SECRETARY'S POTASH

ATS-14-400

Form 3160-3
(August 2007)

OCD Hobbs

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNORTHODOX LOCATION

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
SHL: NM-84902 BHL: NM-54432

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
North Lea 3 Fed Com #1H (313633)

2. Name of Operator Read and Stevens, Inc (18917)

9. API Well No.
30-025-42080 (40461)

3a. Address 400 N. Pennsylvania Ave #1000
Roswell, NM 88201

3b. Phone No. *(include area code)*
575-622-3770

10. Field and Pool, or Exploratory
QUAIL RIDGE; BS, SOUTH

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 200' FNL 350' FEL
At proposed prod. zone 330' FSL 350'FEL

HOBBS OCD
AUG 29 2014
RECEIVED

11. Sec., T. R. M. or Blk. and Survey or Area
Sec. 3 T-20S R-34E

14. Distance in miles and direction from nearest town or post office*
26 miles WSW of Hobbs

12. County or Parish
Lea

13. State
NM

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
602.45

17. Spacing Unit dedicated to this well
160.65

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
See raduis maps attached.

19. Proposed Depth
10,929TVD/ 15,385'MD

20. BLM/BIA Bond No. on file
NM-2310

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
GL - ~~3667.7~~ 3678.6 per plat' RKB - 3689.7'

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:

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

25. Signature

Name *(Printed/Typed)*
Rory McMinn

Date
01/15/2014

Title
President

Approved by *(Signature)* /s/George MacDonell

Name *(Printed/Typed)*

Date
AUG 27 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

KZ 08/29/14

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

SEP 02 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 #1H
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: _____ Dated: 23 January 2014

Rory McMinn
President

Read and Stevens, Inc.
Drilling Prognosis
North Lea 3 Fed Com #1H

Revision date: March 25, 2014

Surface Location:	586,176.36usft N, 785,442.99usft E 200' FNL, 350' FEL Section 3, T-20-S, R-34-E Lea County, New Mexico
Bottom Hole Target:	581,399.46usft N, 785,468.33usft E 330' FSL, 350' FEL Section 3, T-20-S, R-34-E Lea County, New Mexico
Planned Total Depth:	10,929' TVD /15,385' MD
RKB: 3700.6'	GL: 3678.6'
Preparer:	Steve Morris

Contents

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 (geoprognosis with TVD's adjusted to actual KB):

Formation	TVD	Subsea	Thickness	Type
Rustler	1639'	-2062		
Top of Salt	1771'	-1930		
Base of Salt	3382'	-319'		
Yates (Top of Capitan Reef)	3382'	-319'	1818'	Possible Fresh Water
Seven Rivers	3861'	160'		
Queen	4591'	890'		
Grayburg(Bottom of Capitan Reef)	5129'	1428'		
San Andres	5200'	1499'		
Lamar Lime	5455'	1754'		
Delaware	5573'	1872'		
Bone Spring Lime	8240'	4539'		
Avalon	8750'	5049'	690'	Hydrocarbon
1st Bone Spring	9440'	5739'	520'	Hydrocarbon
2nd Bone Spring	9960'	6259'	636'	Hydrocarbon
3rd Bone Spring	10572'	6871'	453'	Hydrocarbon

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

Article III. Pressure Control:

This will not be a multi-bowl

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.

See COA

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. and chokes

Article IV. Casing Program (minimum):

All casing is new API casing.

Hole Size	Casing	Weight lb/ft	Grade	Conn	MD/RKB	Stage

See COA

	20"				120'	Conductor
16"	13.375"	54.5	J-55	STC	~~1664'~~ 1750'	Surface
12.25"	9.625"	40	L-80	LTC	5465'	Intermediate
8.5"	5.5"	17	P-110	BTC	~~15459'~~ 15,395'	Production

Per directional plan

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

will keep casing fluid filled per Steve Morris 7/11/14

13.375" casing will be set 25' into the Rustler
9.625" casing will be set 10' into the Lamar Lime

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	608	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 9⅝" 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	471	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	694	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	1157	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	1540	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	768	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, fleural 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.

See COA

Article VII. Mud Program:

Depth 1750'	Hole	Type	MW	PV	YP	WL	pH	Sol %
0-1684	16"	Fresh Water	8.4-8.9	10-12	12-15	NC	9.5	<3.0
1684-5465	12.25"	Brine	9.8-10	1	1	NC	9.5	<1.0
5465-10400	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.

See COA

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

MOJO
DIRECTIONAL CORPORATION

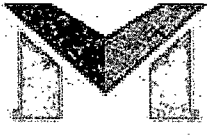
Read and Stevens Inc.

North Lea Prospect T20S-R34E
Section 3

Plan: 131003 North Lea 3 Fed Com 1H

MOJO Standard Survey

03 October, 2013



MOJO
DIRECTIONAL CORPORATION

Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #1H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #1H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #1H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 1H	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 #1H

Well Position	**+N/-S**	0.0 usft	**Northing:**	586,176.36 usft	**Latitude:**	32° 36' 32.215 N
	+E/-W	0.0 usft	**Easting:**	785,442.99 usft	**Longitude:**	103° 32' 26.133 W
Position Uncertainty		1.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,678.6 usft

Wellbore North Lea Federal Com 3 #1H

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	28/12/2012	7.41	60.51	48,696

Design 131003 North Lea 3 Fed Com 1H

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	179.70

Survey Tool Program Date 03/10/2013

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	15,385.9	131003 North Lea 3 Fed Com 1H (North L	MWD	MWD - Standard

Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #1H
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Site:	Section 3	MD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #1H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #1H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 1H	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)
0.0	0.00	0.00	0.0	-3,700.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
100.0	0.00	0.00	100.0	-3,600.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
200.0	0.00	0.00	200.0	-3,500.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
300.0	0.00	0.00	300.0	-3,400.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
400.0	0.00	0.00	400.0	-3,300.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
500.0	0.00	0.00	500.0	-3,200.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
600.0	0.00	0.00	600.0	-3,100.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
700.0	0.00	0.00	700.0	-3,000.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
800.0	0.00	0.00	800.0	-2,900.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
900.0	0.00	0.00	900.0	-2,800.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
1,000.0	0.00	0.00	1,000.0	-2,700.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
1,100.0	0.00	0.00	1,100.0	-2,600.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
1,200.0	0.00	0.00	1,200.0	-2,500.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
1,300.0	0.00	0.00	1,300.0	-2,400.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
1,400.0	0.00	0.00	1,400.0	-2,300.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
1,500.0	0.00	0.00	1,500.0	-2,200.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
1,600.0	0.00	0.00	1,600.0	-2,100.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
1,638.6	0.00	0.00	1,638.6	-2,062.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
Rustler (geoprog)										
1,664.0	0.00	0.00	1,664.0	-2,036.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
13 3/8"										
1,700.0	0.00	0.00	1,700.0	-2,000.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
1,770.6	0.00	0.00	1,770.6	-1,930.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
Top of Salt (geoprog)										
1,800.0	0.00	0.00	1,800.0	-1,900.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
1,900.0	0.00	0.00	1,900.0	-1,800.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
2,000.0	0.00	0.00	2,000.0	-1,700.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
2,100.0	0.00	0.00	2,100.0	-1,600.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99

Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #1H
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Site:	Section 3	MD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #1H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #1H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 1H	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	-1,500.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
2,300.0	0.00	0.00	2,300.0	-1,400.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
2,400.0	0.00	0.00	2,400.0	-1,300.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
2,500.0	0.00	0.00	2,500.0	-1,200.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
2,600.0	0.00	0.00	2,600.0	-1,100.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
2,700.0	0.00	0.00	2,700.0	-1,000.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
2,800.0	0.00	0.00	2,800.0	-900.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
2,900.0	0.00	0.00	2,900.0	-800.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
3,000.0	0.00	0.00	3,000.0	-700.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
3,100.0	0.00	0.00	3,100.0	-600.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
3,200.0	0.00	0.00	3,200.0	-500.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
3,300.0	0.00	0.00	3,300.0	-400.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
3,381.6	0.00	0.00	3,381.6	-319.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
Base of Salt (geoprog)										
3,400.0	0.00	0.00	3,400.0	-300.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
3,500.0	0.00	0.00	3,500.0	-200.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
3,587.6	0.00	0.00	3,587.6	-113.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
Yates(Geoprog)										
3,600.0	0.00	0.00	3,600.0	-100.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
3,700.0	0.00	0.00	3,700.0	-0.6	0.0	0.0	0.0	0.00	586,176.36	785,442.99
3,800.0	0.00	0.00	3,800.0	99.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
3,860.6	0.00	0.00	3,860.6	160.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
7 Rivers(Geoprog)										
3,900.0	0.00	0.00	3,900.0	199.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
4,000.0	0.00	0.00	4,000.0	299.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
4,100.0	0.00	0.00	4,100.0	399.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
4,200.0	0.00	0.00	4,200.0	499.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
4,300.0	0.00	0.00	4,300.0	599.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99

Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #1H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #1H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #1H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 1H	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)
4,400.0	0.00	0.00	4,400.0	699.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
4,500.0	0.00	0.00	4,500.0	799.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
4,590.6	0.00	0.00	4,590.6	890.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
Queen(Geoprog)										
4,600.0	0.00	0.00	4,600.0	899.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
4,700.0	0.00	0.00	4,700.0	999.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
4,800.0	0.00	0.00	4,800.0	1,099.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
4,900.0	0.00	0.00	4,900.0	1,199.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
4,906.6	0.00	0.00	4,906.6	1,206.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
Penrose(Geoprog)										
5,000.0	0.00	0.00	5,000.0	1,299.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
5,100.0	0.00	0.00	5,100.0	1,399.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
5,128.6	0.00	0.00	5,128.6	1,428.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
Grayburg(Geoprog)										
5,199.6	0.00	0.00	5,199.6	1,499.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
San Andres(Geoprog)										
5,200.0	0.00	0.00	5,200.0	1,499.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
5,300.0	0.00	0.00	5,300.0	1,599.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
5,400.0	0.00	0.00	5,400.0	1,699.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
5,454.6	0.00	0.00	5,454.6	1,754.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
Lamar Lime (geoprog)										
5,464.6	0.00	0.00	5,464.6	1,764.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
9 5/8"										
5,500.0	0.00	0.00	5,500.0	1,799.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
5,572.6	0.00	0.00	5,572.6	1,872.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
Delaware/Bell Canyon (geoprog)										
5,600.0	0.00	0.00	5,600.0	1,899.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
5,700.0	0.00	0.00	5,700.0	1,999.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99

Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #1H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #1H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #1H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 1H	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)
5,800.0	0.00	0.00	5,800.0	2,099.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
5,900.0	0.00	0.00	5,900.0	2,199.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
6,000.0	0.00	0.00	6,000.0	2,299.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
6,100.0	0.00	0.00	6,100.0	2,399.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
6,200.0	0.00	0.00	6,200.0	2,499.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
6,300.0	0.00	0.00	6,300.0	2,599.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
6,400.0	0.00	0.00	6,400.0	2,699.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
6,500.0	0.00	0.00	6,500.0	2,799.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
6,600.0	0.00	0.00	6,600.0	2,899.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
6,700.0	0.00	0.00	6,700.0	2,999.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
6,800.0	0.00	0.00	6,800.0	3,099.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
6,900.0	0.00	0.00	6,900.0	3,199.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
7,000.0	0.00	0.00	7,000.0	3,299.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
7,100.0	0.00	0.00	7,100.0	3,399.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
7,200.0	0.00	0.00	7,200.0	3,499.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
7,300.0	0.00	0.00	7,300.0	3,599.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
7,400.0	0.00	0.00	7,400.0	3,699.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
7,500.0	0.00	0.00	7,500.0	3,799.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
7,600.0	0.00	0.00	7,600.0	3,899.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
7,700.0	0.00	0.00	7,700.0	3,999.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
7,800.0	0.00	0.00	7,800.0	4,099.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
7,900.0	0.00	0.00	7,900.0	4,199.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
8,000.0	0.00	0.00	8,000.0	4,299.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
8,100.0	0.00	0.00	8,100.0	4,399.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
8,200.0	0.00	0.00	8,200.0	4,499.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
8,239.6	0.00	0.00	8,239.6	4,539.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
Bonespring (geoprog)										

Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #1H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #1H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #1H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 1H	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)
8,300.0	0.00	0.00	8,300.0	4,599.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
8,400.0	0.00	0.00	8,400.0	4,699.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
8,500.0	0.00	0.00	8,500.0	4,799.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
8,600.0	0.00	0.00	8,600.0	4,899.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
8,700.0	0.00	0.00	8,700.0	4,999.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
8,749.6	0.00	0.00	8,749.6	5,049.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
Avalon Shale (geoprog)										
8,800.0	0.00	0.00	8,800.0	5,099.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
8,900.0	0.00	0.00	8,900.0	5,199.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
9,000.0	0.00	0.00	9,000.0	5,299.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
9,100.0	0.00	0.00	9,100.0	5,399.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
9,200.0	0.00	0.00	9,200.0	5,499.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
9,300.0	0.00	0.00	9,300.0	5,599.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
9,400.0	0.00	0.00	9,400.0	5,699.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
9,439.6	0.00	0.00	9,439.6	5,739.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
1st Bone Spring (geoprog)										
9,500.0	0.00	0.00	9,500.0	5,799.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
9,600.0	0.00	0.00	9,600.0	5,899.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
9,700.0	0.00	0.00	9,700.0	5,999.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
9,800.0	0.00	0.00	9,800.0	6,099.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
9,900.0	0.00	0.00	9,900.0	6,199.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
9,959.6	0.00	0.00	9,959.6	6,259.0	0.0	0.0	0.0	0.00	586,176.36	785,442.99
2nd Bone Spring (geoprog)										
10,000.0	0.00	0.00	10,000.0	6,299.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
10,100.0	0.00	0.00	10,100.0	6,399.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
10,200.0	0.00	0.00	10,200.0	6,499.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99
10,310.0	0.00	0.00	10,310.0	6,609.4	0.0	0.0	0.0	0.00	586,176.36	785,442.99

Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #1H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #1H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #1H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 1H	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)
10,350.0	4.40	180.00	10,350.0	6,649.4	-1.5	0.0	1.5	11.00	586,174.82	785,442.99
10,400.0	9.90	180.00	10,399.6	6,699.0	-7.8	0.0	7.8	11.00	586,168.60	785,442.99
10,450.0	15.40	180.00	10,448.3	6,747.7	-18.7	0.0	18.7	11.00	586,157.66	785,442.99
10,500.0	20.90	180.00	10,495.8	6,795.2	-34.3	0.0	34.3	11.00	586,142.09	785,442.99
10,550.0	26.40	180.00	10,541.6	6,841.0	-54.3	0.0	54.3	11.00	586,122.04	785,442.99
10,584.1	30.15	180.00	10,571.6	6,871.0	-70.5	0.0	70.5	11.00	586,105.90	785,442.99
3rd Bone Spring (geoprog)										
10,600.0	31.90	180.00	10,585.2	6,884.6	-78.7	0.0	78.7	11.00	586,097.70	785,442.99
10,650.0	37.40	180.00	10,626.4	6,925.8	-107.1	0.0	107.1	11.00	586,069.28	785,442.99
10,700.0	42.90	180.00	10,664.6	6,964.0	-139.3	0.0	139.3	11.00	586,037.05	785,442.99
10,750.0	48.40	180.00	10,699.5	6,998.9	-175.1	0.0	175.0	11.00	586,001.31	785,442.99
10,800.0	53.90	180.00	10,730.9	7,030.3	-214.0	0.0	214.0	11.00	585,962.39	785,442.99
10,850.0	59.40	180.00	10,758.3	7,057.7	-255.7	0.0	255.7	11.00	585,920.64	785,442.99
10,900.0	64.90	180.00	10,781.7	7,081.1	-299.9	0.0	299.9	11.00	585,876.45	785,442.99
10,950.0	70.40	180.00	10,800.7	7,100.1	-346.1	0.0	346.1	11.00	585,830.22	785,442.99
11,000.0	75.90	180.00	10,815.2	7,114.6	-394.0	0.0	394.0	11.00	585,782.39	785,442.99
11,050.0	81.40	180.00	10,825.0	7,124.4	-443.0	0.0	443.0	11.00	585,733.39	785,442.99
11,100.0	86.90	180.00	10,830.1	7,129.5	-492.7	0.0	492.7	11.00	585,683.67	785,442.99
11,128.2	90.00	180.00	10,830.9	7,130.3	-520.9	0.0	520.9	11.00	585,655.50	785,442.99
11,200.0	89.95	179.99	10,830.9	7,130.3	-592.7	0.0	592.7	0.07	585,583.68	785,443.00
11,300.0	89.89	179.97	10,831.0	7,130.4	-692.7	0.0	692.7	0.07	585,483.69	785,443.03
11,400.0	89.82	179.95	10,831.3	7,130.7	-792.7	0.1	792.7	0.07	585,383.69	785,443.10
11,500.0	89.75	179.94	10,831.7	7,131.1	-892.7	0.2	892.7	0.07	585,283.69	785,443.20
11,600.0	89.68	179.92	10,832.2	7,131.6	-992.7	0.3	992.7	0.07	585,183.70	785,443.32
11,700.0	89.62	179.90	10,832.8	7,132.2	-1,092.7	0.5	1,092.7	0.07	585,083.70	785,443.48
11,800.0	89.55	179.88	10,833.5	7,132.9	-1,192.7	0.7	1,192.7	0.07	584,983.71	785,443.67
11,900.0	89.48	179.87	10,834.3	7,133.7	-1,292.7	0.9	1,292.7	0.07	584,883.71	785,443.89

Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #1H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #1H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #1H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 1H	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)
12,000.0	89.42	179.85	10,835.3	7,134.7	-1,392.7	1.1	1,392.7	0.07	584,783.72	785,444.13
12,100.0	89.35	179.83	10,836.4	7,135.8	-1,492.7	1.4	1,492.7	0.07	584,683.73	785,444.41
12,200.0	89.28	179.81	10,837.6	7,137.0	-1,592.7	1.7	1,592.6	0.07	584,583.74	785,444.72
12,300.0	89.22	179.80	10,838.9	7,138.3	-1,692.6	2.1	1,692.6	0.07	584,483.75	785,445.06
12,400.0	89.15	179.78	10,840.3	7,139.7	-1,792.6	2.4	1,792.6	0.07	584,383.76	785,445.43
12,500.0	89.08	179.76	10,841.8	7,141.2	-1,892.6	2.8	1,892.6	0.07	584,283.78	785,445.82
12,600.0	89.02	179.75	10,843.5	7,142.9	-1,992.6	3.3	1,992.6	0.07	584,183.79	785,446.25
12,700.0	88.95	179.73	10,845.3	7,144.7	-2,092.6	3.7	2,092.6	0.07	584,083.81	785,446.71
12,800.0	88.88	179.71	10,847.2	7,146.6	-2,192.6	4.2	2,192.6	0.07	583,983.83	785,447.20
12,900.0	88.82	179.69	10,849.2	7,148.6	-2,292.6	4.7	2,292.5	0.07	583,883.86	785,447.72
13,000.0	88.75	179.68	10,851.3	7,150.7	-2,392.5	5.3	2,392.5	0.07	583,783.88	785,448.27
13,100.0	88.68	179.66	10,853.6	7,153.0	-2,492.5	5.9	2,492.5	0.07	583,683.91	785,448.85
13,200.0	88.61	179.64	10,855.9	7,155.3	-2,592.5	6.5	2,592.5	0.07	583,583.94	785,449.46
13,300.0	88.55	179.62	10,858.4	7,157.8	-2,692.4	7.1	2,692.4	0.07	583,483.98	785,450.10
13,400.0	88.48	179.61	10,861.0	7,160.4	-2,792.4	7.8	2,792.4	0.07	583,384.02	785,450.76
13,500.0	88.41	179.59	10,863.7	7,163.1	-2,892.4	8.5	2,892.4	0.07	583,284.06	785,451.46
13,600.0	88.35	179.57	10,866.5	7,165.9	-2,992.3	9.2	2,992.3	0.07	583,184.10	785,452.19
13,700.0	88.28	179.56	10,869.5	7,168.9	-3,092.3	10.0	3,092.3	0.07	583,084.15	785,452.95
13,800.0	88.21	179.54	10,872.5	7,171.9	-3,192.2	10.8	3,192.2	0.07	582,984.20	785,453.74
13,900.0	88.15	179.52	10,875.7	7,175.1	-3,292.2	11.6	3,292.2	0.07	582,884.26	785,454.56
14,000.0	88.08	179.50	10,879.0	7,178.4	-3,392.1	12.4	3,392.1	0.07	582,784.32	785,455.41
14,100.0	88.01	179.49	10,882.4	7,181.8	-3,492.1	13.3	3,492.1	0.07	582,684.39	785,456.29
14,200.0	87.95	179.47	10,885.9	7,185.3	-3,592.0	14.2	3,592.0	0.07	582,584.45	785,457.21
14,243.8	87.92	179.46	10,887.5	7,186.9	-3,635.7	14.6	3,635.7	0.07	582,540.73	785,457.61
14,300.0	87.92	179.46	10,889.5	7,188.9	-3,691.9	15.2	3,691.9	0.00	582,484.53	785,458.14
14,400.0	87.92	179.46	10,893.2	7,192.6	-3,791.8	16.1	3,791.9	0.00	582,384.60	785,459.08
14,500.0	87.92	179.46	10,896.8	7,196.2	-3,891.8	17.0	3,891.8	0.00	582,284.67	785,460.02

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Site:	Section 3	MD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #1H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #1H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 1H	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)
14,600.0	87.92	179.46	10,900.4	7,199.8	-3,991.7	18.0	3,991.7	0.00	582,184.74	785,460.96
14,700.0	87.92	179.46	10,904.1	7,203.5	-4,091.6	18.9	4,091.7	0.00	582,084.82	785,461.90
14,800.0	87.92	179.46	10,907.7	7,207.1	-4,191.6	19.8	4,191.6	0.00	581,984.89	785,462.84
14,900.0	87.92	179.46	10,911.3	7,210.7	-4,291.5	20.8	4,291.5	0.00	581,884.96	785,463.77
15,000.0	87.92	179.46	10,915.0	7,214.4	-4,391.4	21.7	4,391.5	0.00	581,785.04	785,464.71
15,100.0	87.92	179.46	10,918.6	7,218.0	-4,491.4	22.7	4,491.4	0.00	581,685.11	785,465.65
15,200.0	87.92	179.46	10,922.2	7,221.6	-4,591.3	23.6	4,591.3	0.00	581,585.18	785,466.59
15,300.0	87.92	179.46	10,925.9	7,225.3	-4,691.2	24.5	4,691.3	0.00	581,485.25	785,467.53
15,383.7	87.92	179.46	10,928.9	7,228.3	-4,774.9	25.3	4,774.9	0.00	581,401.59	785,468.31
15,385.9	87.92	179.46	10,929.0	7,228.4	-4,777.0	25.3	4,777.1	0.15	581,399.46	785,468.33

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,664.0	1,664.0	13 3/8"	13-3/8	17-1/2
5,464.6	5,464.6	9 5/8"	9-5/8	12-1/4
15,385.9	10,929.0	5 1/2"	5-1/2	8-1/2

Company:	Read and Stevens Inc.	Local Co-ordinate Reference:	Well North Lea Federal Com 3 #1H
Project:	North Lea Prospect T20S-R34E	TVD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Site:	Section 3	MD Reference:	WELL (copy) @ 3700.6usft (Original Well Elev)
Well:	North Lea Federal Com 3 #1H	North Reference:	Grid
Wellbore:	North Lea Federal Com 3 #1H	Survey Calculation Method:	Minimum Curvature
Design:	131003 North Lea 3 Fed Com 1H	Database:	EDM 5000.1 Single User Db

Formations

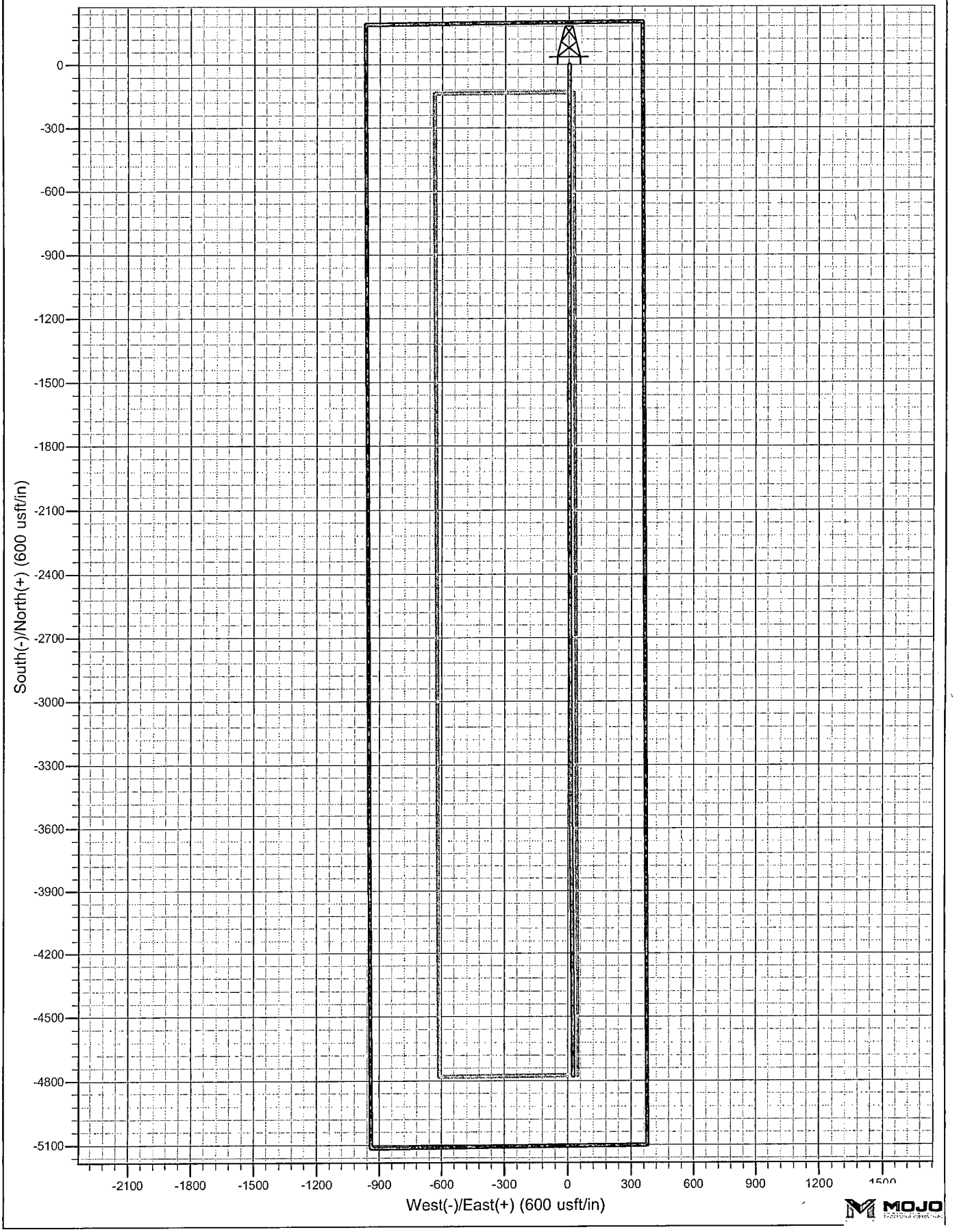
Measured Depth (usft)	Vertical Depth (usft)	Name	Dip (°)
3,587.6	3,587.6	Yates(Geoprog)	0.00
8,749.6	8,749.6	Avalon Shale (geoprog)	0.00
5,199.6	5,199.6	San Andres(Geoprog)	0.00
9,439.6	9,439.6	1st Bone Spring (geoprog)	0.00
9,959.6	9,959.6	2nd Bone Spring (geoprog)	0.00
8,239.6	8,239.6	Bonespring (geoprog)	0.00
4,906.6	4,906.6	Penrose(Geoprog)	0.00
1,638.6	1,638.6	Rustler (geoprog)	0.00
3,860.6	3,860.6	7 Rivers(Geoprog)	0.00
4,590.6	4,590.6	Queen(Geoprog)	0.00
3,381.6	3,381.6	Base of Salt (geoprog)	0.00
1,770.6	1,770.6	Top of Salt (geoprog)	0.00
10,584.1	10,571.6	3rd Bone Spring (geoprog)	0.00
5,454.6	5,454.6	Lamar Lime (geoprog)	0.00
5,128.6	5,128.6	Grayburg(Geoprog)	0.00
5,572.6	5,572.6	Delaware/Bell Canyon (geoprog)	0.00

Checked By: _____ Approved By: _____ Date: _____

Project: North Lea Prospect T20S-R34E
Site: Section 3
Well: North Lea Federal Com 3 #1H
Wellbore: North Lea Federal Com 3 #1H
Design: 131003 North Lea 3 Fed Com 1H

Azimuths to Grid North
True North: -0.43°
Magnetic North: 6.98°

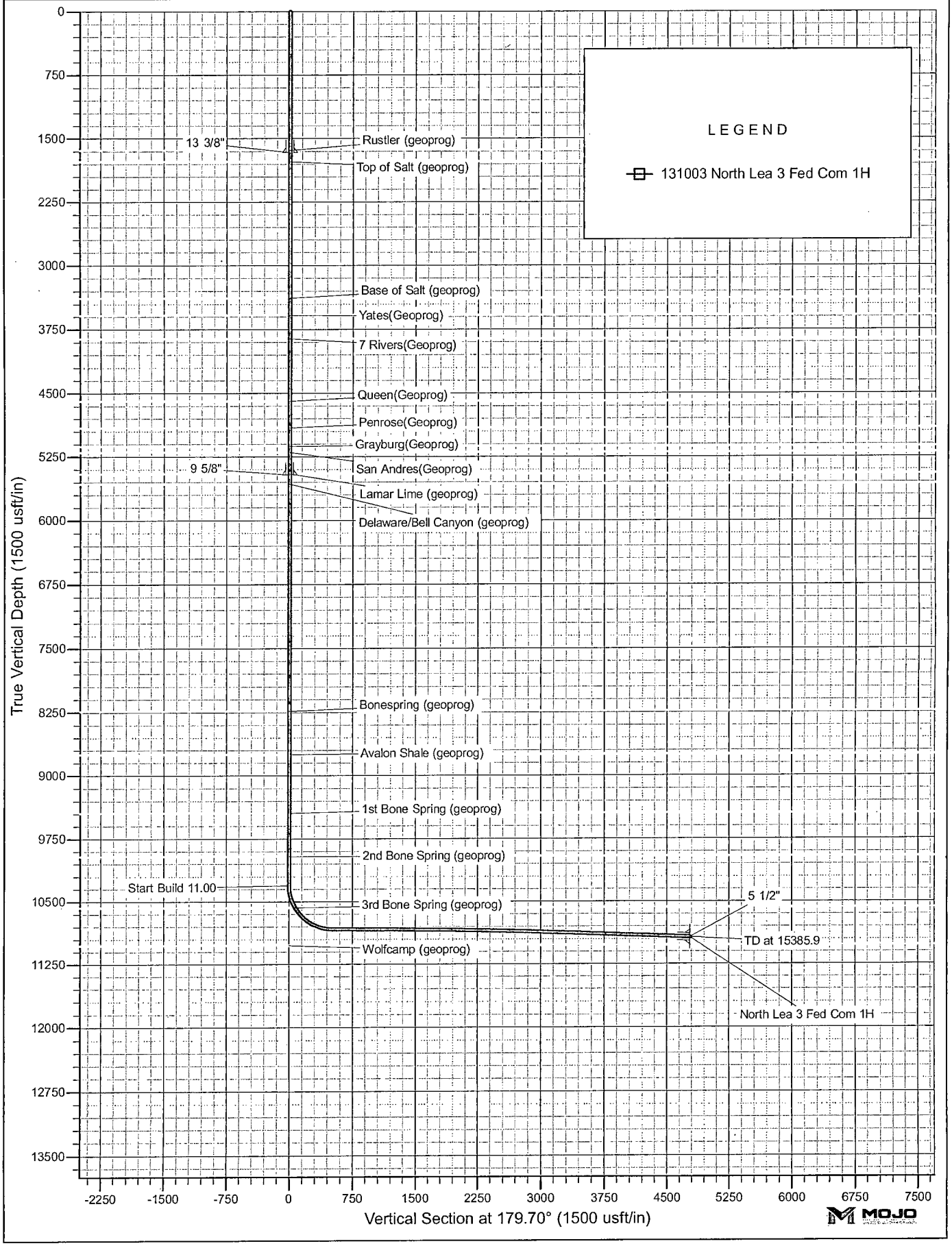
Magnetic Field
Strength: 48695.8snT
Dip Angle: 60.51°
Date: 28/12/2012
Model: IGRF2010

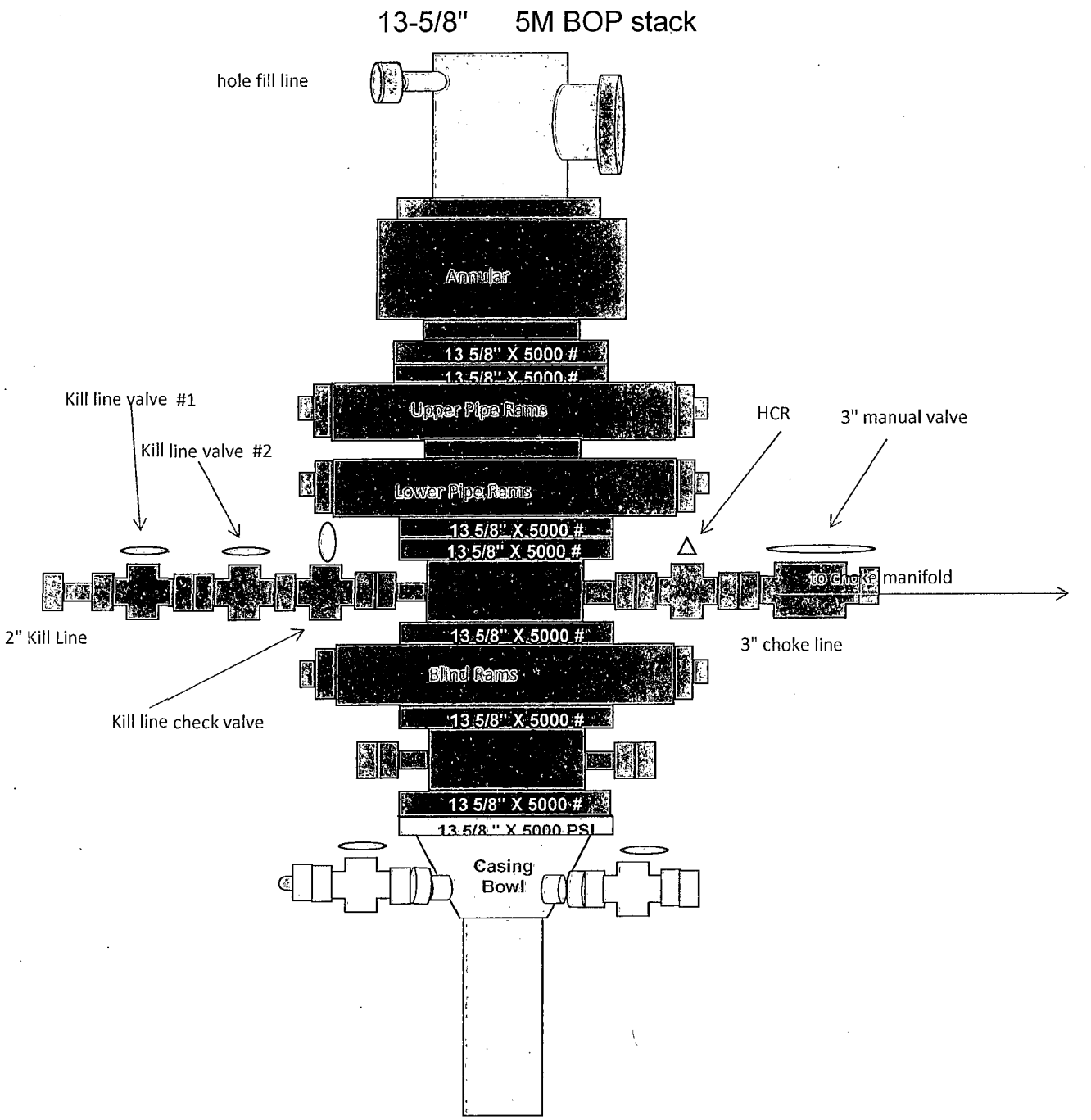


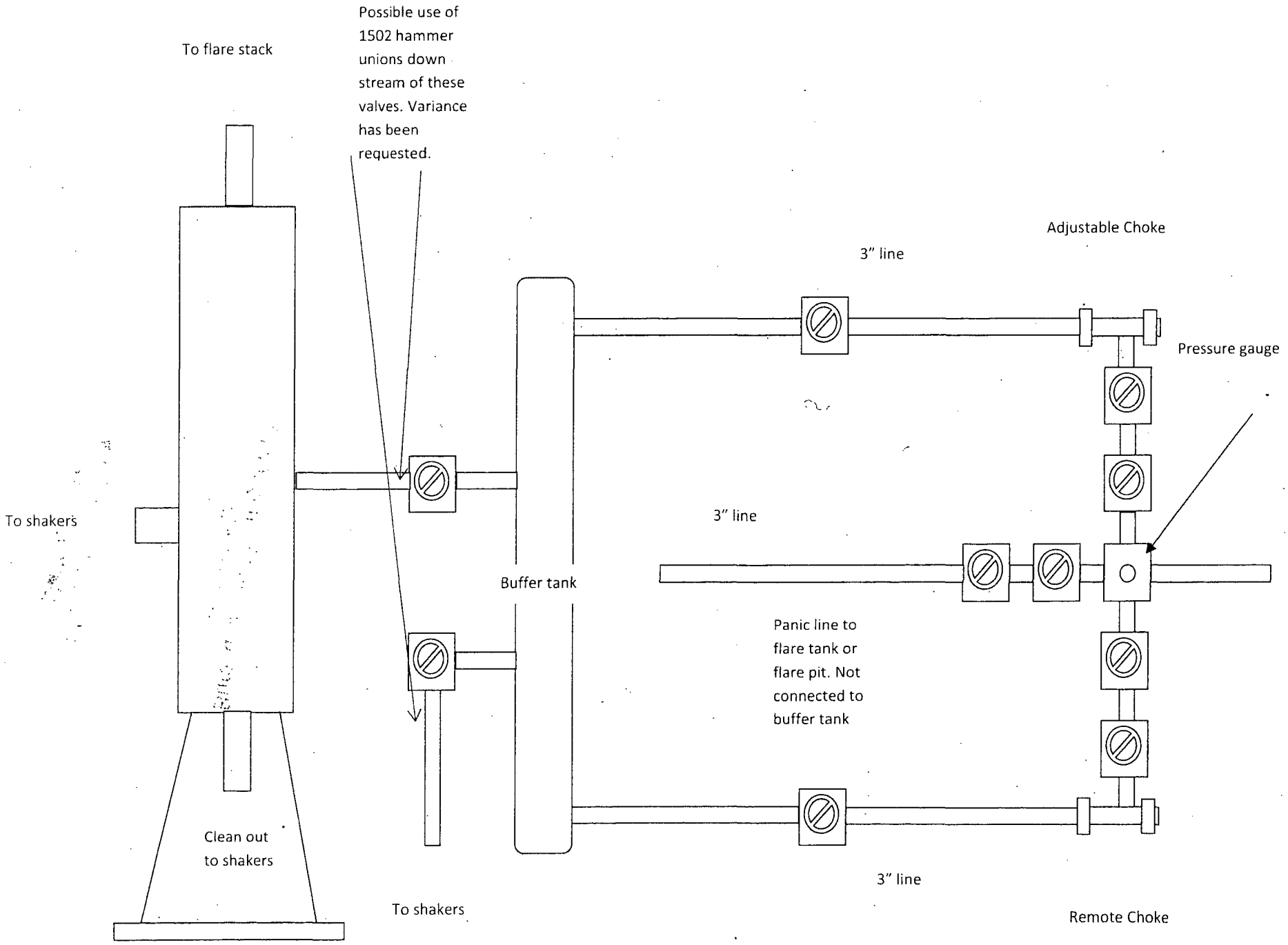
Project:	North Lea Prospect T20S-R34E
Site:	Section 3
Well:	North Lea Federal Com 3 #1H
Wellbore:	North Lea Federal Com 3 #1H
Design:	131003 North Lea 3 Fed Com 1H

Azimuths to Grid North
True North: -0.43°
Magnetic North: 6.98°

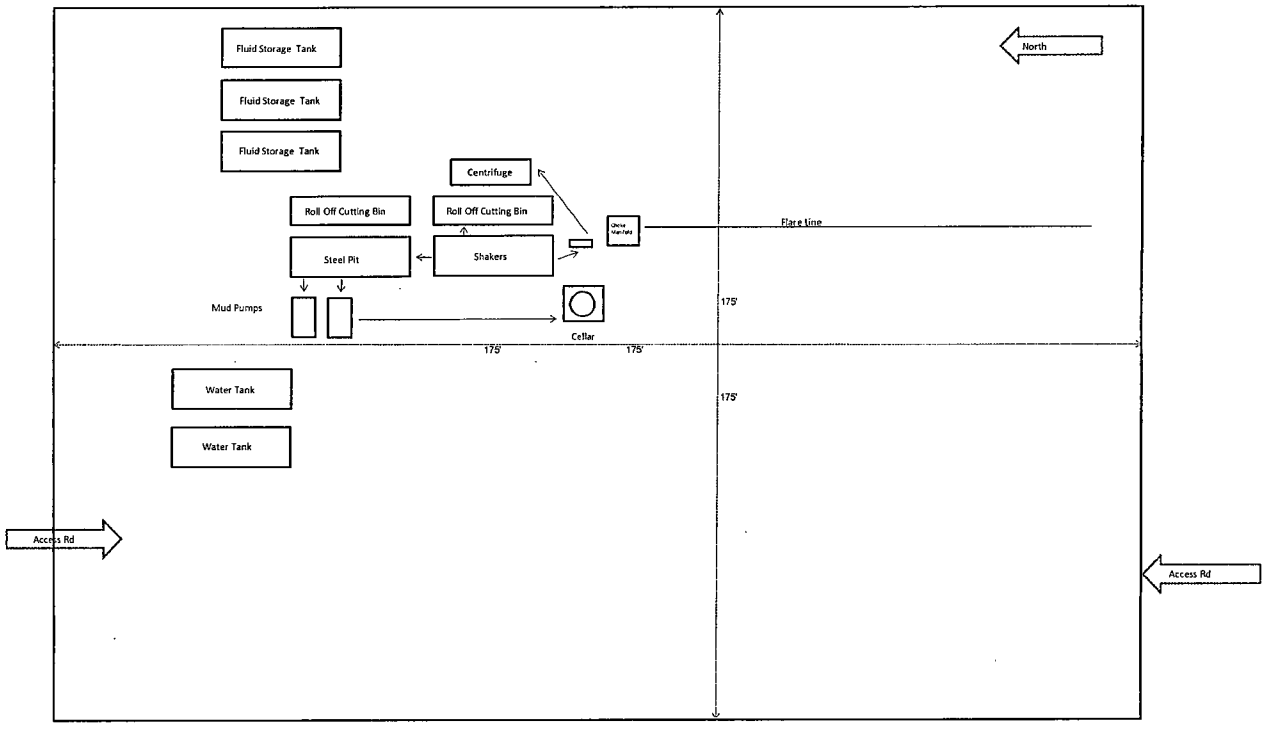
Magnetic Field
Strength: 48695.8snT
Dip Angle: 60.51°
Date: 28/12/2012
Model: IGRF2010




13-5/8" 5M BOP stack
hole fill line
Annular
13 5/8" X 5000 #
13 5/8" X 5000 #
Upper Pipe Rams
Kill line valve #1
Kill line valve #2
HCR
3" manual valve
Lower Pipe Rams
13 5/8" X 5000 #
13 5/8" X 5000 #
to choke manifold
2" Kill Line
3" choke line
13 5/8" X 5000 #
Blind Rams
Kill line check valve
13 5/8" X 5000 #
13 5/8" X 5000 #
13 5/8" X 5000 PSI
Casing
Bowl


To flare stack
Possible use of 1502 hammer unions down stream of these valves. Variance has been requested.
Adjustable Choke
3" line
Pressure gauge
To shakers
3" line
Buffer tank
Panic line to flare tank or flare pit. Not connected to buffer tank
Clean out to shakers
To shakers
3" line
Remote Choke

Closed Loop Diagram



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

North Lea 3 Fed Com #1H

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
2-20yd^3 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.

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 #1H
API Number: _____ OCD Permit Number: _____
U/L or Qtr/Qtr A 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 indentify 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 by RA, President Date: 09/25/2013
e-mail address: steve.morris@mojocorp.c (Ray Nabors) 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.

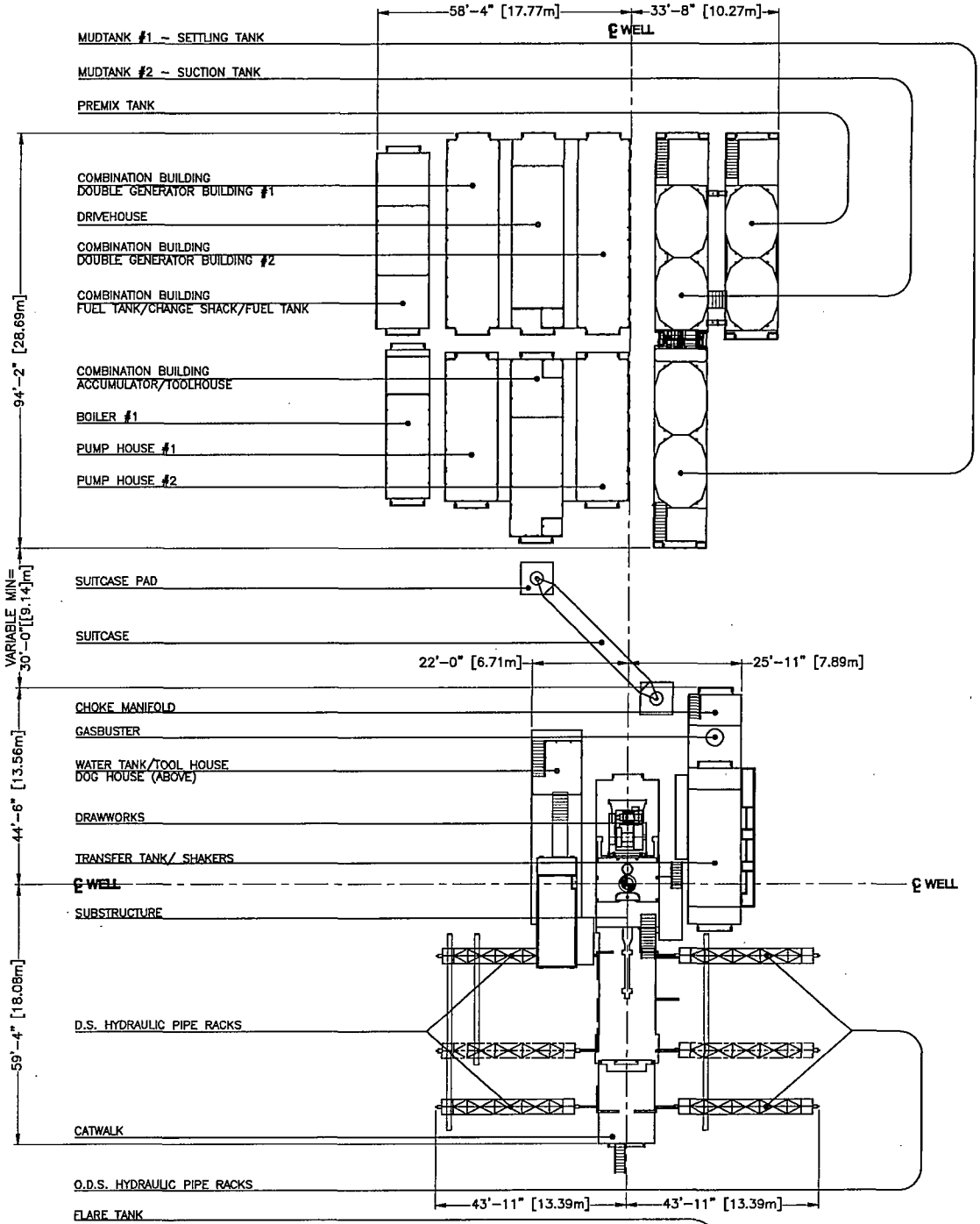
Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

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

PRECISION DRILLING

CALGARY, ALBERTA, CANADA

Read and Stevens, Inc.

400 N Pennsylvania Ave #1000, Roswell, NM 88201

Read and Stevens

H2S Drilling Operations Plan

North Lea 3 Fed Com #1H

Lea County, New Mexico

Prepared by: Steve Morris

Date: 09/25/2013

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