13-753
TCS
9/3/2013

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SEP 03 2013
NMOCD ARTESIA

OCD Artesia

Form 3160-3
(August 2007)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMLC-055383A

6. If Indian, Allotee or Tribe Name
N/A

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.
N/A

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

8. Lease Name and Well No.
SIMON A 5 M FEDERAL 2 <40104>

2. Name of Operator LIME ROCK RESOURCES II-A, L.P. <277558>

9. API Well No.
30-015- 41640

3a. Address 1111 BAGBY, SUITE 4600
HOUSTON, TX 77002

3b. Phone No. *(include area code)*
713 292-9528

10. Field and Pool, or Exploratory
RED LAKE; GLORIETA-YESO NE <96836>

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 610' FSL & 900' FWL
At proposed prod. zone 330' FSL & 990' FWL

11. Sec., T. R. M. or Blk. and Survey or Area
SWSW 5-18S-27E NMPM

14. Distance in miles and direction from nearest town or post office*
7 AIR MILES SE OF ARTESIA, NM

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
610' from SHL & 330' from BHL

16. No. of acres in lease
160

17. Spacing Unit dedicated to this well
SWSW

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
SHL: 103' (WRLU 58)
BHL: 330' (WRLU 58)

19. Proposed Depth
TVD=4,900' & MD=4,918'

20. BLM/BIA Bond No. on file
NMB-000716 & NMB-000756

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3,456.8' UNGRADED

22. Approximate date work will start*
06/01/2013

23. Estimated duration
1 MONTH

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)*: BRIAN WOOD (505 466-8120) — Date: 04/28/2013

Title: CONSULTANT (FAX 505 466-9682)

Approved by *(Signature)*: /s/ James Stovall — Name *(Printed/Typed)* — Date: AUG 29 2013

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)

Roswell Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised October 15,2009
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015- 41640	96836	Red Lake: Glorieta-Yeso Northeast

[4] Property Code	[5] Property Name	[6] Well Number
40104	SIMON A "5" M FEDERAL	2

[7] OGRID No.	[8] Operator Name	[9] Elevation
277558	LIME ROCK RESOURCES II-A, L.P.	3456.8

[10] Surface Location

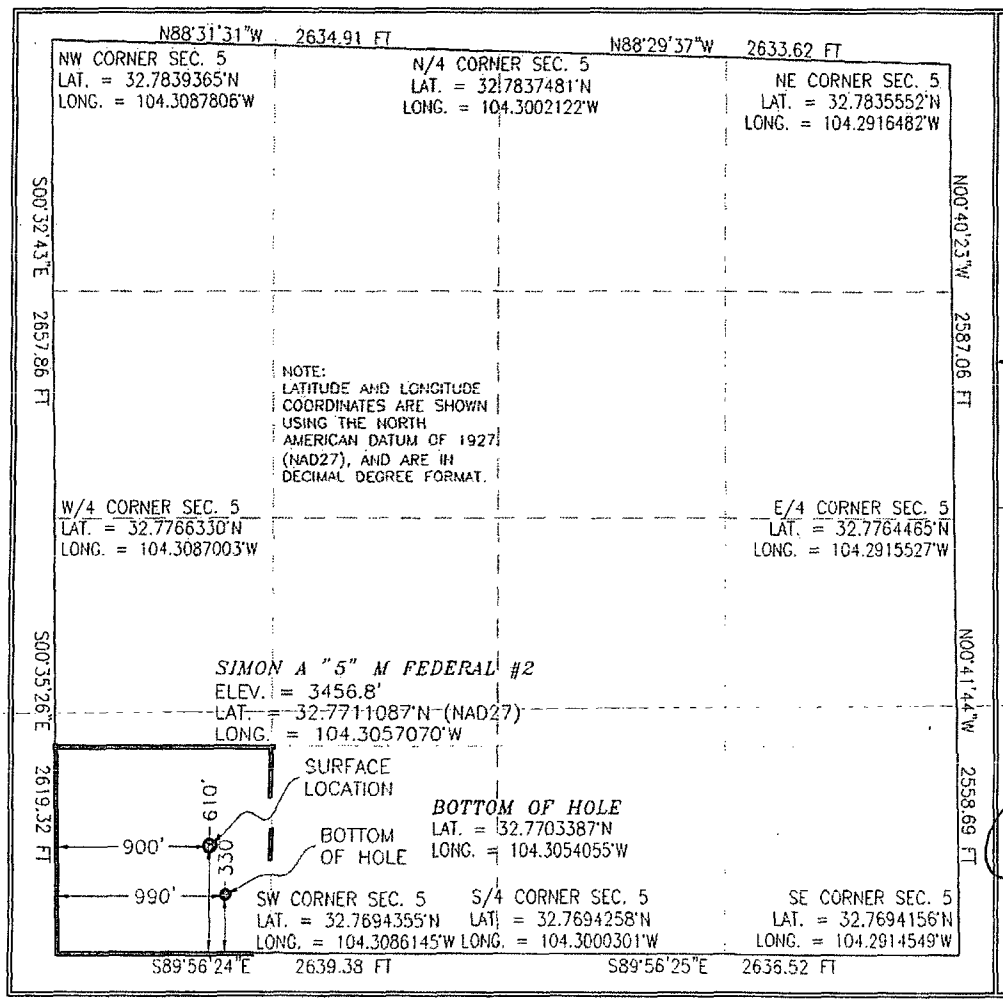
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	5	18 S	27 E		610	SOUTH	900	WEST	EDDY

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	5	18 S	27 E		330	SOUTH	990	WEST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
40			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

B. Wood

4-28-13

Signature Date

Printed Name Brian Wood

brian@permitswest.com

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

MAY 21, 2012

Date of Survey

FILIMON F. JARAMILLO NEW MEXICO REGISTERED LAND SURVEYOR

Signature and Seal of Professional Surveyor:

Certificate Number: FILIMON F. JARAMILLO, PLS 12797 SURVEY NO. 847

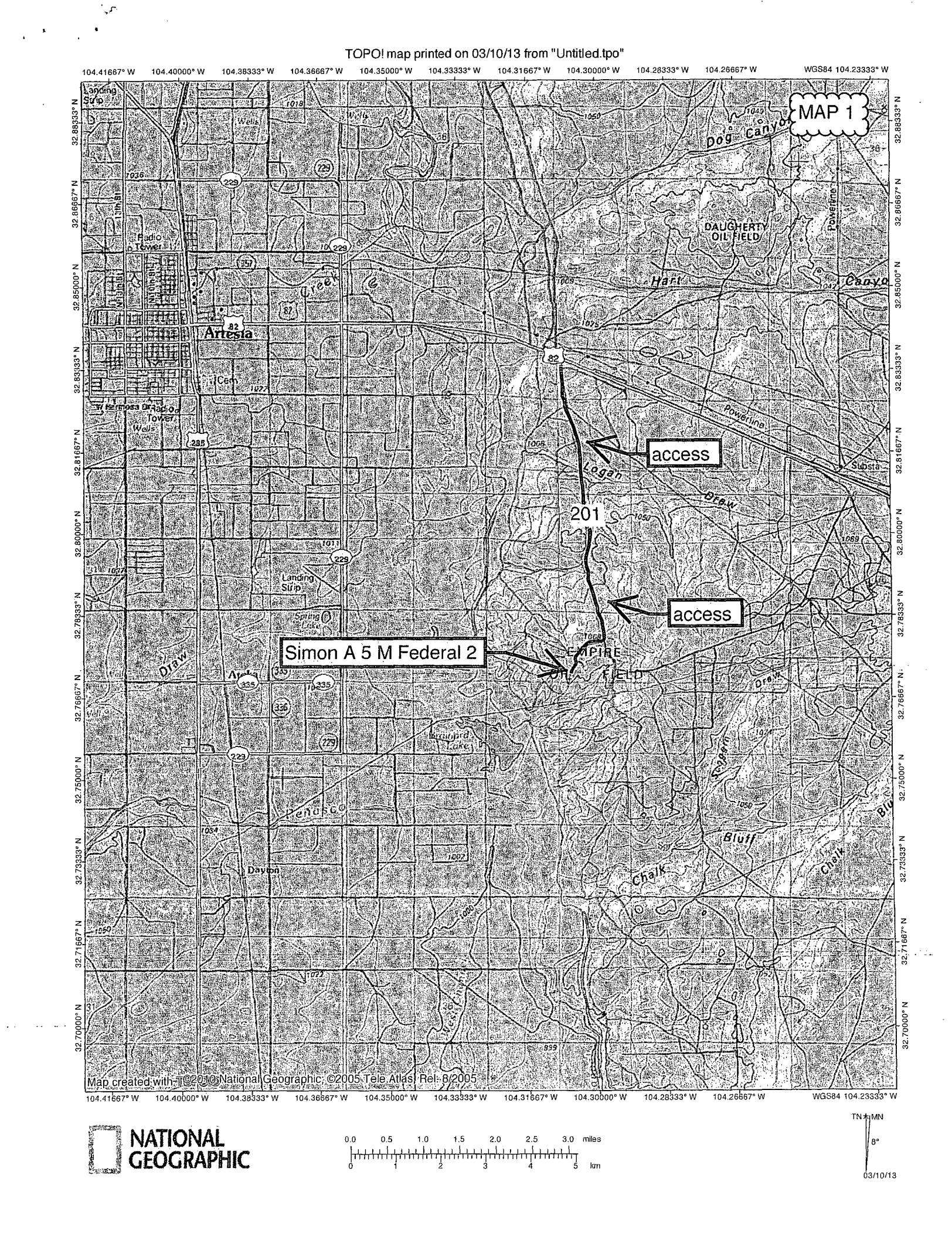
REPRESENTATION

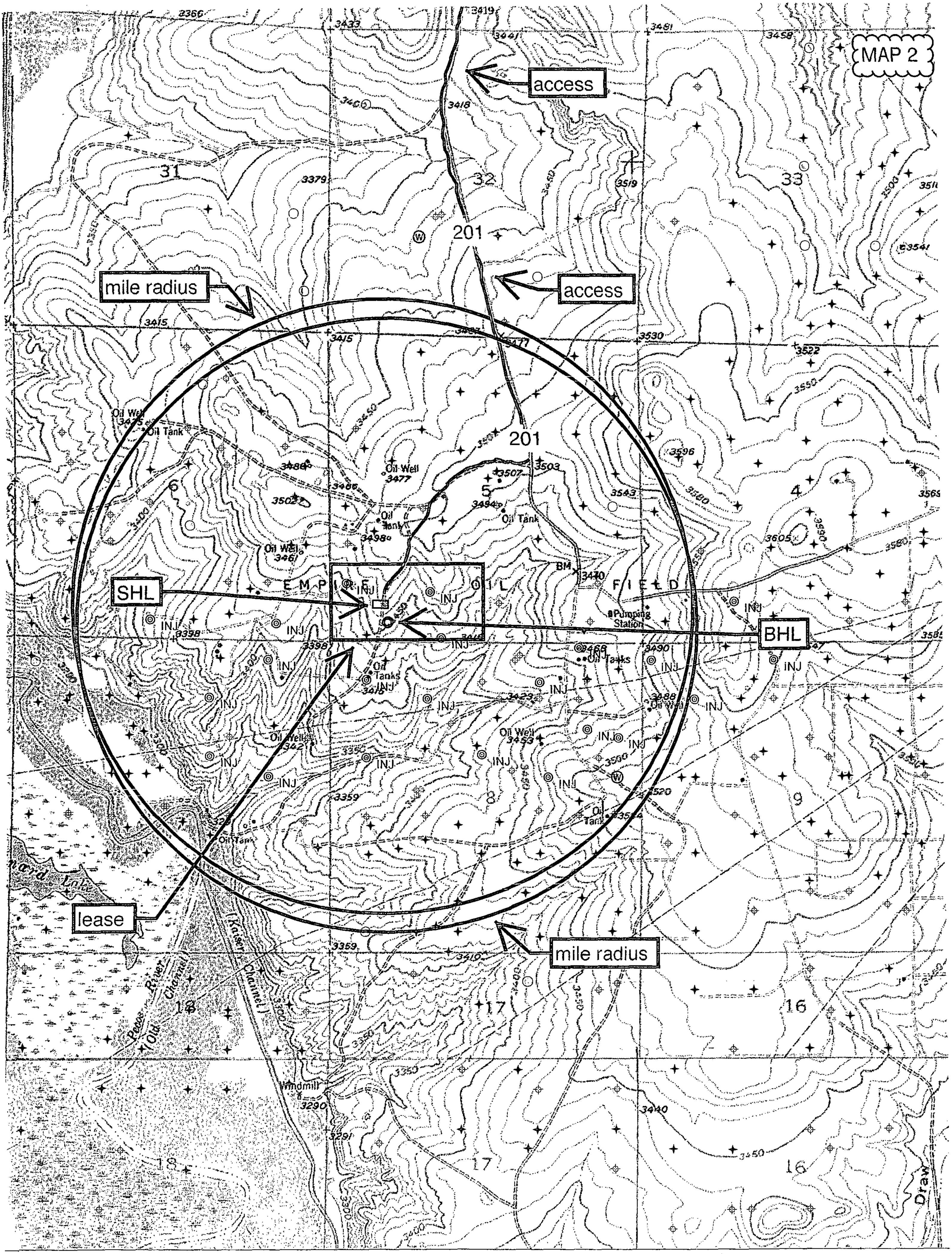
I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this 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 in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U. S. C. 1001 for the filing of false statements. Executed this 28th day of April, 2013.

Brian Wood, Consultant
Permits West, Inc.
37 Verano Loop, Santa Fe, NM 87508
(505) 466-8120 FAX: (505) 466-9682 Cellular: (505) 699-2276

Field representative will be:

Spencer Cox, Production Engineer
Lime Rock Resources II-A, L.P.
1111 Bagby St., Suite 4600
Houston, TX 77002
Office: (713) 292-9528
Mobile: (432) 254-5140
FAX: (713) 292-9578


TOPO! map printed on 03/10/13 from "Untitled.tpo"
MAP 1
access
201
access
Simon A 5 M Federal 2
Artesia
DAUGHERTY OIL FIELD
EMPIRE FIELD
Dayton
Map created with TOPO! ©2010 National Geographic; ©2005 Tele Atlas Rel. 8/2005
NATIONAL GEOGRAPHIC
03/10/13

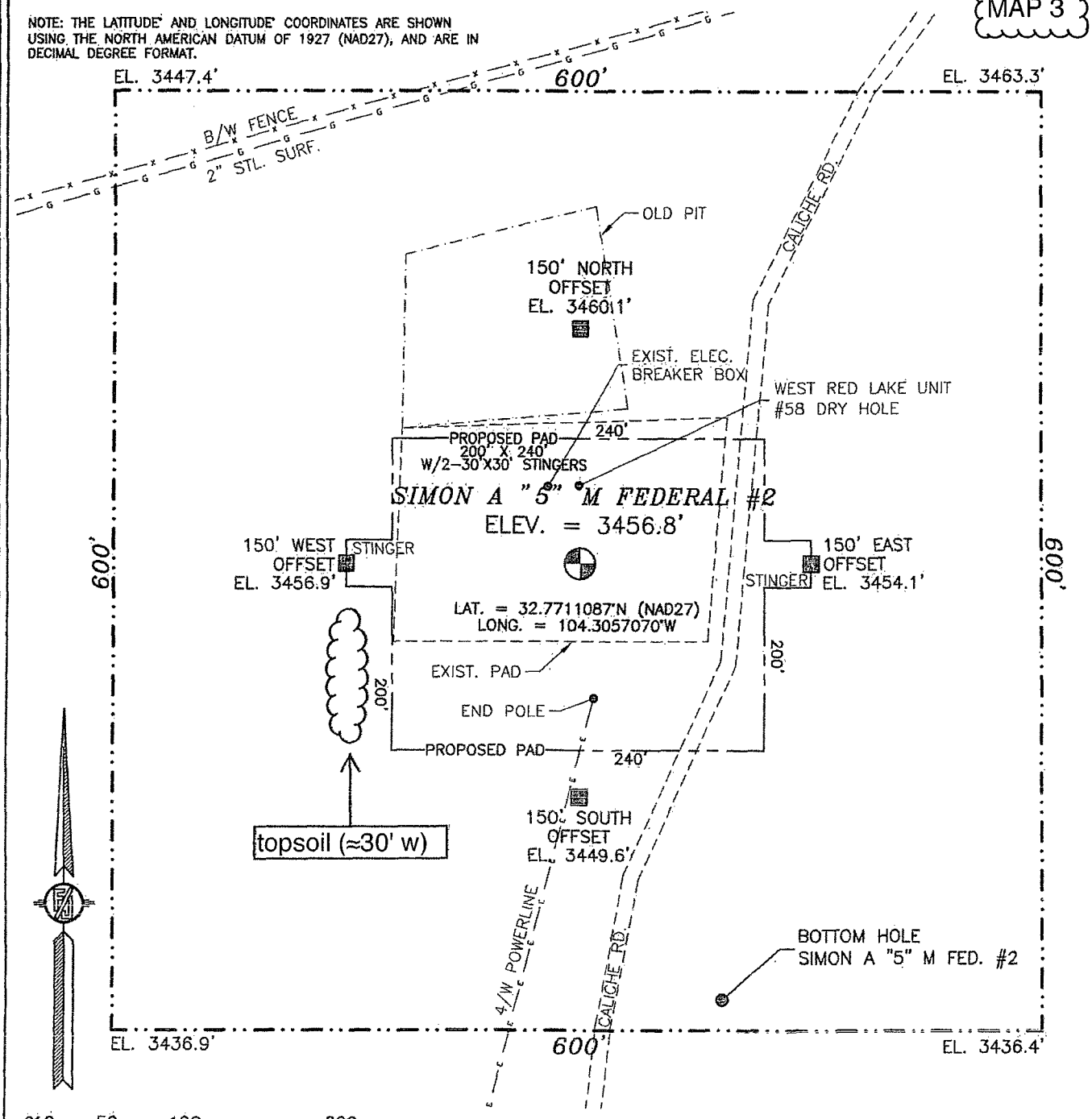


MAP 2
access
access
mile radius
mile radius
SHL
BHL
lease
201
201
EMPIRE OIL FIELD
Oil Well
Oil Tank
Oil Tanks
INJ
Pumping Station
Windmill
BM
Pecos River
Old Channel
Kaiser Channel
Draw
31
32
33
4
5
6
8
9
16
17
18

SECTION 5, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MAP 3

NOTE: THE LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1927 (NAD27), AND ARE IN DECIMAL DEGREE FORMAT.



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM CALICHE CR 201 (CHALK BLUFF) AND CALICHE CR 227 (LITTLE DIAMOND) GO NORTH ON CR 201 0.4 MILES, TURN LEFT ON CALICHE ROAD AND GO WEST 0.1 MILE, TURN LEFT AND GO SOUTHWEST 0.6 MILES AND LOCATION IS ON THE RIGHT 110 FT.

LIME ROCK RESOURCES II-A, L.P.

SIMON A "5" M FEDERAL #2

LOCATED 610 FT. FROM THE SOUTH LINE AND 900 FT. FROM THE WEST LINE OF SECTION 5, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

MAY 21, 2012

SURVEY NO. 847

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

Lime Rock Resources II-A, L.P.
Simon A 5 M Federal 2
SHL: 610' FSL & 900' FWL
BHL: 330' FSL & 990' FWL
Sec. 5, T. 18 S., R. 27 E., Eddy County, NM

Drilling Program

1. ESTIMATED TOPS

Name	TVD	MD	Content
Artesia Group*	0'	0'	water
Bowers** Seven Rivers	427'	427'	-
Queen	607'	607'	oil, gas
Grayburg	1,016'	1,020'	oil, gas
Premier	1,217'	1,223'	oil, gas
San Andres	1,227'	1,234'	oil, gas
Glorieta	2,542'	2,561'	oil, gas
Yeso	2,693'	2,712'	oil, gas
Total Depth	4,900'	4,918'	oil, gas

* in which contingency string, if needed, at 375'
** in which surface casing will be set at 440'

2. NOTABLE ZONES

Water zones will be protected with casing, cement, and weighted mud. Fresh water found while drilling will be recorded. Closest water well (RA 03714) is 4,979' southeast. Top of water bearing strata was at an elevation of 3,190'. That would be the equivalent of a depth of 267' in this well.

3. PRESSURE CONTROL

A 2,000 psi BOP stack and manifold system will be used. A typical 2,000 system is shown on PAGE 3. If the equipment changes, then a Sundry Notice will be filed. System will meet Onshore Orders 2 (BOP) and 6 (H_2S) requirements.

The blowout preventer equipment (BOP) will consist of a 2000 psi rated, "XLT" type, National VARCO double ram preventer that will be tested to a maximum pressure of 2000 psi. The unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and drill pipe rams on bottom. The 2M BOP will be installed on the 8-5/8" surface casing and utilized continuously until total depth is reached. All casing strings will be tested as per Onshore Order #2. This also includes a thirty-day (30) test, should the rig still be operating on the same well in thirty days.

Pipe rams will be operated and checked each 24-hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily drilling logs.

The BOP equipment will consist of the following:

- Double ram with blind rams (top) and pipe rams (bottom),
- Drilling spool, or blowout preventer with 2 side outlets (choke side and kill side shall be at least 2" diameter),
- Kill line (2" minimum),
- At least 2 choke line valves (2" minimum),
- 2" diameter choke line,
- 2 kill valves, one of which will be a check valve (2" minimum),
- 2 chokes, one of which will be capable of remote operation,
- Pressure gauge on choke manifold,
- Upper Kelly cock valve with handle available,
- Safety valve and subs to fit all drill string connections in use,
- All BOPE connections subjected to well pressure will be flanged, welded, or clamped,
- A fill-up line above the uppermost preventer.

4. CASING & CEMENT

Type	Setting Depth	Hole	Casing	#/ft	Grade	Casing Thread	API	Age
Conductor	80'	26"	20"	91.5	B	Weld	No	New
Surface	440'	12-1/4"	8-5/8"	24	J-55	S T & C	Yes	New
Production	4918'	7-7/8"	5-1/2"	17	J-55	L T & C	Yes	New

All casing designed with a minimum of:

Burst Safety Factor	Collapse Safety Factor	Tension Safety Factor
1.18	1.20	2.00

Casing	Depth Set (feet)	sacks cement	cement top	density (ppg)	yield (cu ft/ sack)	total (cubic feet)	% excess	blend
conductor	80	N/A	GL	ready mix	ready mix	ready mix	ready mix	ready mix
surface	440	325	GL	14.8	1.35	439	200	1
production lead	4918	280	GL	12.8	1.903	532	80	2
production tail	4918	575	GL	14.8	1.33	765	50	3

Surface casing blend (1) will be Class C + ¼ pound/sack cello flake + 2% $CaCl_2$. Centralizers will be installed as required by Onshore Order 2.

Production casing lead blend (2) will be 35:65 poz Class C + 5% NaCl + 1/4 pound/sack cello flake + 5 pounds per sack LCM-1 + 0.4% R-3 + 6% gel.

Production casing tail blend (3) will be Class C + 0.6% R-3 + ¼ pound/sack cello flake.

Cement volumes will be adjusted based on caliper log volumes and depths of casing and adjusted proportionately for depth changes.

A 13-3/8", 48#, H-40, ST&C, New, API contingency string will be set at 375' in a reamed 17-½" hole if circulation is lost in cave or karst (cave & karst potential to 350') and not regained. Contingency string will be cemented to the surface with 400 sacks (536 cubic feet) Class C + ¼ pound per sack cello flake +2% CaCl2 mixed to yield 1.34 cubic feet per sack and 14.8 pounds per gallon. Excess >100%

Upon the setting of a 13-3/8" contingency casing string, a 13-5/8" x 13-3/8" weld on wellhead will be installed. A 13-3/8" to 11" adapter flange will be installed and the 11" XLT 2000 psi NOV double ram BOP/BOPE (Schematic attached) will be installed. The BOP will be tested against the casing to 70% of the internal yield pressure of the 13-3/8", 48#, H-40, ST&C (1211 psi) casing and held for 30 min before drilling out the 13-3/8" casing shoe. The formation will be drilled with a 10-¾" bit +/- 50 ft past the 13-3/8" casing shoe into competent formation and 8-5/8" casing will be set and cemented with 200 sacks (268 cubic feet) Class C + ¼ pound per sack cello flake +2% CaCl2 mixed to yield 1.34 cubic feet per sack and 14.8 pounds per gallon. Excess >125%

5. MUD PROGRAM

An electronic/mechanical mud monitor will with a minimum pit volume totalizer, stroke counter, and flow sensor will be used. All necessary mud products will be onsite to handle any abnormal hole conditions that could possibly be encountered during the drilling of this well. Circulation could be lost in the Grayburg and San Andres.

Interval	0-440	440-4750	4750-TD
Type	fresh water	brine	brine w/ gel & starch
weight	8.5-9.2	9.9-10.2	9.9-10.2
pH	10	10-11.5	10-11.5
WL	NC	NC	15-20
viscosity	28-34	30-32	32-35
MC	NC	NV	1
solids	NC	<2%	<3%
pump rate	300-350 gpm	350-400 gpm	400-450 gpm
other	LCM as needed	salt gel & MF as needed, pump high viscosity sweeps to control solids	salt gel, acid, & MF as needed; pump high viscosity sweeps to control solids

6. CORES, TESTS, & LOGS

No core or drill stem test is planned. A triple combo with spectral GR - dual lateral log, micro spherical focused log, & spectral density log will be run after tagging total depth. Will log from total depth to surface. A dual spaced neutron log and compensated spectral natural GR log will be run from total depth to surface.

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is 2,121 psi. No H_2S is expected during the drilling phase. Nevertheless, H_2S monitoring equipment will be on the rig floor and air packs will be available before drilling out of the surface casing. The mud logger will be warned to use a gas trap to detect H_2S. If any H_2S is detected, then the mud weight will be increased and H_2S inhibitors will be added to control the gas. An H_2S drilling operations contingency plan is attached.

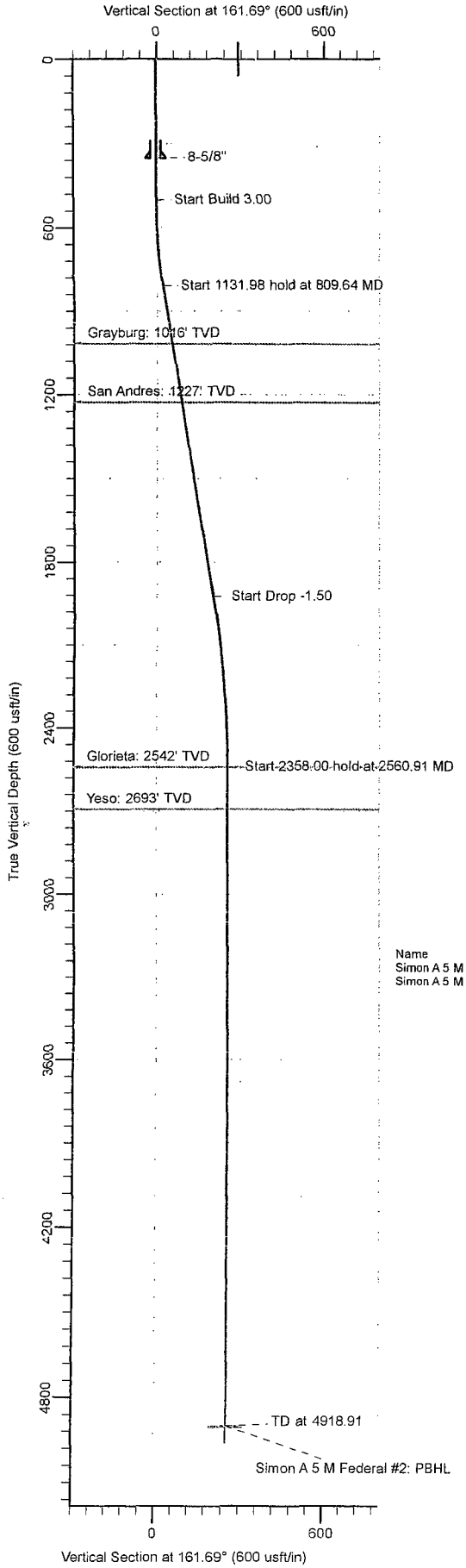
The well is located in a potential cave or karst area. Thus, lost circulation is possible down to 350'. See the contingency casing string and cement plan on the preceding page.

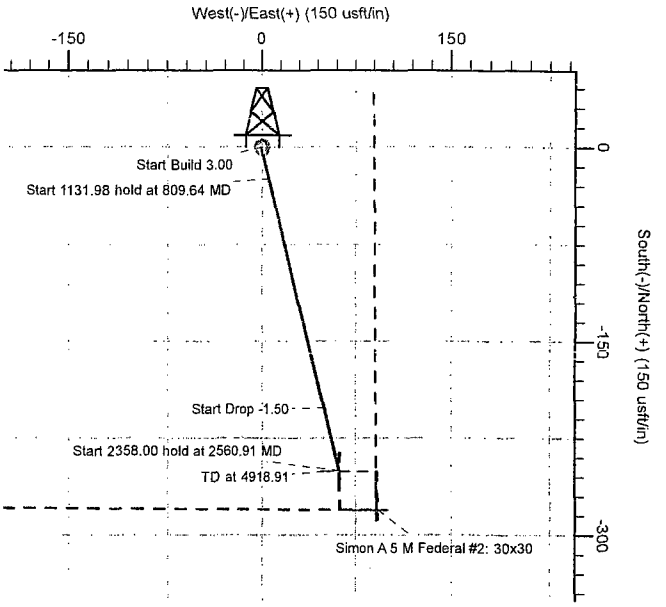
8. OTHER INFORMATION

The anticipated spud date is upon approval. It is expected it will take ≈1 month to drill and complete the well.

The well will be directionally drilled because the preferred bottom hole location is under a steep hillside.

Lime Rock Energy
Eddy County, NM
Simon A 5 M Federal #2
Simon A 5 M Federal #2
Plan #1
Original Well Elev





RKB Elevation: RKB = 13.4' @ 3470.20usft (Original Well Elev)
Ground Elevation: 3456.80

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	644241.40	508491.57	32° 46' 15.991 N	104° 18' 20.545 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Sh
Simon A 5 M Federal #2: 30x30	0.00	-250.13	92.67	32° 46' 13.219 N	104° 18' 19.460 W	Rectangle (Sides: L30.00 W30.
Simon A 5 M Federal #2: PBHL	4900.00	-250.13	62.67	32° 46' 13.516 N	104° 18' 19.811 W	P

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	
3	809.64	9.29	165.93	808.29	-24.30	6.09	3.00	24.98	
4	1941.62	9.29	165.93	1925.42	-201.54	50.50	0.00	207.20	
5	2560.91	0.00	0.00	2542.00	-250.13	62.67	1.50	257.16	
6	4918.91	0.00	0.00	4900.00	-250.13	62.67	0.00	257.16	Simon A 5 M Federal #2: PBHL

US State Plane 1927 (Exact solution)
NAD 1927 (NADCON CONUS)
Clarke 1866
New Mexico East 3001
Mean Sea Level

Azimuths to True North
Magnetic North: 7.74°

Magnetic Field
Strength: 48677.5snT
Dip Angle: 60.52°
Date: 4/25/2013
Model: IGRF2010

Database:	Childress	Local Co-ordinate Reference:	Well Simon A 5 M Federal #2
Company:	Lime Rock Energy	TVD Reference:	RKB = 13.4' @ 3470.20usft (Original Well Elev)
Project:	Eddy County, NM	MD Reference:	RKB = 13.4' @ 3470.20usft (Original Well Elev)
Site:	Simon A 5 M Federal #2	North Reference:	True
Well:	Simon A 5 M Federal #2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project Eddy County, NM

Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Simon A 5 M Federal #2

Site Position:		Northing:	644,241.41 usft	Latitude:	32° 46' 15.991 N
From:	Lat/Long	Easting:	508,491.57 usft	Longitude:	104° 18' 20.545 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.01 °

Well Simon A 5 M Federal #2

Well Position	+N/-S	0.00 usft	Northing:	644,241.41 usft	Latitude:	32° 46' 15.991 N
	+E/-W	0.00 usft	Easting:	508,491.57 usft	Longitude:	104° 18' 20.545 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,456.80 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/25/2013	7.74	60.52	48,678

Design Plan #1

Audit Notes:

Version:		Phase:	PLAN	Tie On Depth:	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	161.69

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
809.64	9.29	165.93	808.29	-24.30	6.09	3.00	3.00	0.00	165.93	
1,941.62	9.29	165.93	1,925.42	-201.54	50.50	0.00	0.00	0.00	0.00	
2,560.91	0.00	0.00	2,542.00	-250.13	62.67	1.50	-1.50	0.00	180.00	
4,918.91	0.00	0.00	4,900.00	-250.13	62.67	0.00	0.00	0.00	0.00	Simon A 5 M Federal

Database:	Childress	**Local Co-ordinate Reference:**	Well Simon A 5 M Federal #2
Company:	Lime Rock Energy	**TVD Reference:**	RKB = 13.4' @ 3470.20usft (Original Well Elev)
Project:	Eddy County, NM	**MD Reference:**	RKB = 13.4' @ 3470.20usft (Original Well Elev)
Site:	Simon A 5 M Federal #2	**North Reference:**	True
Well:	Simon A 5 M Federal #2	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Simon A 5 M Federal #2: 30x30									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	3.00	165.93	599.95	-2.54	0.64	2.61	3.00	3.00	0.00
700.00	6.00	165.93	699.63	-10.15	2.54	10.43	3.00	3.00	0.00
809.64	9.29	165.93	808.29	-24.30	6.09	24.98	3.00	3.00	0.00
900.00	9.29	165.93	897.46	-38.44	9.63	39.52	0.00	0.00	0.00
1,000.00	9.29	165.93	996.15	-54.10	13.56	55.62	0.00	0.00	0.00
1,020.11	9.29	165.93	1,016.00	-57.25	14.34	58.86	0.00	0.00	0.00
Grayburg: 1016' TVD									
1,100.00	9.29	165.93	1,094.84	-69.76	17.48	71.72	0.00	0.00	0.00
1,200.00	9.29	165.93	1,193.53	-85.42	21.40	87.82	0.00	0.00	0.00
1,233.92	9.29	165.93	1,227.00	-90.73	22.73	93.28	0.00	0.00	0.00
San Andres: 1227' TVD									
1,300.00	9.29	165.93	1,292.21	-101.07	25.32	103.91	0.00	0.00	0.00
1,400.00	9.29	165.93	1,390.90	-116.73	29.25	120.01	0.00	0.00	0.00
1,500.00	9.29	165.93	1,489.59	-132.39	33.17	136.11	0.00	0.00	0.00
1,600.00	9.29	165.93	1,588.28	-148.05	37.09	152.21	0.00	0.00	0.00
1,700.00	9.29	165.93	1,686.97	-163.71	41.02	168.30	0.00	0.00	0.00
1,800.00	9.29	165.93	1,785.66	-179.36	44.94	184.40	0.00	0.00	0.00
1,900.00	9.29	165.93	1,884.35	-195.02	48.86	200.50	0.00	0.00	0.00
1,941.62	9.29	165.93	1,925.42	-201.54	50.50	207.20	0.00	0.00	0.00
2,000.00	8.41	165.93	1,983.10	-210.25	52.68	216.16	1.50	-1.50	0.00
2,100.00	6.91	165.93	2,082.21	-223.19	55.92	229.46	1.50	-1.50	0.00
2,200.00	5.41	165.93	2,181.63	-233.60	58.53	240.16	1.50	-1.50	0.00
2,300.00	3.91	165.93	2,281.29	-241.49	60.51	248.27	1.50	-1.50	0.00
2,400.00	2.41	165.93	2,381.14	-246.84	61.85	253.78	1.50	-1.50	0.00
2,500.00	0.91	165.93	2,481.09	-249.66	62.55	256.67	1.50	-1.50	0.00
2,560.91	0.00	0.00	2,542.00	-250.13	62.67	257.16	1.50	-1.50	0.00
Glorieta: 2542' TVD									
2,600.00	0.00	0.00	2,581.09	-250.13	62.67	257.16	0.00	0.00	0.00
2,700.00	0.00	0.00	2,681.09	-250.13	62.67	257.16	0.00	0.00	0.00
2,711.91	0.00	0.00	2,693.00	-250.13	62.67	257.16	0.00	0.00	0.00
Yeso: 2693' TVD									
2,800.00	0.00	0.00	2,781.09	-250.13	62.67	257.16	0.00	0.00	0.00
2,900.00	0.00	0.00	2,881.09	-250.13	62.67	257.16	0.00	0.00	0.00
3,000.00	0.00	0.00	2,981.09	-250.13	62.67	257.16	0.00	0.00	0.00
3,100.00	0.00	0.00	3,081.09	-250.13	62.67	257.16	0.00	0.00	0.00
3,200.00	0.00	0.00	3,181.09	-250.13	62.67	257.16	0.00	0.00	0.00
3,300.00	0.00	0.00	3,281.09	-250.13	62.67	257.16	0.00	0.00	0.00
3,400.00	0.00	0.00	3,381.09	-250.13	62.67	257.16	0.00	0.00	0.00
3,500.00	0.00	0.00	3,481.09	-250.13	62.67	257.16	0.00	0.00	0.00
3,600.00	0.00	0.00	3,581.09	-250.13	62.67	257.16	0.00	0.00	0.00
3,700.00	0.00	0.00	3,681.09	-250.13	62.67	257.16	0.00	0.00	0.00
3,800.00	0.00	0.00	3,781.09	-250.13	62.67	257.16	0.00	0.00	0.00
3,900.00	0.00	0.00	3,881.09	-250.13	62.67	257.16	0.00	0.00	0.00
4,000.00	0.00	0.00	3,981.09	-250.13	62.67	257.16	0.00	0.00	0.00

Database:	Childress	**Local Co-ordinate Reference:**	Well Simon A 5 M Federal #2
Company:	Lime Rock Energy	**TVD Reference:**	RKB = 13.4' @ 3470.20usft (Original Well Elev)
Project:	Eddy County, NM	**MD Reference:**	RKB = 13.4' @ 3470.20usft (Original Well Elev)
Site:	Simon A 5 M Federal #2	**North Reference:**	True
Well:	Simon A 5 M Federal #2	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,100.00	0.00	0.00	4,081.09	-250.13	62.67	257.16	0.00	0.00	0.00
4,200.00	0.00	0.00	4,181.09	-250.13	62.67	257.16	0.00	0.00	0.00
4,300.00	0.00	0.00	4,281.09	-250.13	62.67	257.16	0.00	0.00	0.00
4,400.00	0.00	0.00	4,381.09	-250.13	62.67	257.16	0.00	0.00	0.00
4,500.00	0.00	0.00	4,481.09	-250.13	62.67	257.16	0.00	0.00	0.00
4,600.00	0.00	0.00	4,581.09	-250.13	62.67	257.16	0.00	0.00	0.00
4,700.00	0.00	0.00	4,681.09	-250.13	62.67	257.16	0.00	0.00	0.00
4,800.00	0.00	0.00	4,781.09	-250.13	62.67	257.16	0.00	0.00	0.00
4,900.00	0.00	0.00	4,881.09	-250.13	62.67	257.16	0.00	0.00	0.00
4,918.91	0.00	0.00	4,900.00	-250.13	62.67	257.16	0.00	0.00	0.00
Simon A 5 M Federal #2: PBHL									

Design Targets

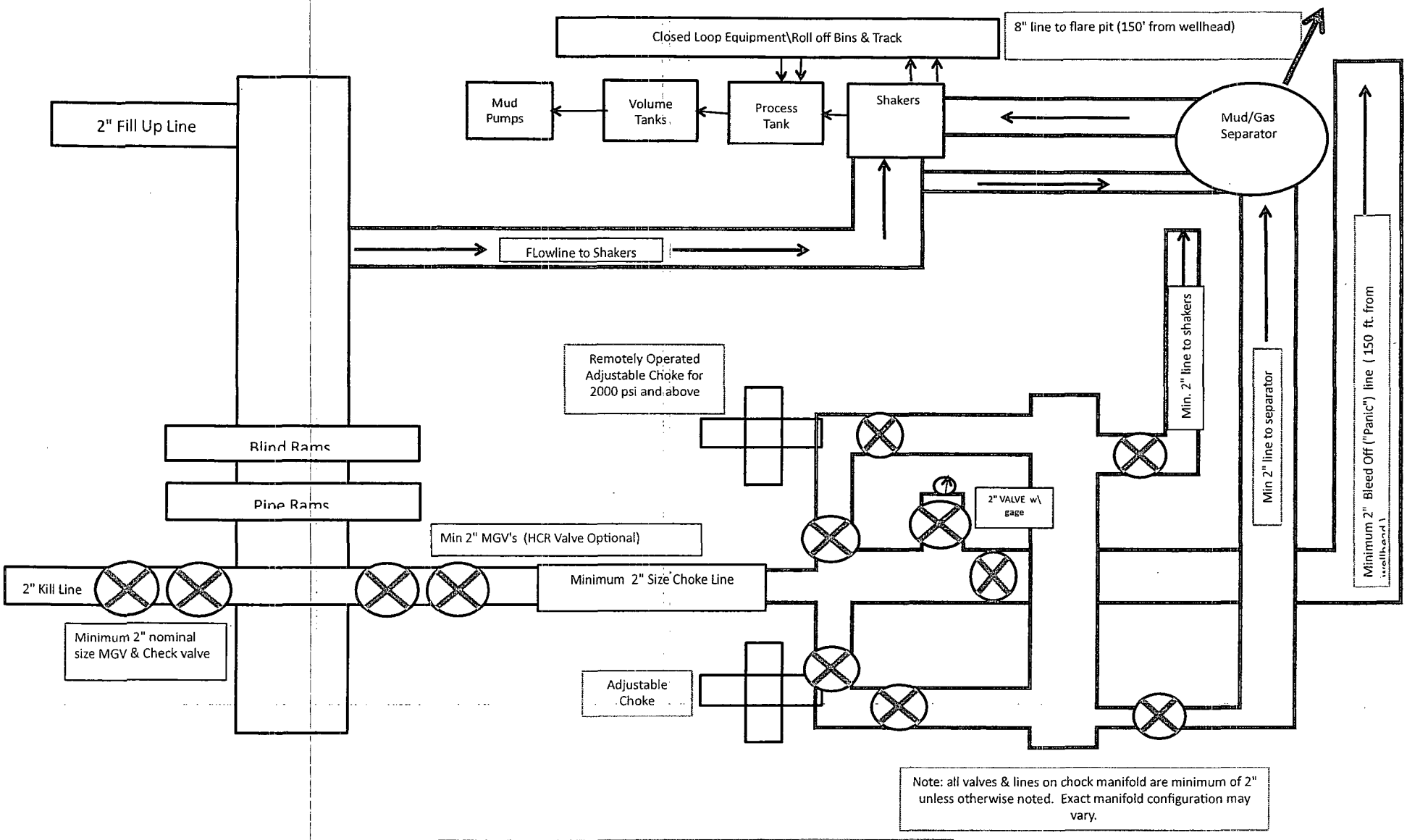
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Simon A 5 M Federal #2 - plan misses target center by 295.06usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Rectangle (sides W30.00 H30.00 D0.00)	0.00	0.00	0.00	-280.13	92.67	643,961.31	508,584.32	32° 46' 13.219 N	104° 18' 19.460 W
Simon A 5 M Federal #2 - plan hits target center - Point	0.00	0.00	4,900.00	-250.13	62.67	643,991.30	508,554.31	32° 46' 13.516 N	104° 18' 19.811 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
350.00	350.00	8-5/8"	8-5/8	11

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,020.11	1,016.00	Grayburg: 1016' TVD		0.00	
1,233.92	1,227.00	San Andres: 1227' TVD		0.00	
2,560.91	2,542.00	Glorieta: 2542' TVD		0.00	
2,711.91	2,693.00	Yeso: 2693' TVD		0.00	



Note: all valves & lines on chock manifold are minimum of 2" unless otherwise noted. Exact manifold configuration may vary.

11" Minimum 2000 psi BOP and Minimum 2000 psi BOPE System Schematic W/ Closed Loop System Equipment

Lime Rock Resources II-A, L.P.

Simon A 5 M Federal 2 well

Section 5, T. 18 S., R. 27 E., Eddy County, NM

Design: Closed Loop System with roll-off steel bins (pits)

CRI/HOBBS will supply (2) bins (100 bbl) volume, rails and transportation relating to the Close Loop System. Specification of the Closed Loop System is attached.

Contacts: Gary Wallace (432) 638-4076 Cell (575) 393-1079 Office

Scomi Oil Tool: Supervisor – Armando Soto (432) 553-7979 Hobbs, NM

Monitoring 24 Hour service

Equipment:
- Centrifuges – Derrick Brand
- Rig Shakers – Brandt Brand
- D-watering Unit
- Air pumps on location for immediate remediation process
- Layout of Close Loop System with bins, centrifuges and shakers attached.

Cuttings and associated liquids will be hauled to a State regulated third party disposal site (CRI or Controlled Recovery, Inc.). The disposal site permit is DFP = #R9166.

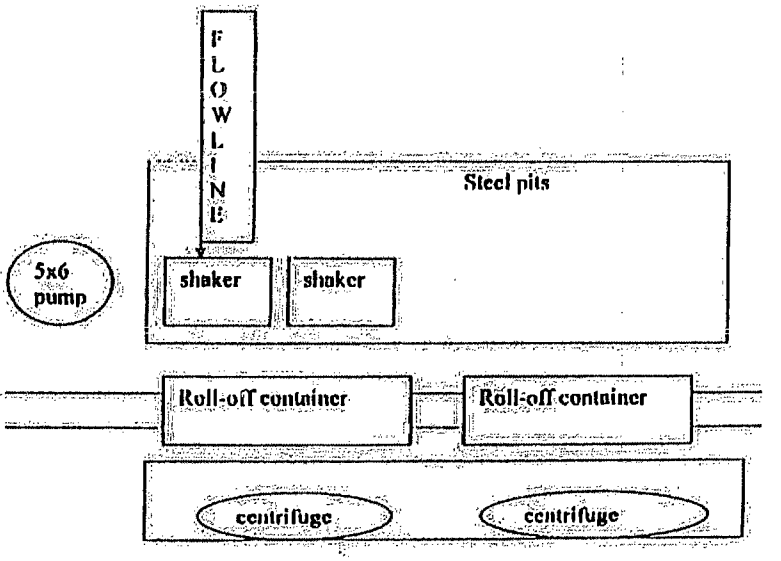
- 2- (250 bbl) tanks to hold fluid
- 2-CRI bins with track system
- 1-500 bbl frac tanks with fresh water
- 1-500 bbl frac tanks for brine water

Operations:

Closed Loop System equipment will be inspected daily by each tour and any necessary maintenance performed. Any leak in system will be repaired and/or contained immediately. OCD will be notified within 48 hours of any spill. Remediation process will start immediately.

Closure:

During drilling operations all liquids, drilling fluids and cuttings will be hauled off via CRI equipment to Disposal Facility Permit NM-01-0006.



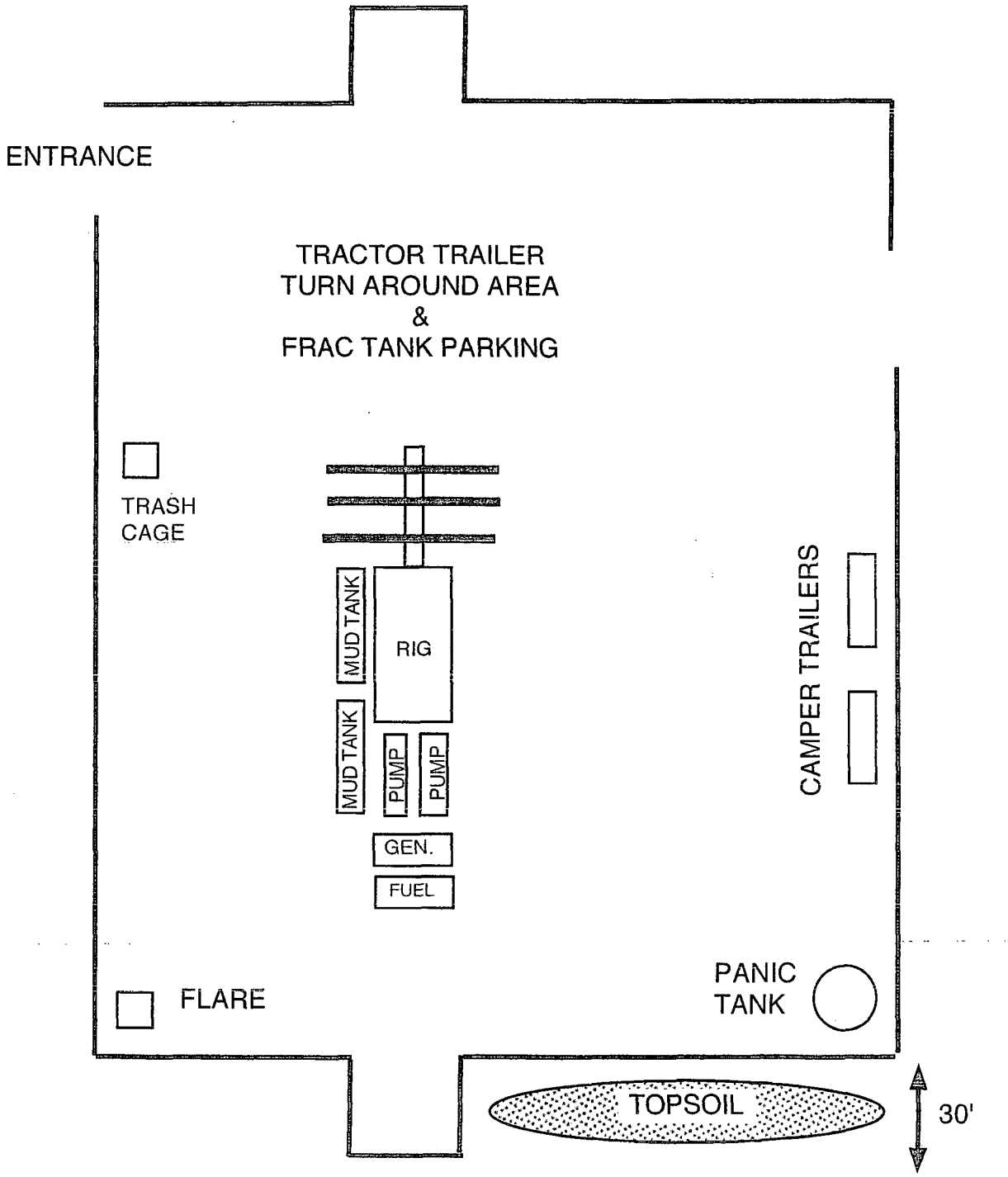
This will be maintained by 24 hour solids control personnel that stay on location.

TOMMY WILSON
CLS
CLOSED LOOP SPECIALTY
Office: 575.746.1689 Cell: 575.748.6367

Lime Rock's
Simon A 5 M Federal 2

1" = 40'

NORTH



PERMITS WEST, INC.
PROVIDING PERMITS for LAND USERS

Hydrogen Sulfide Drilling Plan Summary

A. All personnel shall receive proper H2S training in accordance with Onshore Order 6 III.C.3.a.

B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.

C. Required Emergency Equipment:

- Well control equipment
  a. Flare line 150' from wellhead to be ignited by flare gun.
  b. Choke manifold with a remotely operated choke.
  c. Mud/gas separator

- Protective equipment for essential personnel.

  Breathing apparatus:
  a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
  b. Work/Escape packs —4 packs shall be stored on the rig floor and contain sufficiently long air hoses as to not to restrict work activity.
  c. Emergency Escape Packs —4 packs shall be stored in the doghouse for emergency evacuation.

  Auxiliary Rescue Equipment:
  a. Stretcher
  b. Two OSHA full body harness
  c. 100 ft 5/8 inch OSHA approved rope
  d. 1-20# class ABC fire extinguisher

- H2S detection and monitoring equipment:
  The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.
  (Gas sample tubes will be stored in the safety trailer)

- Visual warning systems.
  a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
  b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
  c. Two wind socks will be placed in strategic locations, visible from all angles.

- Mud program:
  The mud program has been designed to minimize the volume of H2S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H2S bearing zones.

- Metallurgy:
  a. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.
  b. All elastomers used for packing and seals shall be H2S trim.

- Communication:
  Communication will be via two way radio in emergency and company vehicles. Cell phones and land lines where available.

H2S CONTINGENCY DRILLING PLAN EMERGENCY CONTACTS

Company Offices -	Lime Rock Houston Office	713·292·9510
	Answering Service(After Hours)	713·292-9555
	Artesia, NM Office	575-748-9724
	Roswell, NM	575-623-8424

KEY PERSONNEL					
Name	**Title**	**Location**	**Office #**	**Cell #**	**Home #**
MIKE LOUDERMILK	OPERATIONS MANAGER	HOUSTON	713-292-9526	832-331-7367	SAME AS CELL
SPENCER COX	PRODUCTION ENGINEER	HOUSTON	713-292-9528	432-254-5140	SAME AS CELL
ERIC MCCLUSKY	PRODUCTION ENGINEER	HOUSTON	713-360-5714	405-821-0534	832-491-3079
JERRY SMITH	ASSISTANT PRODUCTION SUPERVISOR	ARTESIA	575-748-9724	505-918-0556	575-746-2478
MICHAEL BARRETT	PRODUCTION SUPERVISOR	ROSWELL	575-623-8424	505-353-2644	575-623-4707
DALE KENNARD	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	575-420-1651	NA
GARY MCCELLAND	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	903-503-8997	NA
BRAD TATE	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	575-441-1966	NA
DAVE WILLIAMSON	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	575-308-9980	NA

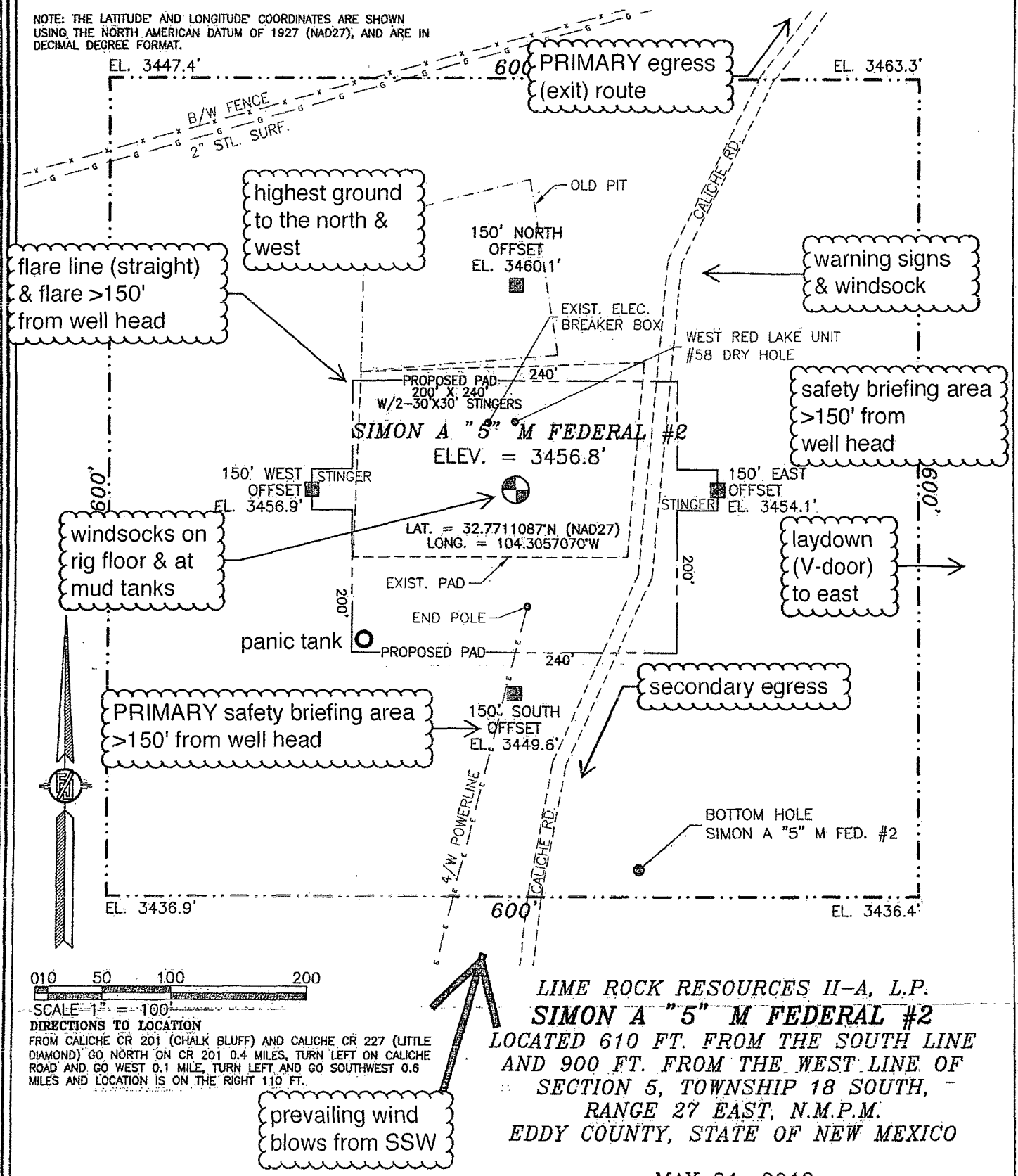
Agency Call List		
City	Agency or Office	Telephone Number
Artesia	Ambulance	911
Artesia	State Police	575-746-2703
Artesia	Sheriff's Office	575-746-9888
Artesia	City Police	575-746-2703
Artesia	Fire Department	575-746-2701
Artesia	Local Emergency Planning Committee	575-746-2122
Artesia	New Mexico OCD District II	575-748-1283
Carlsbad	Ambulance	911
Carlsbad	State Police	575-885-3137
Carlsbad	Sheriff's Office	575-887-7551
Carlsbad	City Police	575-885-2111
Carlsbad	Fire Department	575-885-2111
Carlsbad	Local Emergency Planning Committee	575-887-3798
Carlsbad	US DOI Bureau of Land Management	575-887-6544
State Wide	New Mexico Emergency Response Commission ("NMERC")	505-476-9600
State Wide	NMERC 24 hour Number	505-827-9126
State Wide	New Mexico State Emergency Operations Center	505-476-9635
National	National Emergency Response Center (Washington, D.C.)	800-424-8802

H2S CONTINGENCY DRILLING PLAN EMERGENCY CONTACTS

Emergency Services				
Name	**Service**	**Location**	**Telephone Number**	**Alternate Number**
Boots & Coots International Well Control	Well Control	Houston / Odessa	1-800-256-9688	281-931-8884
Cudd Pressure Control	Well Control & Pumping	Odessa	915-699-0139	915-563-3356
Baker Hughes Inc.	Pumping Service	Artesia, Hobbs and Odessa	575-746-2757	SAME
Total Safety	Safety Equipment and Personnel	Artesia	575-746-2847	SAME
Cutter Oilfield Services	Drilling Systems Equipment	Midland	432-488-6707	SAME
Assurance Fire & Safety	Safety Equipment and Personnel	Artesia	575-396-9702	575-441-2224
Flight for Life	Emergency Helicopter Evacuation	Lubbock	806-743-9911	SAME
Aerocare	Emergency Helicopter Evacuation	Lubbock	806-747-8923	SAME
Med Flight Air Ambulance	Emergency Helicopter Evacuation	Albuquerque	505-842-4433	SAME
Artesia General Hospital	Emergency Medical Care	Artesia	575-748-3333	702 North 13 Street

SECTION 5, TOWNSHIP 18 SOUTH, RANGE 27 EAST, EDDY COUNTY, STATE OF NEW MEXICO

H2S PAGE 6



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM CALICHE CR 201 (CHALK BLUFF) AND CALICHE CR 227 (LITTLE DIAMOND) GO NORTH ON CR 201 0.4 MILES, TURN LEFT ON CALICHE ROAD AND GO WEST 0.1 MILE, TURN LEFT AND GO SOUTHWEST 0.6 MILES AND LOCATION IS ON THE RIGHT 110 FT.

LIME ROCK RESOURCES II-A, L.P.

SIMON A "5" M FEDERAL #2

LOCATED 610 FT. FROM THE SOUTH LINE AND 900 FT. FROM THE WEST LINE OF SECTION 5, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO

MAY 21, 2012

SURVEY NO. 847

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

LIME ROCK RESOURCES

Simon A 5 M Federal #2
H_2S Contingency Plan:
1 Mile Radius Map

Section 5, Township 18S, Range 27E
Eddy County, New Mexico

Simon A 5 M Federal #2

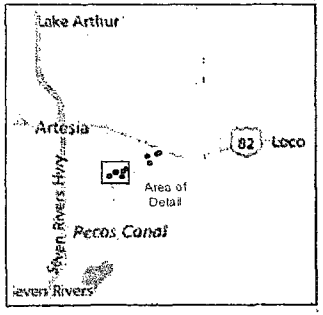
1:13,500
0 0.125 0.25 0.5
Miles

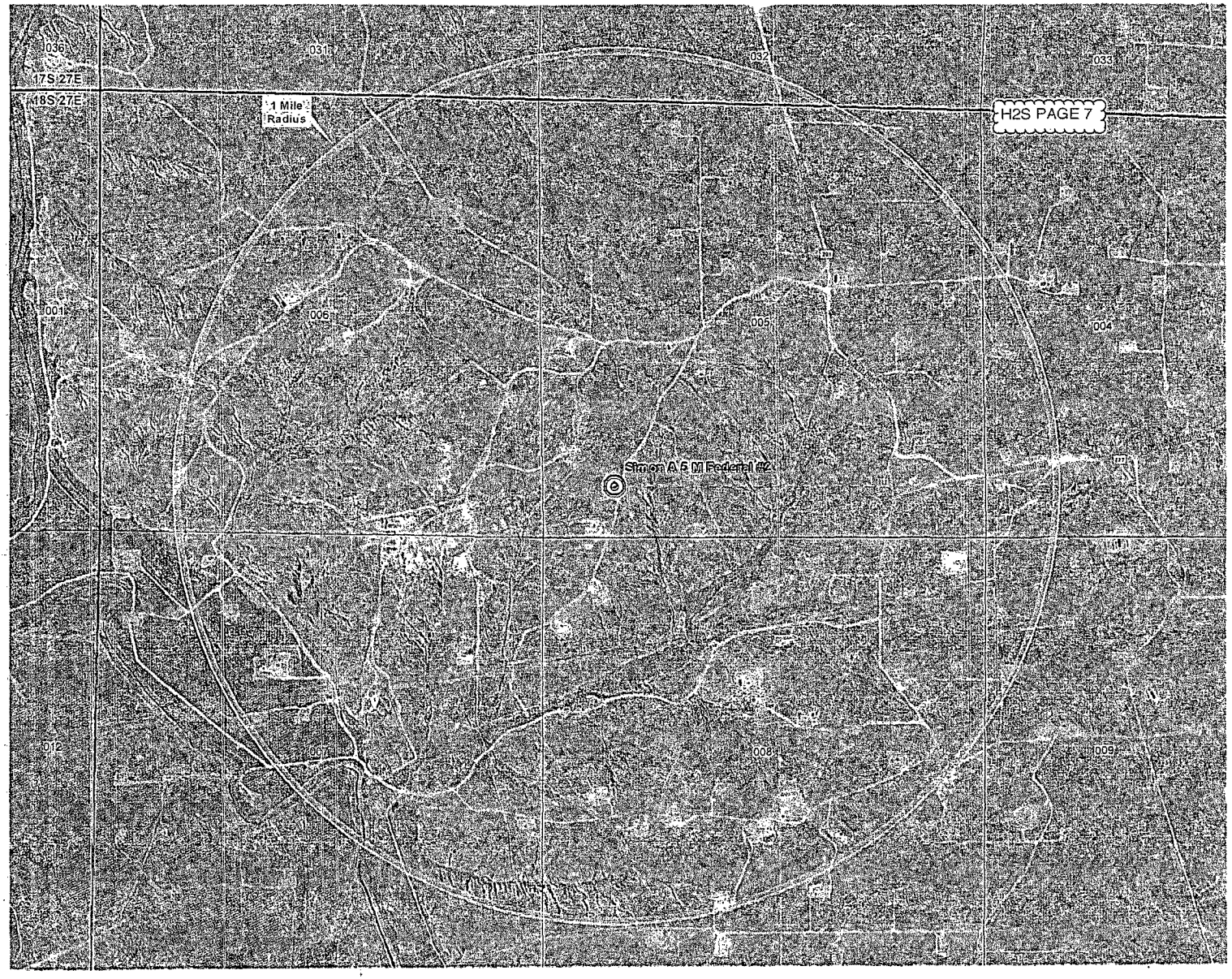
N

NAD 1927 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST, INC.

Prepared by Permits West, Inc., April 23, 2013
for Limerock Resources II A, L.P.





LIME ROCK RESOURCES

Simon A 5 M Federal #2
H_2S Contingency Plan:
2 Mile Radius Map

Section 5, Township 18S, Range 27E
Eddy County, New Mexico

Simon A 5 M Federal #2

1:27,000
0 0.25 0.5 1
Miles

N

NAD 1927 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST, Inc.

Prepared by Permits West, Inc., April 23, 2013
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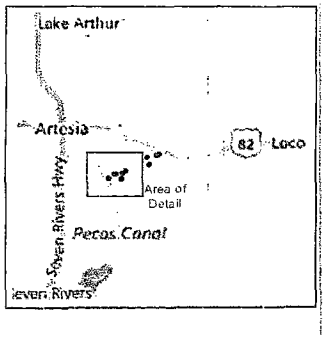
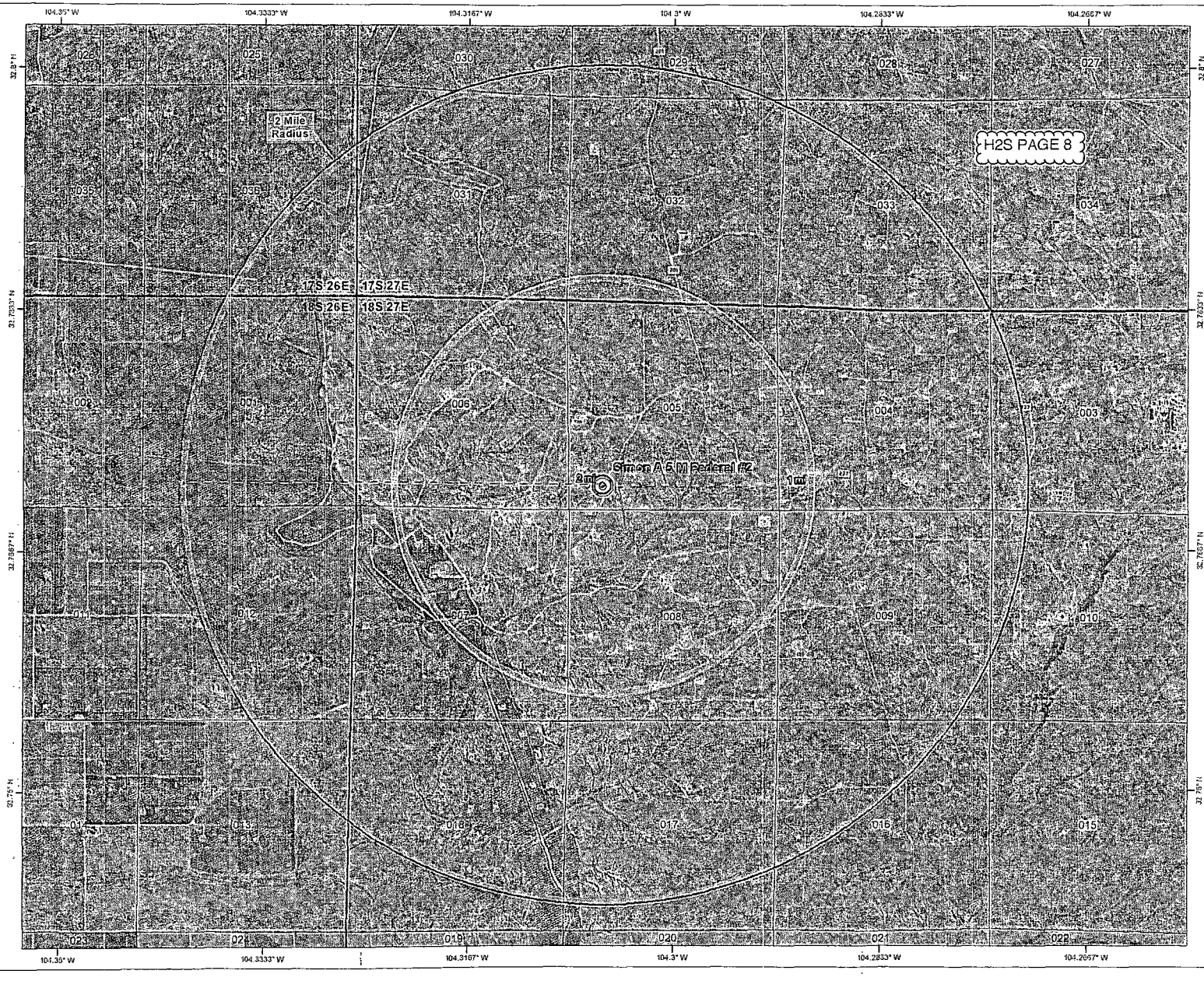
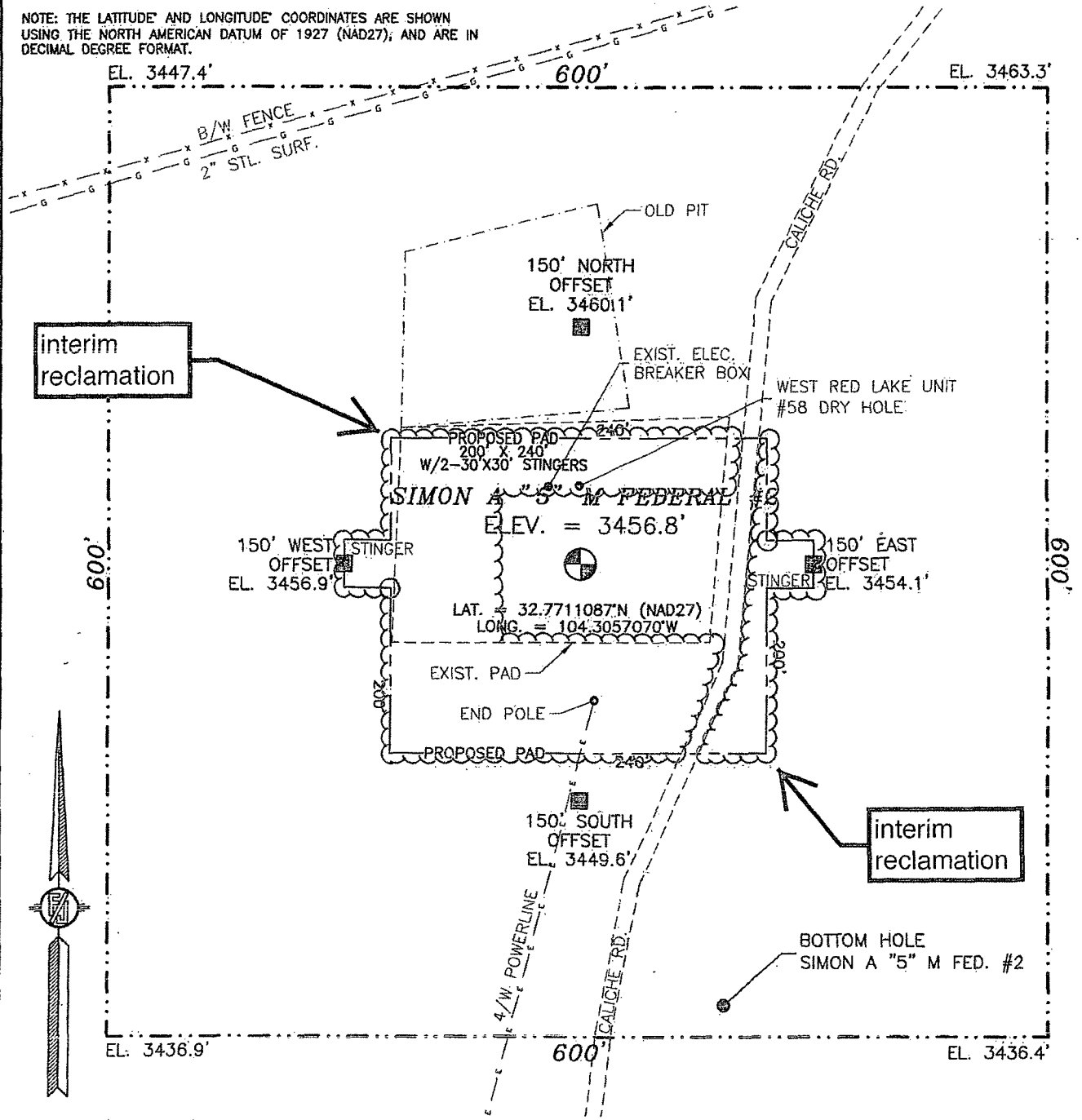




SECTION 5, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO



DIRECTIONS TO LOCATION

FROM CALICHE CR 201 (CHALK BLUFF) AND CALICHE CR 227 (LITTLE DIAMOND) GO NORTH ON CR 201 0.4 MILES, TURN LEFT ON CALICHE ROAD AND GO WEST 0.1 MILE, TURN LEFT AND GO SOUTHWEST 0.6 MILES AND LOCATION IS ON THE RIGHT 110 FT.

LIME ROCK RESOURCES II-A, L.P.

SIMON A "5" M FEDERAL #2

LOCATED 610 FT. FROM THE SOUTH LINE AND 900 FT. FROM THE WEST LINE OF SECTION 5, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

MAY 21, 2012

SURVEY NO. 847

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

Simon A 5 M Federal 2
SHL: 610' FSL & 900' FWL
BHL: 330' FSL & 990' FWL
Sec. 5, T. 18 S., R. 27 E., Eddy County, NM

Surface Use Plan

1. ROAD DIRECTIONS & DESCRIPTIONS (See MAPS 1 - 3)

From the center of Artesia...
Go East 5 miles on US 82 to the equivalent of Mile Post 112.5
Then turn right and go South 4 miles on paved then caliche County Road 201
Then turn right and go SW 1,875' on a caliche road
Then turn left and go SW 1,925' on a caliche road onto the proposed pad

Roads will be maintained to a standard at least equal to or better than their present condition.

This APD is also doubling as a plan of development for an accompanying BLM road right-of-way application. Application covers 20' x 125' (=0.06 acre) of existing caliche road in NESW 5-18s-27e.

2. ROAD TO BE BUILT OR UPGRADED

No new road is needed. Upgrading of the existing road will consist of filling potholes with caliche.

3. EXISTING WELLS (See MAP 2)

Existing oil, gas, injection, disposal, water, and P & A wells are within a mile.

4. PROPOSED PRODUCTION FACILITIES

Tentative plan is for off lease storage and sales at the Vandagriff 8 D Federal 4 battery. A right-of-way will be filed once plans are finalized.

5. WATER SUPPLY

Water will be trucked from private land in Riverside.

6. CONSTRUCTION MATERIALS & METHODS

NM One Call (1-800-321-ALERT) will be notified before construction starts. Lime Rock will remove a power pole and breaker box before construction starts. The little topsoil and brush will be stockpiled west of the pad. V door will be to the east. The existing road on the east side of the pad may be blocked while drilling. It leads only to Lime Rock wells. A closed loop drilling system will be used. Caliche will be bought and hauled from an existing approved caliche pit. Dirt contractor will be responsible for caliche.

7. WASTE DISPOSAL

All trash will be placed in a portable trash cage. It will be hauled to a county landfill. There will be no trash burning. Contents of the mud tanks will be hauled to state approved disposal sites. Human waste will be disposed of in chemical toilets and hauled to an approved dump station.

8. ANCILLARY FACILITIES

There will be no airstrip or camp. Camper trailers will be on location for the company man, tool pusher, or mud logger.

9. WELL SITE LAYOUT

See rig layout for depictions of the well pad, trash cage, access onto the location, parking, living facilities, and rig orientation.

10. RECLAMATION

Interim reclamation will consist of reclaiming the stringer footprints and all but a ≈90' x ≈90' area open-ended area around the wellhead. Disturbed areas will be contoured to a natural shape and no steeper than 3:1. Soil and brush will be evenly spread over disturbed areas. Seeded areas will be ripped or harrowed. A BLM approved seed mix will be sown in a BLM approved manner. Enough stockpiled topsoil will be retained to cover the remainder of the pad when the well is plugged. Once the well is plugged, then the remainder of the pad will be similarly reclaimed. Noxious weeds will be controlled.

11. SURFACE OWNER

All construction will be on BLM.

12. OTHER INFORMATION

On site inspection was held with John Fast (BLM) on March 14, 2012.

Boone Archaeology filed its report (125517) on October 24, 2012.

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	LIME ROCK RESOURCES II A L.P
LEASE NO.:	LC 055383A
WELL NAME & NO.:	2 SIMON A 5 N FEDERAL
SURFACE HOLE FOOTAGE:	610' FSL & 900' FWL
BOTTOM HOLE FOOTAGE	330' FSL & 990' FWL (Sec. 24)
LOCATION:	Section 23, T. 23 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:
The pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the pad. All sides will be bermed.

Tank Battery Liners and Berms:
Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For

examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

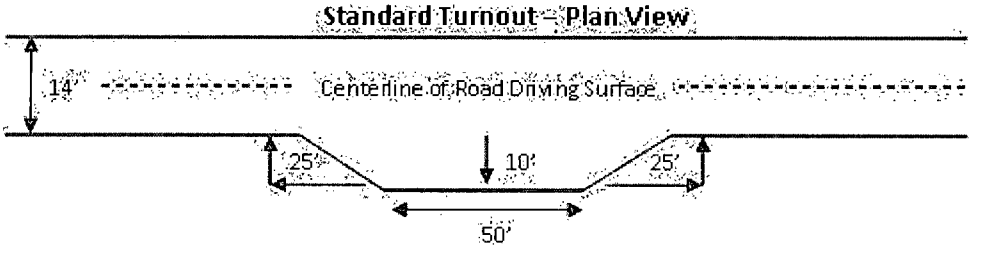
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

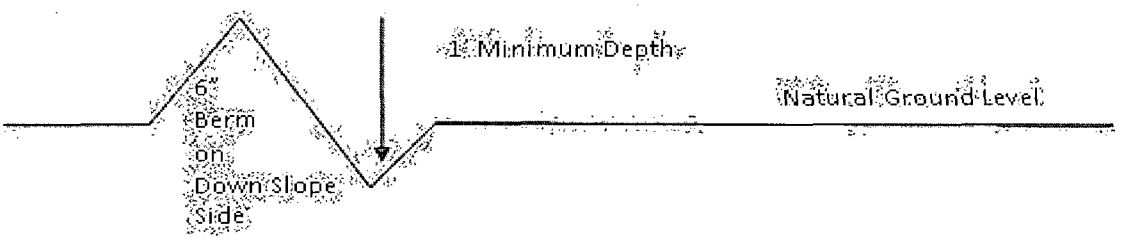


Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

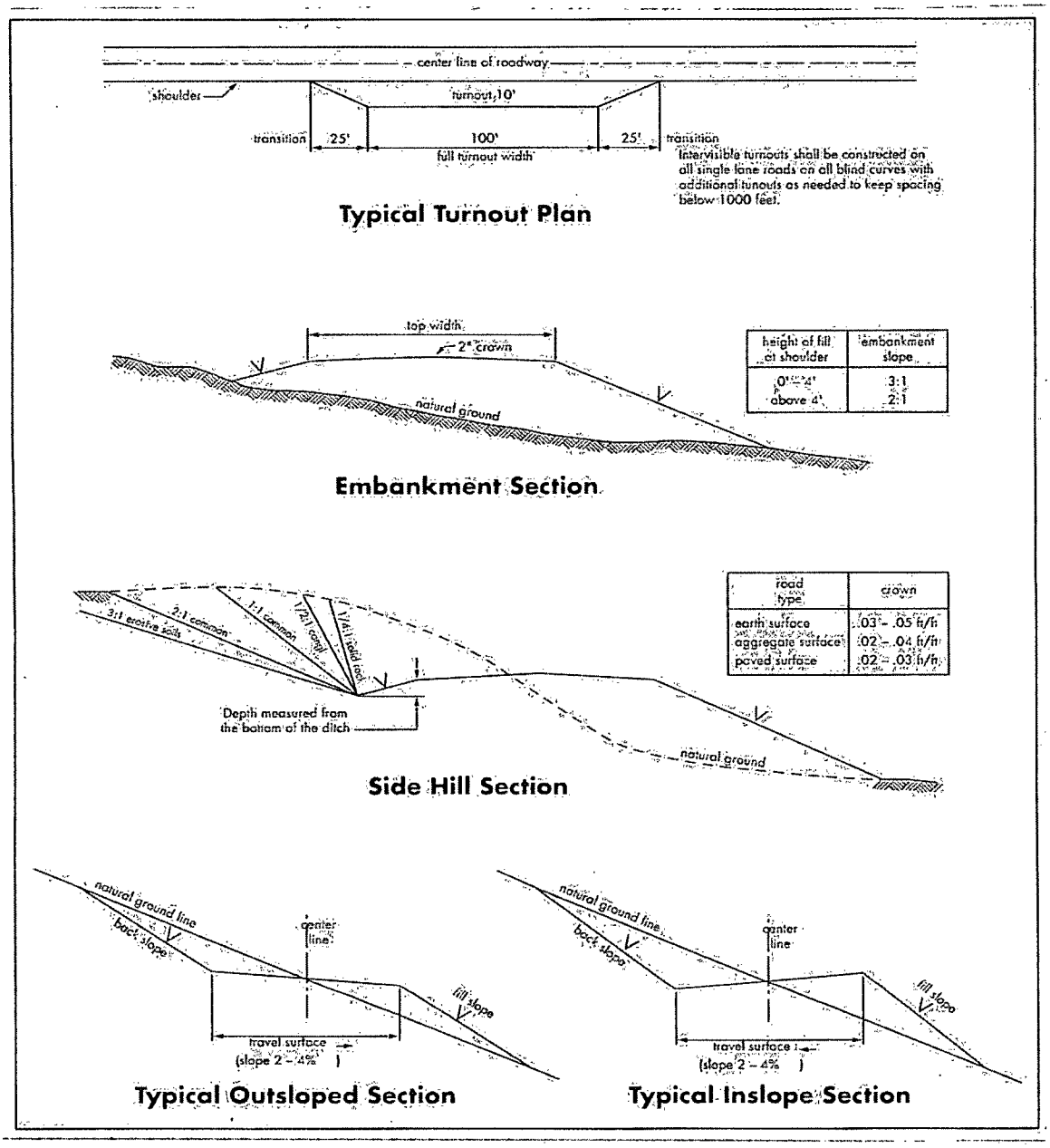
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Queen** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. **The record of the drilling rate along with the GR/N well log run from TD to surface shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

HIGH CAVE/KARST – OPERATOR HAS PROPOSED A CONTINGENCY CASING IF LOST CIRCULATION OCCURS WHILE DRILLING THE SURFACE HOLE. IF LOST CIRCULATION OCCURS WHILE DRILLING THE 7-7/8" HOLE, THE CEMENT PROGRAM FOR THE 5-1/2" CASING WILL NEED TO BE MODIFIED AND THE BLM IS TO BE CONTACTED PRIOR TO RUNNING THE CASING. A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH THEREFORE, ONE INCH OPERATIONS WILL NOT BE PERMITTED. A DV TOOL WILL BE REQUIRED

There is a potential for shallow oil production within the Yates and Seven Rivers Formations.
Possibility for water and brine flows in the Salado and Artesia Groups.
Possible lost circulation in the Grayburg and San Andres formations.

Contingency Surface Casing Plan:

1. The **13-3/8** inch **contingency surface casing** shall be set at approximately **390** feet and cemented to the surface. **(If contingency casing is used the surface hole will be reamed to 375 and the 8-5/8" casing will be set 50 feet below contingency casing.)**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Casing Plan without Contingency:

2. The **8-5/8** inch surface casing shall be set at approximately **440** feet and cemented to the surface.

   a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

   b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

   c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

   d. If cement falls back, remedial cementing will be done prior to drilling out that string.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi. Operator is approved to test against the casing for the contingency plan.

3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.

    d. The results of the test shall be reported to the appropriate BLM office.

    e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

    f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

CRW 082713

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures
Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the

largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by

drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 4, for Gypsum Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Alkali Sacaton (Sporobolus airoides)	1.0
DWS Four-wing saltbush (Atriplex canescens)	5.0

DWS: DeWinged Seed

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed