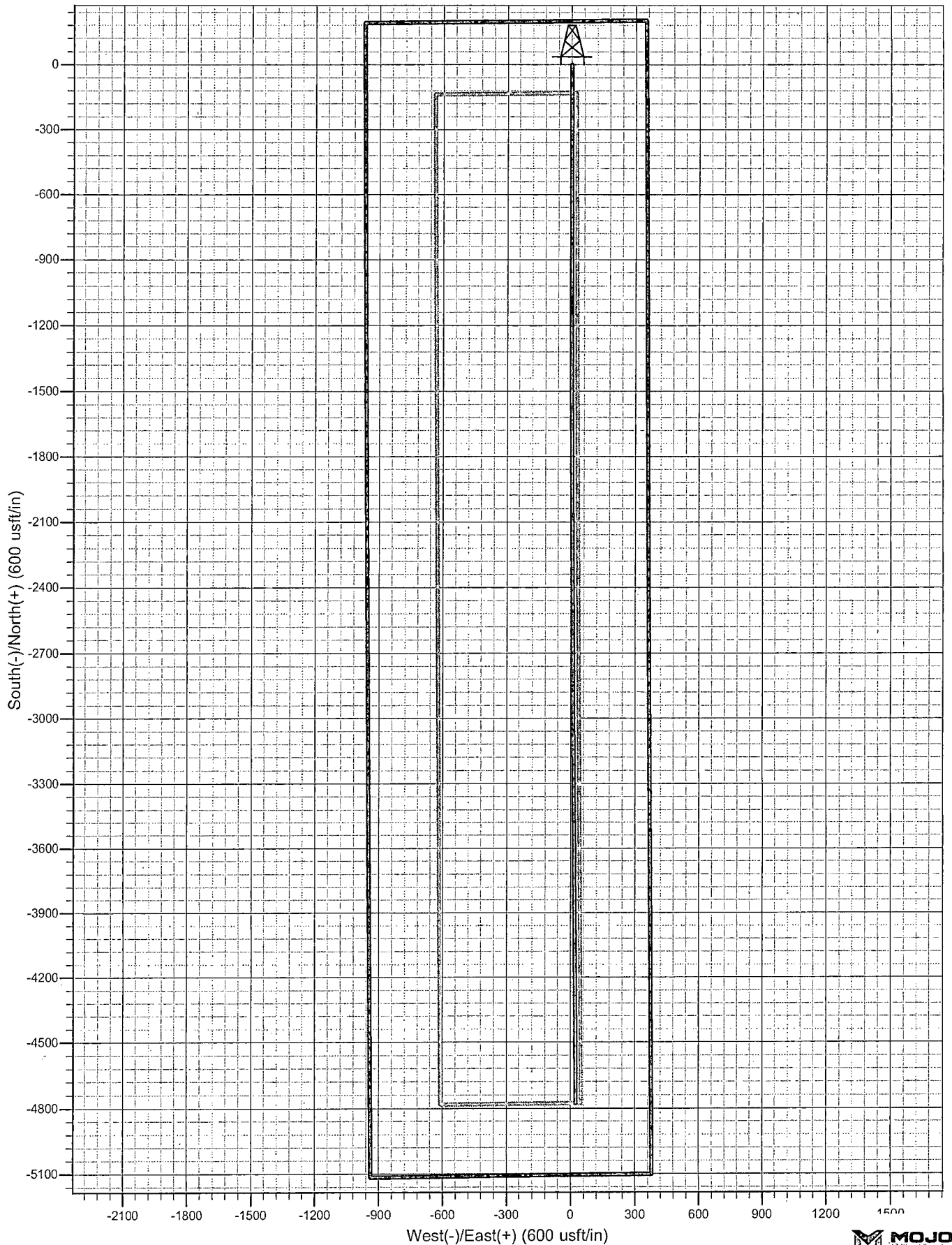
Magnetic Field
 Strength: 48695.4snT
 Dip Angle: 60.51°
 Date: 28/12/2012
 Model: IGRF2010



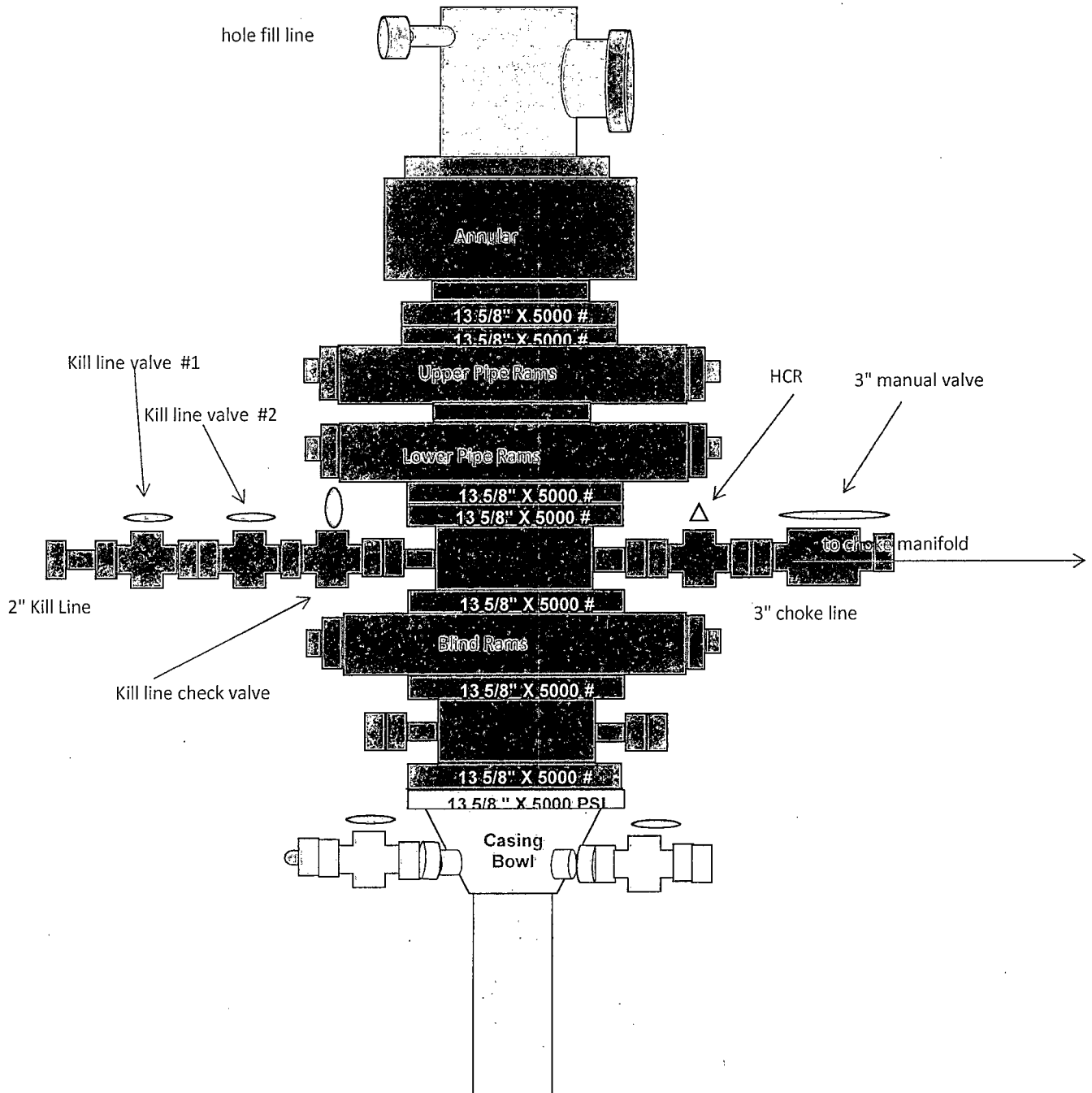
Project: North Lea Prospect T20S-R34E
Site: Section 3
Well: North Lea Federal Com 3 #2H
Wellbore: North Lea Federal Com 3 #2H
Design: 131003 North Lea 3 Fed Com 2H

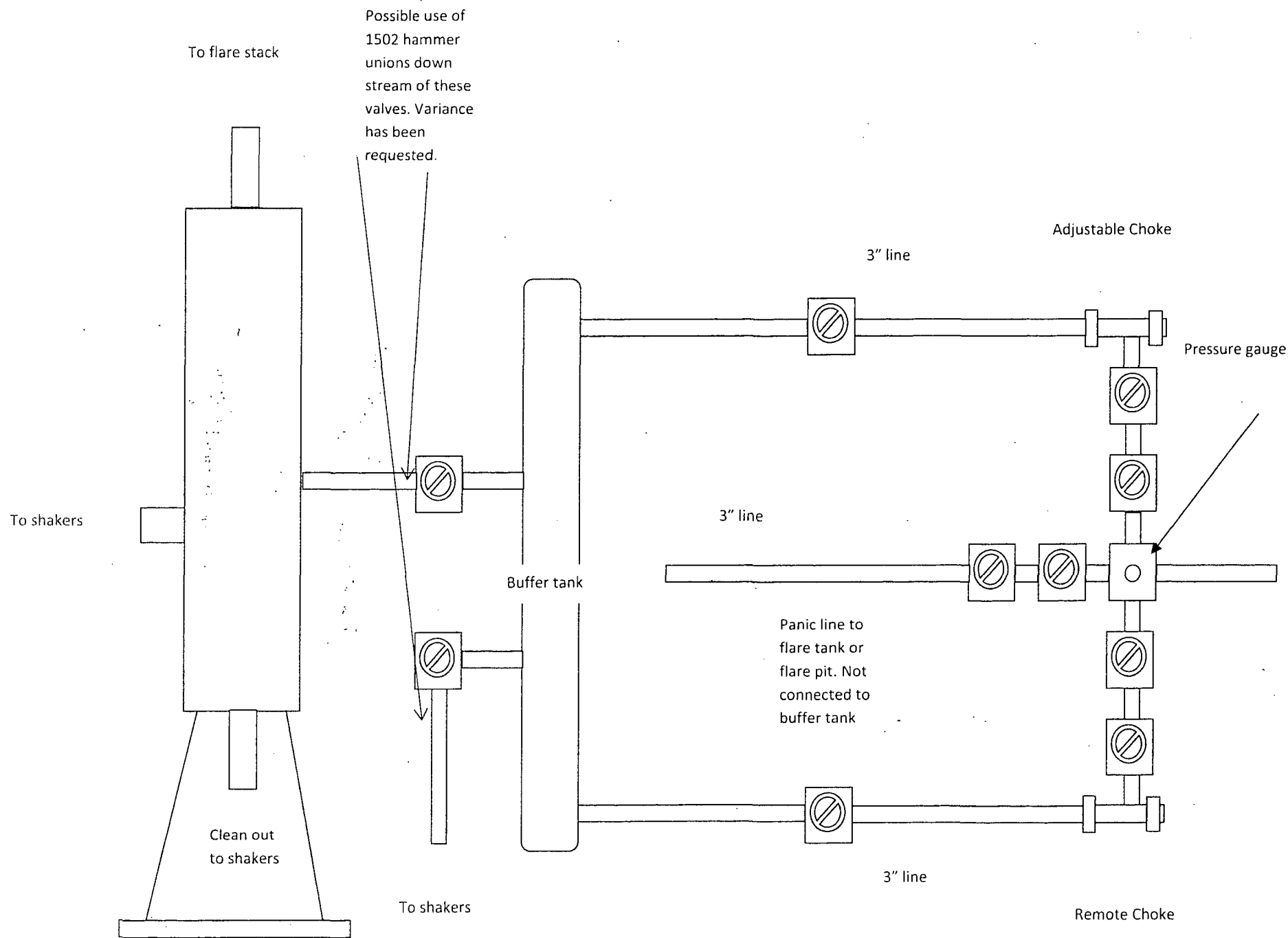


Azimuths to Grid North
True North: -0.42°
Magnetic North: 6.99°
Magnetic Field
Strength: 48695.4snT
Dip Angle: 60.51°
Date: 28/12/2012
Model: IGRF2010

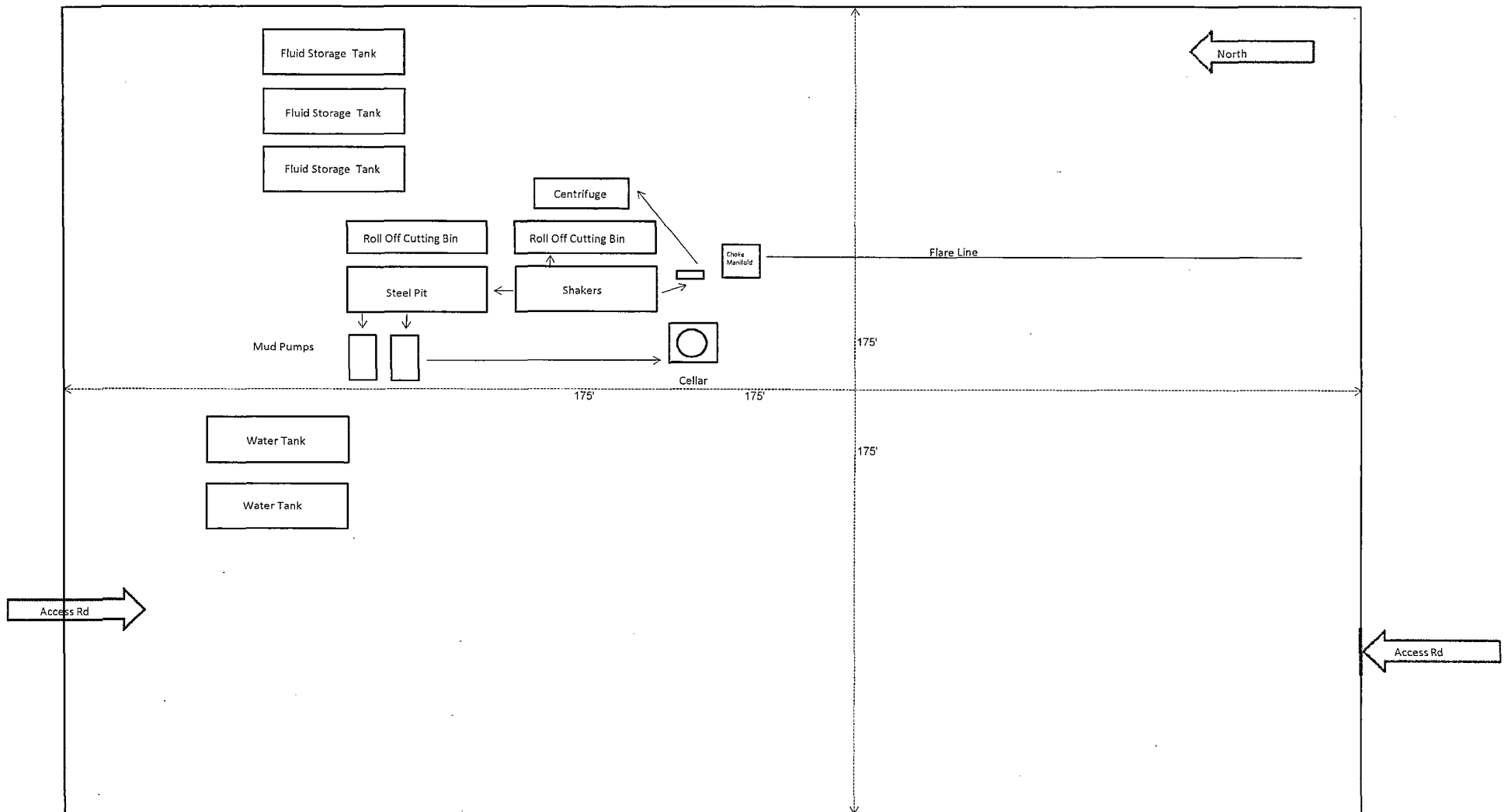


13-5/8" 5M BOP stack





Closed Loop Diagram



District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144 CLEZ
Revised August 1, 2011

For closed-loop systems that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, submit to the appropriate NMOCD District Office.

Closed-Loop System Permit or Closure Plan Application

(that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)

Type of action: ☒ Permit ☐ Closure

Instructions: Please submit one application (Form C-144 CLEZ) per individual closed-loop system request. For any application request other than for a closed-loop system that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, please submit a Form C-144.

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1. Operator: Read and Stevens, Inc OGRID #: 18917
Address: 400 N Pennsylvania ave #1000, Roswell, NM 88201
Facility or well name: North Lea 3 Fed Com #2H
API Number: _____ OCD Permit Number: _____
U/L or Qtr/Qtr B Section 3 Township 20S Range 34E County: Lea
Center of Proposed Design: Latitude _____ Longitude _____ NAD: ☐ 1927 ☐ 1983
Surface Owner: ☐ Federal ☐ State ☒ Private ☐ Tribal Trust or Indian Allotment

2. ☒ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC
Operation: ☒ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent) ☐ P&A
☐ Above Ground Steel Tanks or ☐ Haul-off Bins

3. **Signs:** Subsection C of 19.15.17.11 NMAC
☒ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers
☐ Signed in compliance with 19.15.16.8 NMAC

4. **Closed-loop Systems Permit Application Attachment Checklist:** Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.
☒ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
☒ Closure Plan (Please complete Box 5) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
☐ Previously Approved Design (attach copy of design) API Number: _____
☐ Previously Approved Operating and Maintenance Plan API Number: _____

5. **Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:** (19.15.17.13.D NMAC)
Instructions: Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.
Disposal Facility Name: Controlled Recovery, Inc Disposal Facility Permit Number: NM-01-0006
Disposal Facility Name: _____ Disposal Facility Permit Number: _____
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future service and operations?
☐ Yes (If yes, please provide the information below) ☐ No
Required for impacted areas which will not be used for future service and operations:
☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

6. **Operator Application Certification:**
I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.
Name (Print): Tim Collier Title: Sr. VP Drilling and Exploration
Signature: Tim Collier, President Date: 09/25/2013
e-mail address: tcollier@read-stevens.com Telephone: 575-622-3770 ext 316

7. **OCD Approval:** ☐ Permit Application (including closure plan) ☐ Closure Plan (only)

OCD Representative Signature: _____ Approval Date: _____

Title: _____ OCD Permit Number: _____

8.

Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☐ Closure Completion Date: _____

9.

Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:

Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Site Reclamation (Photo Documentation)

☐ Soil Backfilling and Cover Installation

☐ Re-vegetation Application Rates and Seeding Technique

10.

Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

Design Plan, Operating Plan and Maintenance Plan, and Closure Plan for the OCD form C-144

North Lea 3 Fed Com #2H

Design Plan:

Fluid and cuttings coming from drilling operations will pass over the shale shaker with the cuttings going to the haul off bin and the cleaned fluid returning to the working steel pits.

Equipment Includes:

- 1-670bbl steel working pit
- 2-100bbl steel working suction pits
- 2-500bbl steel tanks
- 2-20yd³ steel haul off bins
- 2-pumps (HHF-1600)
- 2-Shale shakers
- 1-Centrifuge
- 1-Desilter/Desander

Operating and Maintenance Plan:

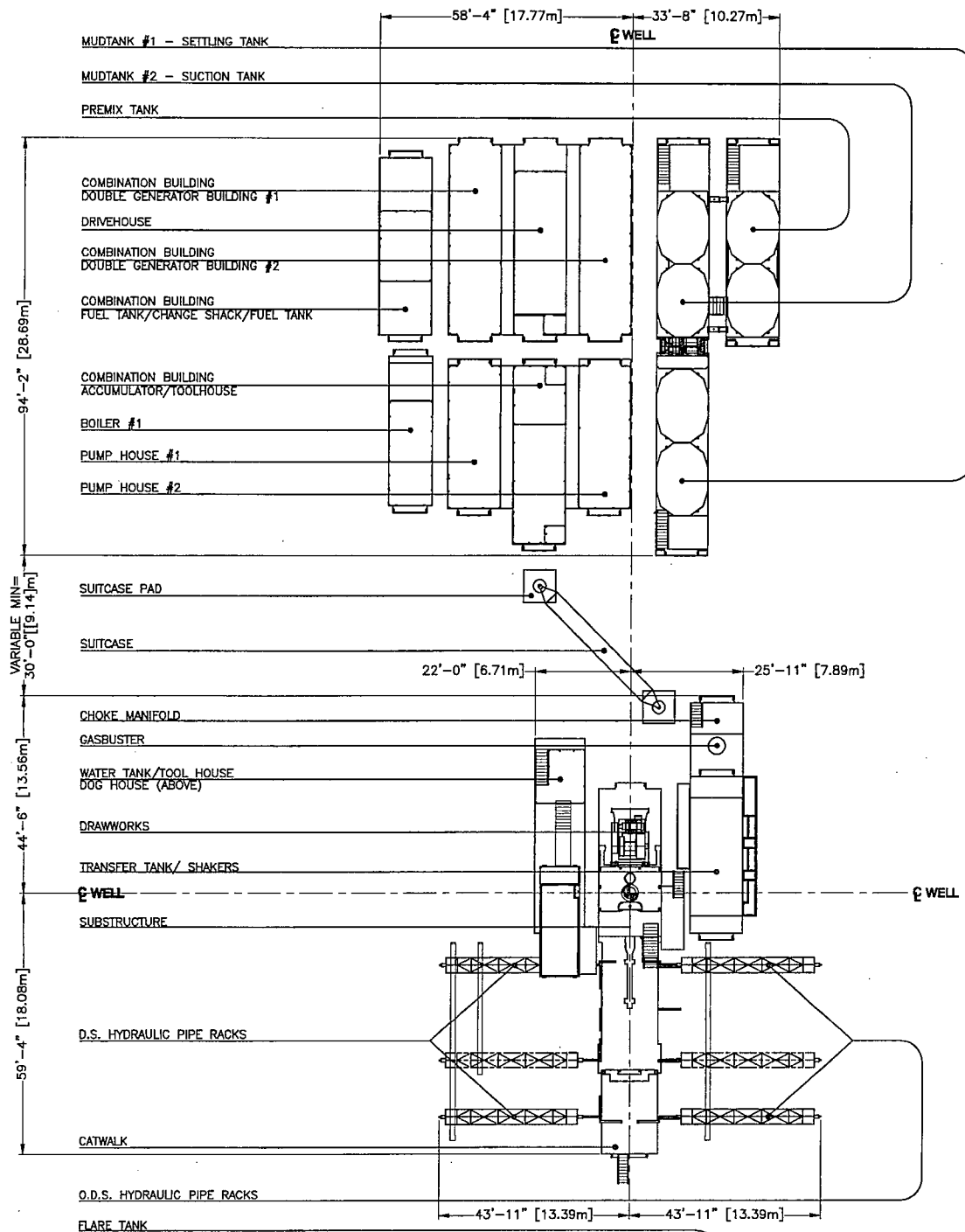
Inspection to occur every tour for proper operation of system and individual components. If any problems are found they will be repaired and/or corrected immediately.

Closure Plan:

All haul off bins containing cuttings will be removed from location and hauled to Controlled Recovery, Inc. (NM-01-0006) disposal site located near mile marker 66 on Highway 62/180.

RIG LAYOUT

RIG 827SSE



MINIMUM LOCATION SIZE

FROM HOLE CENTER

TO CROWN END	180'-6" (55m)
TO BACK OF RIG	178'-0" (54m)
TO DOG HOUSE SIDE	98'-6" (30m)
TO SUMP SIDE	65'-6" (20m)

WELL

11 O'CLOCK
164'-0" (50m)
FROM
WELL CENTER

DATE: FEBRUARY 5, 2009

DWG NO.: 851-825-12

APPROVED BY ENGINEERING

0'-0" 16'-6" 33'-0" 49'-6"
(0m) (5m) (10m) (15m)



PRECISION DRILLING

CALGARY, ALBERTA, CANADA