AFF-16284

Form 3160-3
(March 2012)

OCD Artesia
NM OIL CONSERVATION
ARTESIA DISTRICT
MAY 09 2016
RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NMNM-557370	
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. EAGLE 34 J FEDERAL 81
2. Name of Operator LIME ROCK RESOURCES II-A, L. P.	9. API Well No. 30-015- 43772
3a. Address 1111 BAGBY ST., 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
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface 1790' FSL & 1650' FEL; At proposed prod. zone 1670' FSL & 1650' FEL	11. Sec., T. R. M. or Blk. and Survey or Area NWSE 34-17S-27E
14. Distance in miles and direction from nearest town or post office* 8 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 drlg. unit line, if any) SHL: 330' BHL: 330'	16. No. of acres in lease 720 / 17. Spacing Unit dedicated to this well NWSE
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL 100' (Eagle 34 J 20) BHL 20' (ditto)	19. Proposed Depth TVD = 5250' & MD = 5254' / 20. BLM/BIA Bond No. on file NMB-000797 & NMB-000817
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3,590.8' UNGRADED	22. Approximate date work will start* 03/10/2016 / 23. Estimated duration 1 MONTH

Cbed 15f

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 B. Wood	Name (Printed/Typed) BRIAN WOOD (PHONE: 505 466-8120)	Date 12/29/2015
Title CONSULTANT	(FAX: 505 466-9682)	
Approved by (Signature) /s/George MacDonell	Name (Printed/Typed)	Date MAY - 4 2016
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)

Roswell Controlled Water Basin

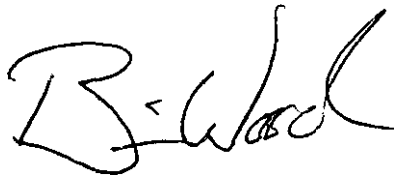
Must be in compliance with NMOCD Rule 5.9 prior to placing well on production

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

CERTIFICATION

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 29th day of December, 2015.



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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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 August 1, 2011
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- 43772	96836	Red Lake; Glorieta-Yeso Northeast

[4] Property Code	[5] Property Name	[6] Well Number
308956	EAGLE 34J FEDERAL	81

[7] OGRID No.	[8] Operator Name	[9] Elevation
277558	LIME ROCK RESOURCES II-A, L.P.	3590.8

[10] Surface Location

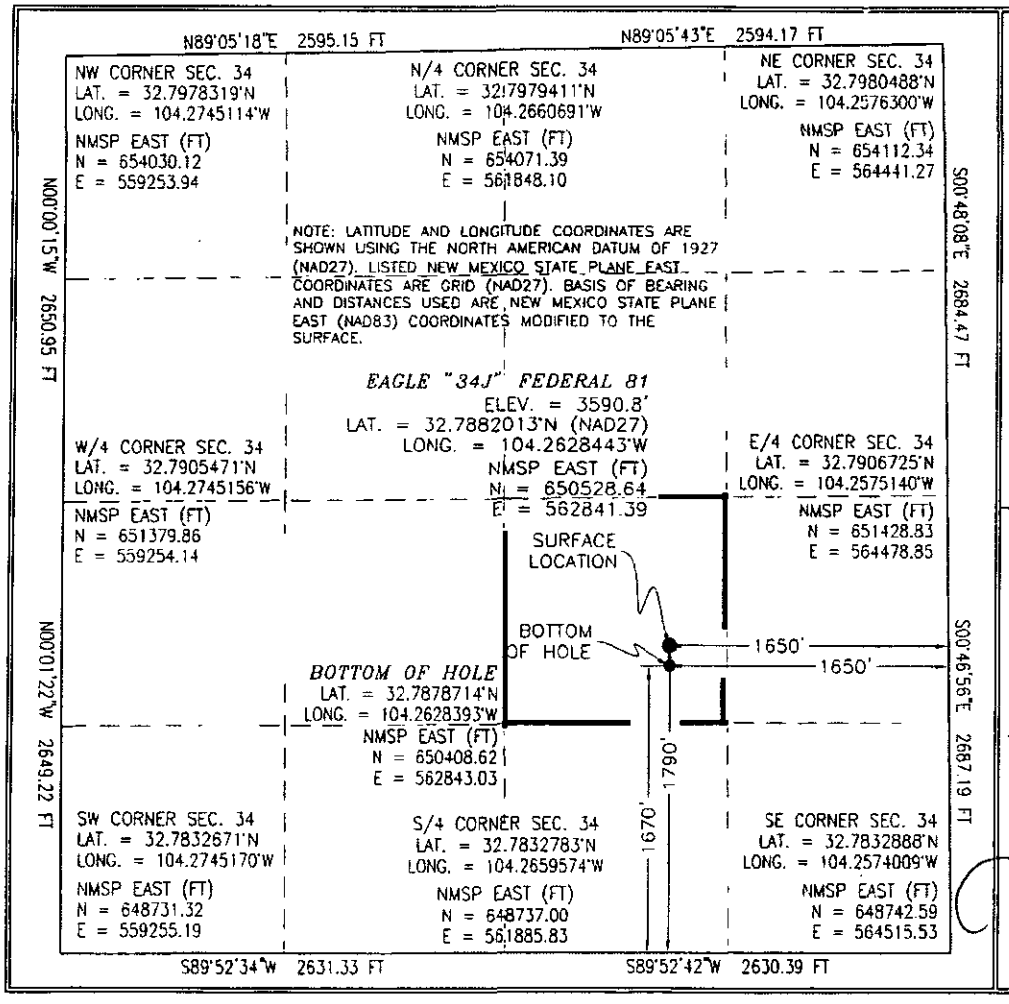
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	34	17 S	27 E		1790	SOUTH	1650	EAST	EDDY

[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
J	34	17 S	27 E		1670	SOUTH	1650	EAST	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.

12-29-15

Signature Date

Brian Wood

Printed Name

brian@permitswest.com

E-mail Address

[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.

APRIL 1, 2015

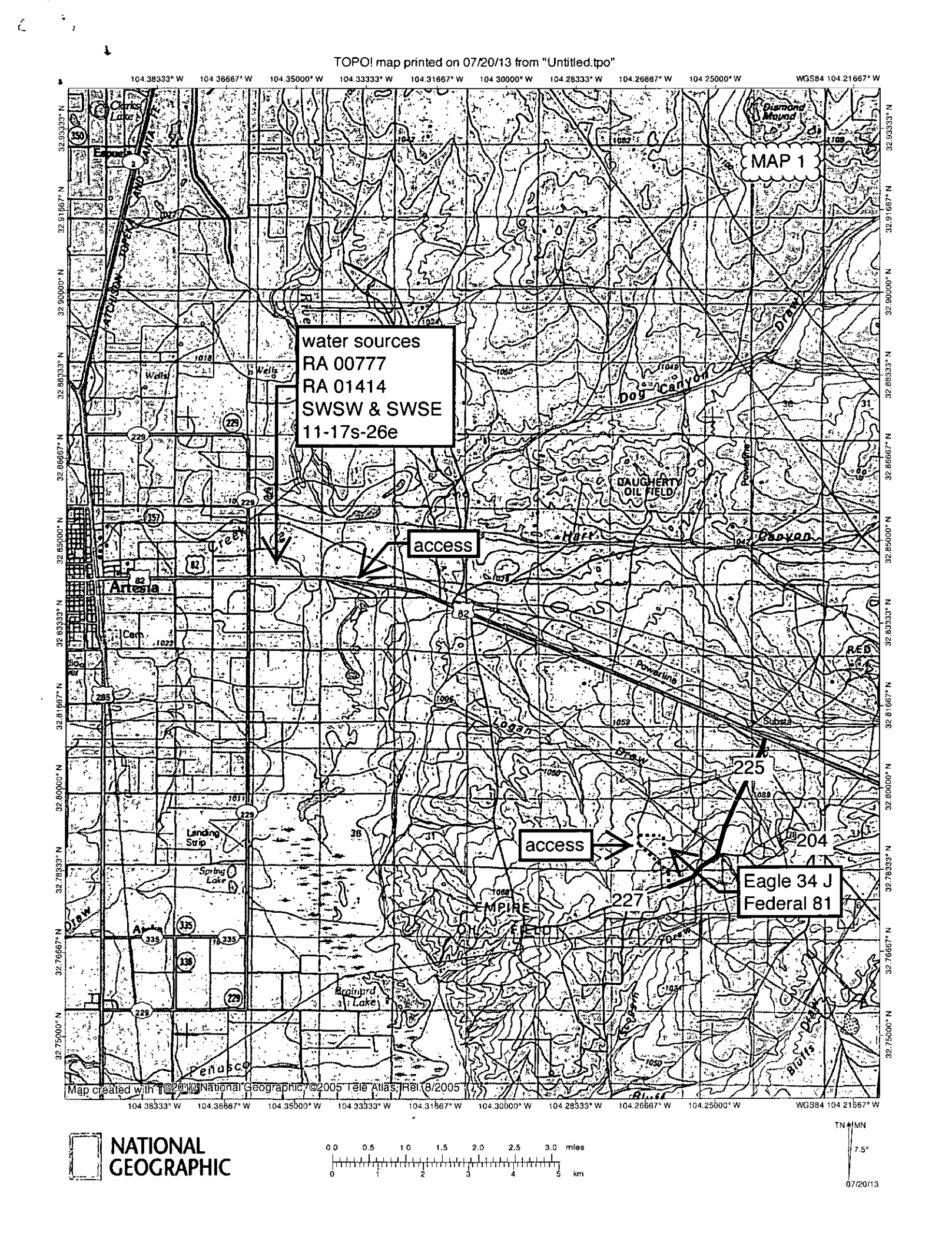
Date of Survey

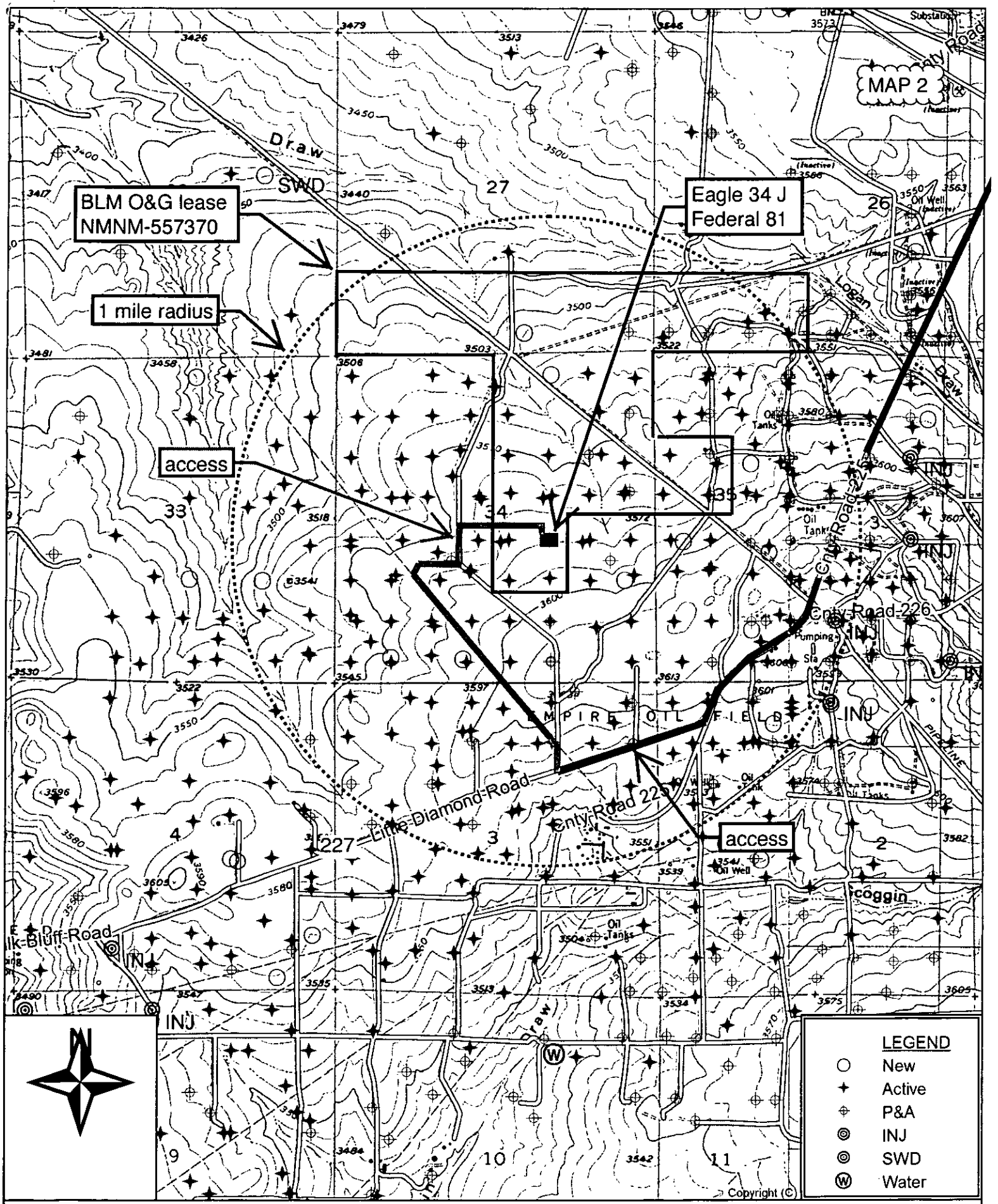
FILIMON F. JARAMILLO
NEW MEXICO
12797
REGISTERED PROFESSIONAL SURVEYOR

Signature and Seal of Professional Surveyor

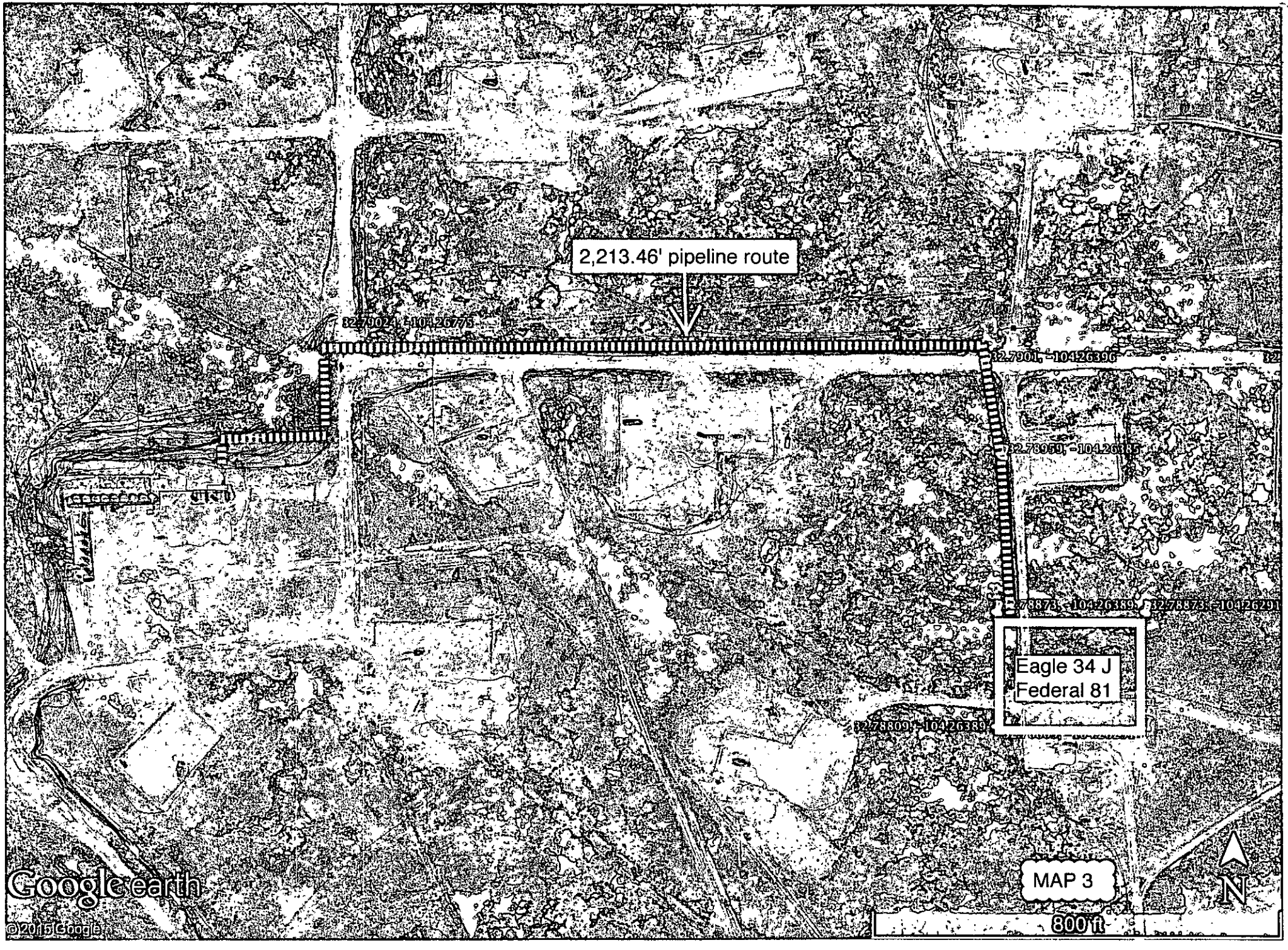
Certificate Number: FILIMON F. JARAMILLO, PLS 12797

SURVEY NO. 2346


TOPO! map printed on 07/20/13 from "Untitled.tpo"
MAP 1
water sources
RA 00777
RA 01414
SWSW & SWSE
11-17s-26e
access
access
Eagle 34 J
Federal 81
225
204
227
DAUGHERTY OIL FIELD
EMPIRE OIL FIELD
Artesia
Dog Canyon
Powerline
Logan Draw
Map created with TOPO! ©2003 National Geographic, ©2005 Tele Atlas, Rel. 8/2005
NATIONAL GEOGRAPHIC
07/20/13



Quad: SPRING LAKE
Scale: 1 inch = 2,000 ft.

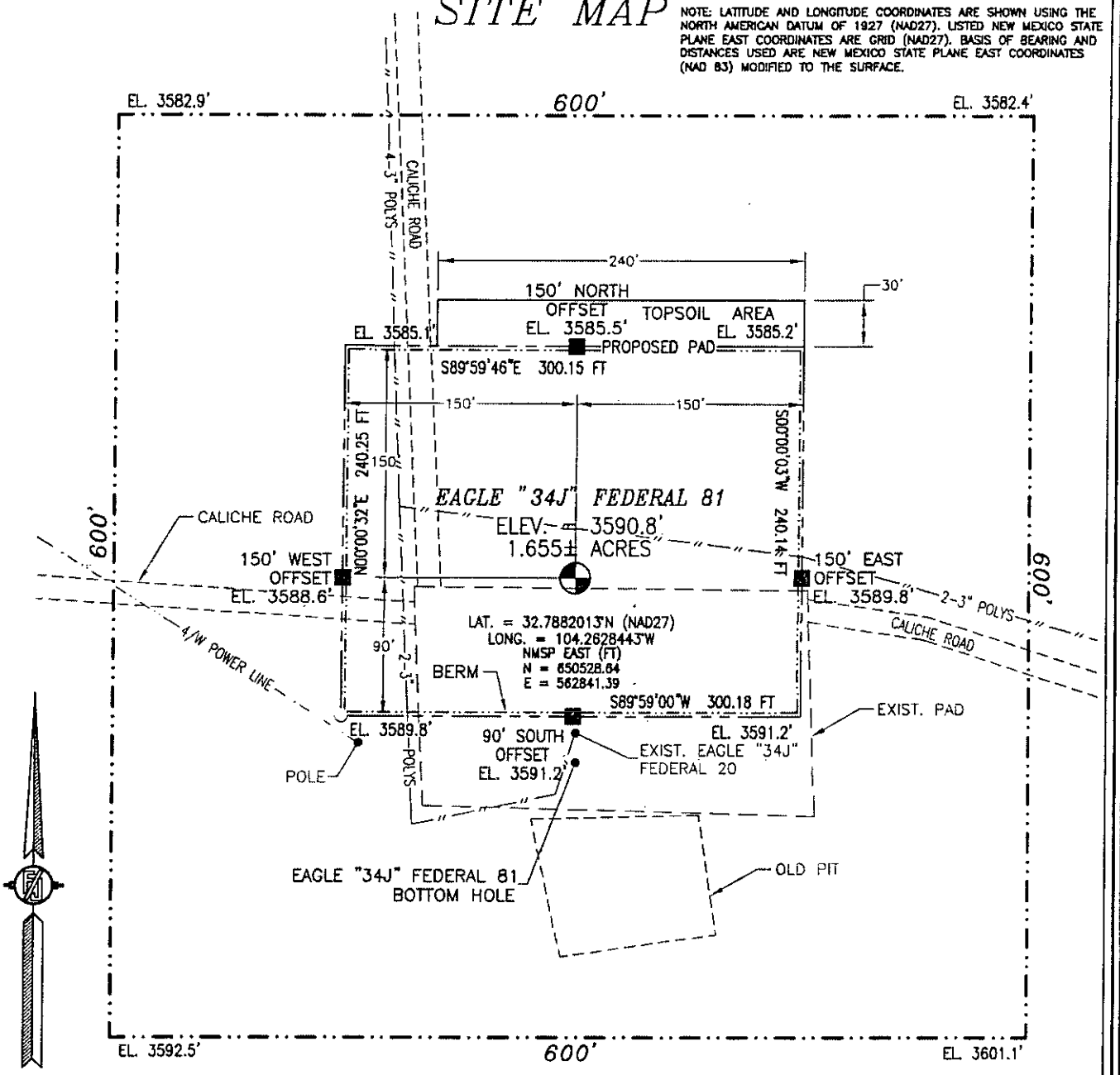

2,213.46' pipeline route
32.79024, -104.26775
32.7901, -104.26396
32.78959, -104.26385
32.78873, -104.26389
32.78873, -104.26291
32.78809, -104.26389
Eagle 34 J
Federal 81
MAP 3
800 ft
N
Google earth
©2015 Google

SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, EDDY COUNTY, STATE OF NEW MEXICO

MAP 4

SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1927 (NAD27). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD27). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES (NAD 83) MODIFIED TO THE SURFACE.



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM CR 225 (EMPIRE) AND CR 227 (LITTLE DIAMOND) GO SOUTHWEST ON CR 227 0.5 MILE, TURN RIGHT ON CALICHE ROAD AND GO NORTH 0.1 MILE, BEND LEFT AND GO NORTHWEST 0.7 MILE, TURN RIGHT AND GO EAST 0.11 MILE, TURN LEFT AND GO NORTH 0.1 MILE, TURN RIGHT AND GO EAST 0.25 MILE, TURN RIGHT AND GO SOUTH 660' AND LOCATION IS 94' ON THE LEFT (EAST).

LIME ROCK RESOURCES II-A, L.P.

EAGLE "34J" FEDERAL 81

LOCATED 1790 FT. FROM THE SOUTH LINE AND 1650 FT. FROM THE EAST LINE OF SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

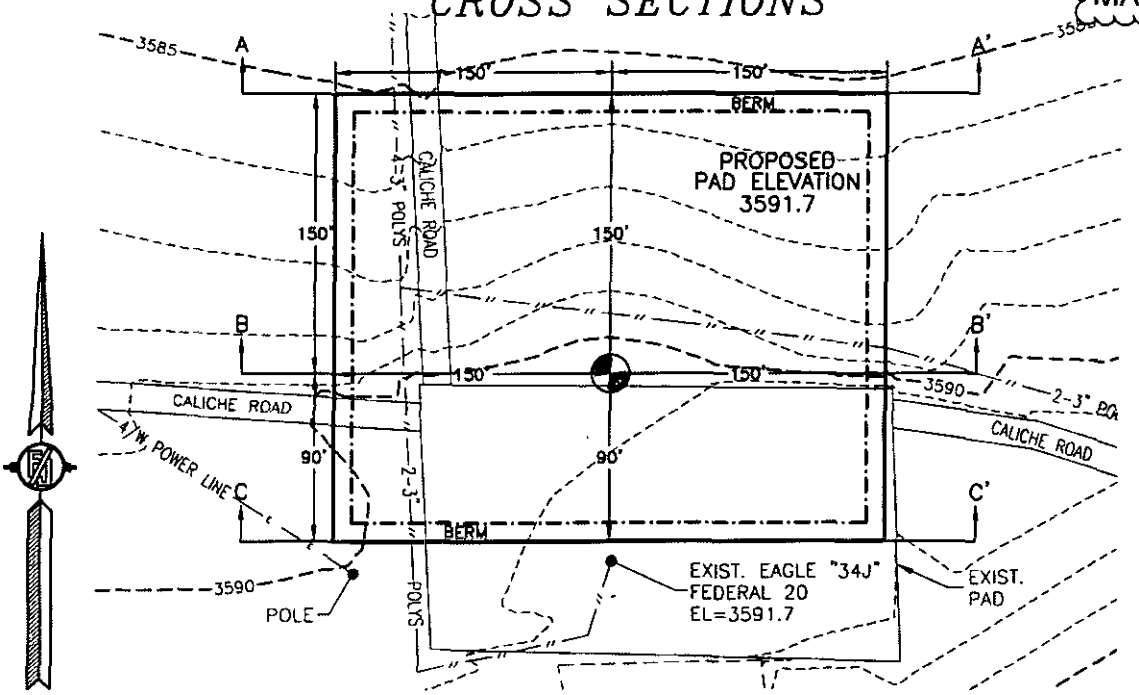
APRIL 1, 2015

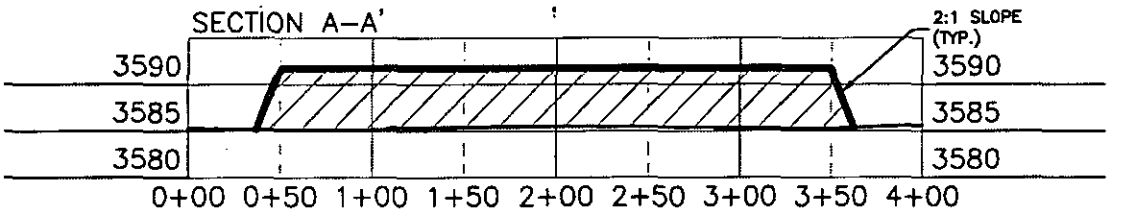
SURVEY NO. 2346

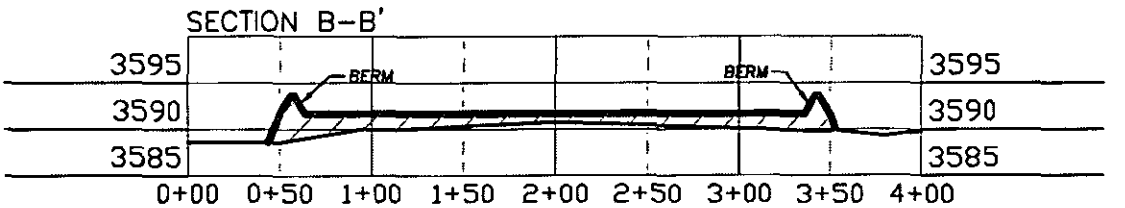
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

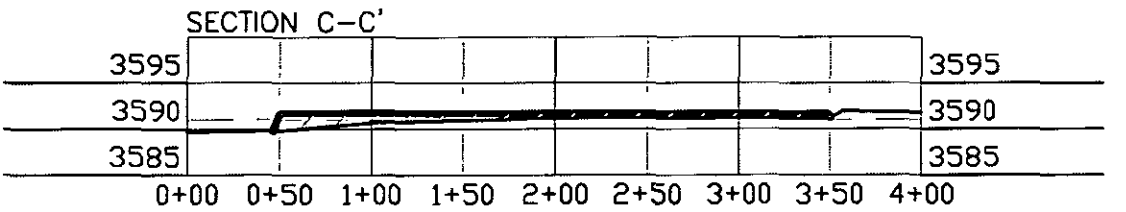
EAGLE "34J" FEDERAL 81
CROSS SECTIONS

MAP 4.1









LIME ROCK RESOURCES II-A, L.P.
EAGLE "34J" FEDERAL 81
LOCATED 1970 FT. FROM THE SOUTH LINE AND 1650 FT. FROM THE EAST LINE OF SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

0 10 50 100 200
SCALE 1" = 100' HORZ.
SCALE 1" = 20' VER.

CUT	FILL	NET
0 CU. YD	9370 CU. YD	9370 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

FEBRUARY 23, 2016

SURVEY NO. 2346A

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

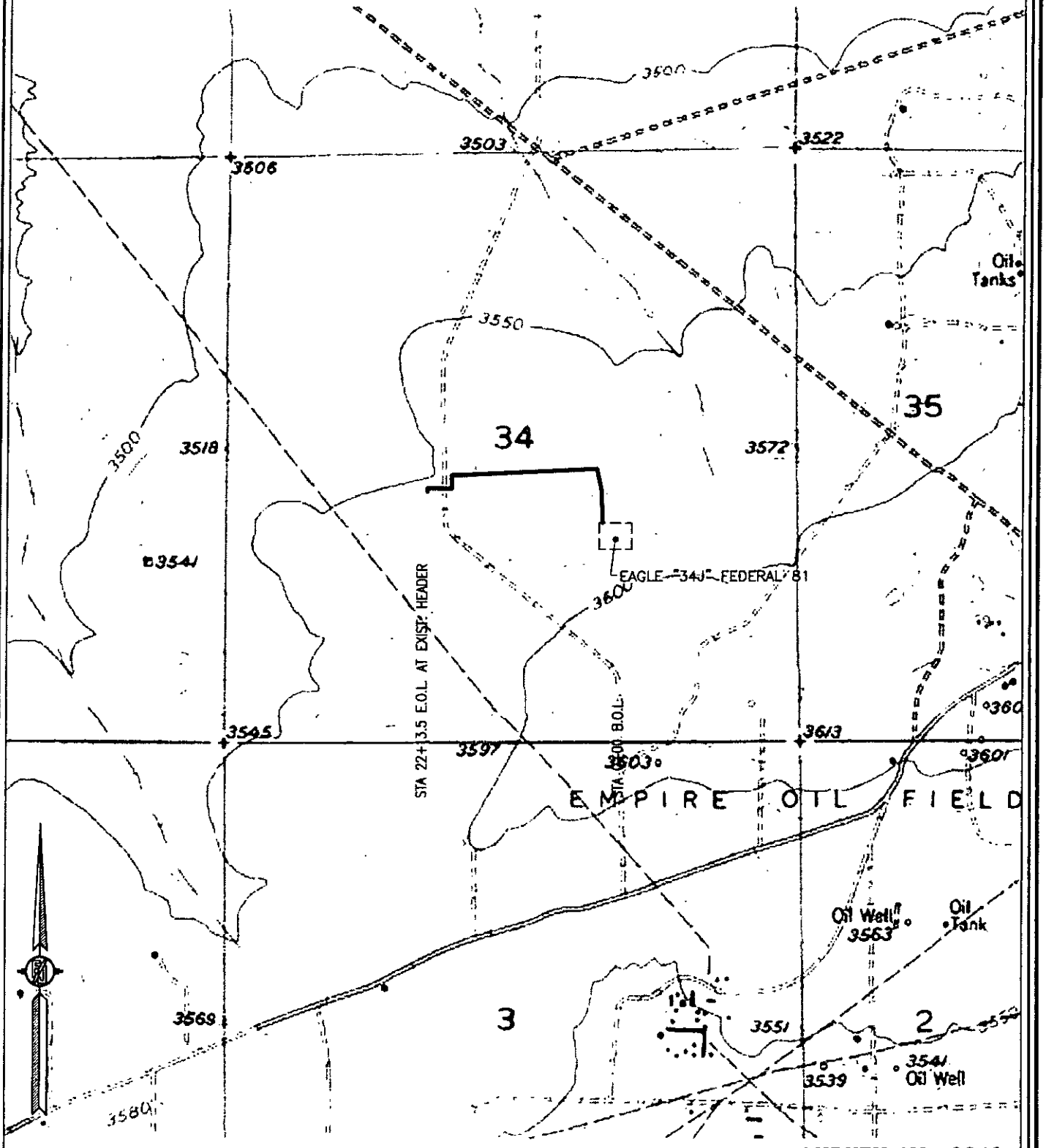
FLOWLINE PLAT

RIGHT-OF-WAY FOR TWO 3" SDR 7 POLY SURFACE LINES (1-GAS & 1-PRODUCTION) FROM THE EAGLE "34J" FEDERAL 81 TO AN EAGLE "33/34" FEDERAL BATTERY FIELD HEADER

MAP 5

LIME ROCK RESOURCES II-A, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
APRIL 1, 2015



SURVEY NO. 2346

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

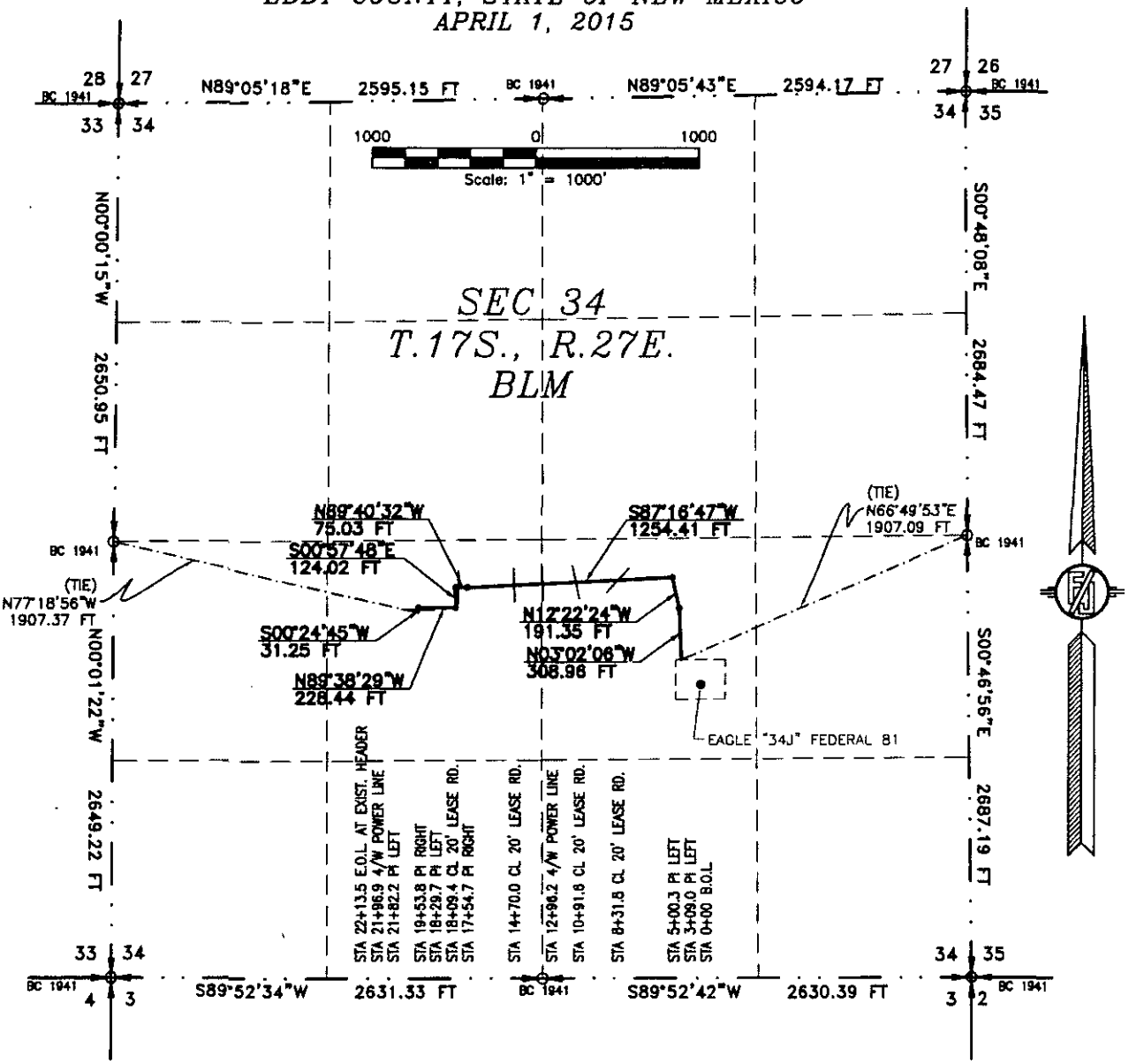
FLOWLINE PLAT

RIGHT-OF-WAY FOR TWO 3" SDR 7 POLY SURFACE LINES (1-GAS & 1-PRODUCTION) FROM THE EAGLE "34J" FEDERAL 81 TO AN EAGLE "33/34" FEDERAL BATTERY FIELD HEADER

MAP 6

LIME ROCK RESOURCES II-A, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
APRIL 1, 2015



GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST MODIFIED TO SURFACE COORDINATES.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 1 DAY OF APRIL 2015

FILIMON F. JARAMILLO, PLS 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 2346

FLOWLINE PLAT

RIGHT-OF-WAY FOR TWO 3" SDR 7 POLY SURFACE LINES (1-GAS & 1-PRODUCTION) FROM THE EAGLE "34J" FEDERAL 81 TO AN EAGLE "33/34" FEDERAL BATTERY FIELD HEADER

MAP 7

LIME ROCK RESOURCES II-A, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
APRIL 1, 2015

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NW/4 SE/4 OF SAID SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M., WHENCE THE EAST QUARTER CORNER OF SAID SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M. BEARS N66°49'53"E, A DISTANCE OF 1907.09 FEET;
THENCE N03°02'06"W A DISTANCE OF 308.96 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N12°22'24"W A DISTANCE OF 191.35 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S87°16'47"W A DISTANCE OF 1254.41 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N89°40'32"W A DISTANCE OF 75.03 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S00°57'48"E A DISTANCE OF 124.02 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N89°38'29"W A DISTANCE OF 228.44 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S00°24'45"W A DISTANCE OF 31.25 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M. BEARS N77°18'56"W, A DISTANCE OF 1907.37 FEET;

SAID STRIP OF LAND BEING 2213.46 FEET OR 134.15 RODS IN LENGTH, CONTAINING 1.524 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 SE/4	1301.24 L.F.	78.86 RODS	0.896 ACRES
NE/4 SW/4	912.22 L.F.	55.29 RODS	0.628 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST MODIFIED TO SURFACE COORDINATES.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 7 DAY OF APRIL, 2015.

FILIMON F. JARAMILLO PLS 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 2346

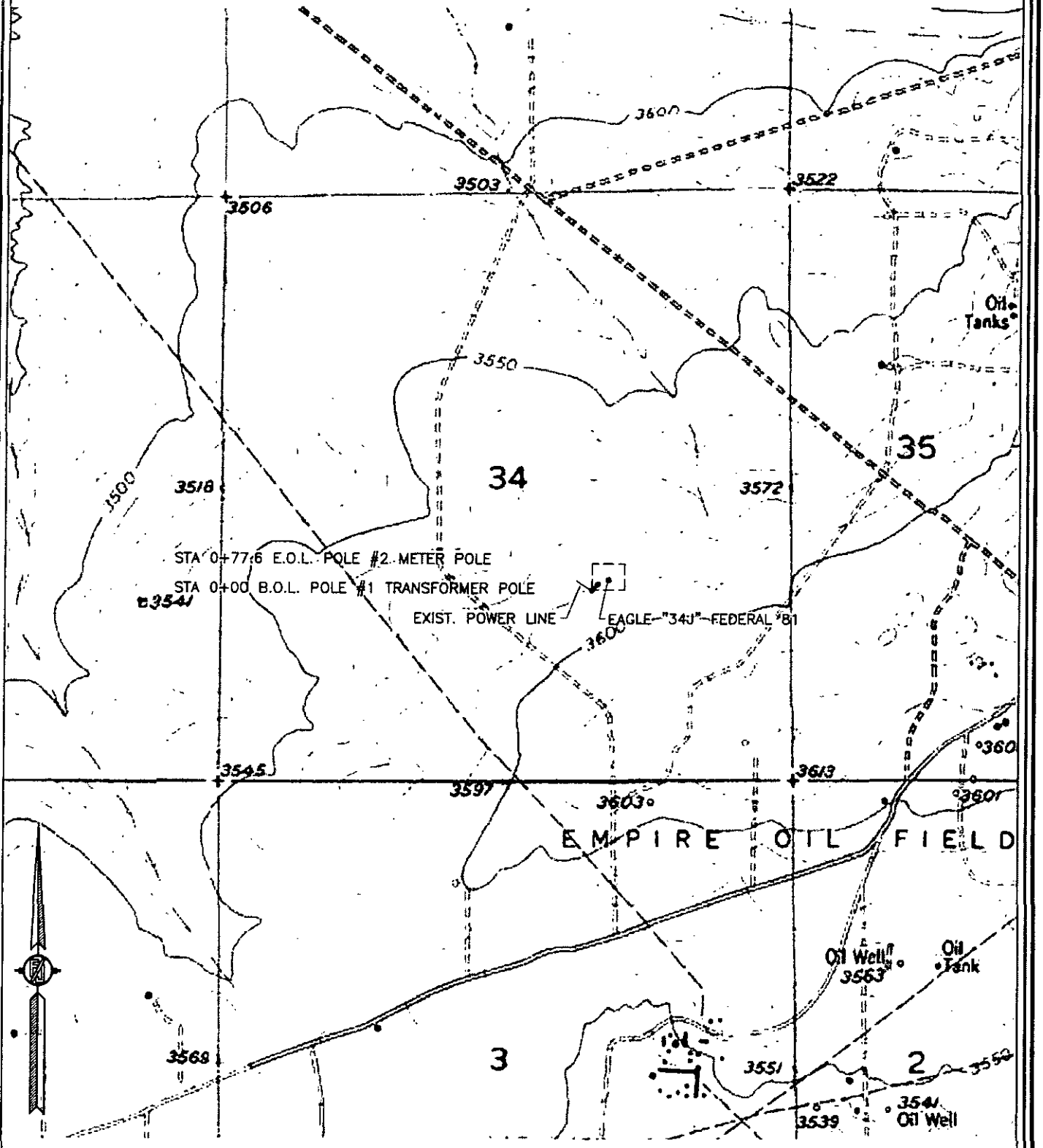
ELECTRIC LINE PLAT

ELECTRIC LINE TO CONNECT THE EAGLE "34J" FEDERAL 81

MAP 8

LIME ROCK RESOURCES II-A, L.P.

CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
APRIL 20, 2015



SURVEY NO. 2346A

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

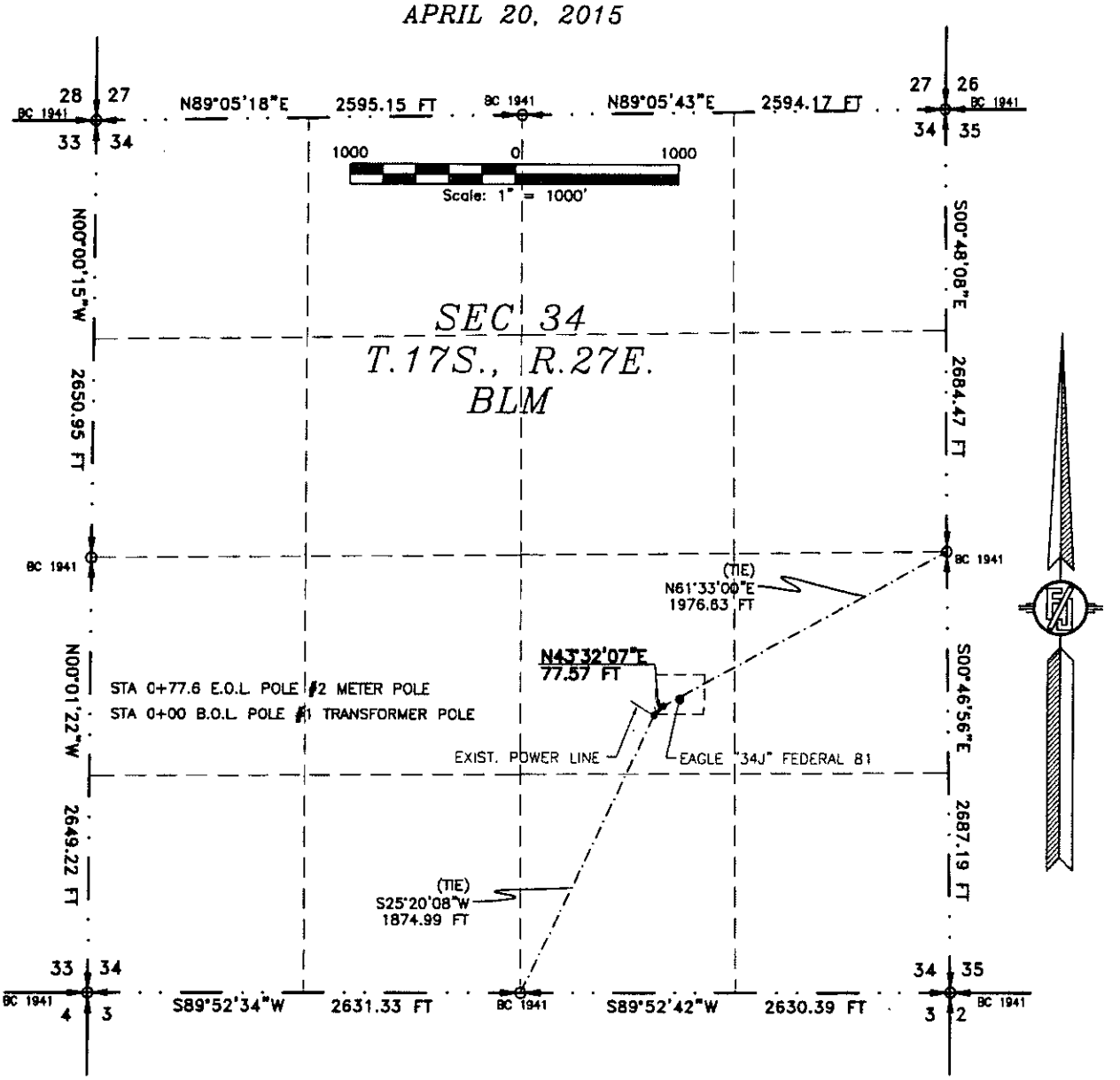
ELECTRIC LINE PLAT

ELECTRIC LINE TO CONNECT THE EAGLE "34J" FEDERAL 81

MAP 9

LIME ROCK RESOURCES II-A, L.P.

CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
APRIL 20, 2015



GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST MODIFIED TO SURFACE COORDINATES.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 20 DAY OF MAY, 2015

FILIMON F. JARAMILLO PLS. 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 2346A

ELECTRIC LINE PLAT

ELECTRIC LINE TO CONNECT THE EAGLE "34J" FEDERAL 81

MAP 10

LIME ROCK RESOURCES II-A, L.P.

CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
APRIL 20, 2015

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NW/4 SE/4 OF SAID SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M., WHENCE THE SOUTH QUARTER CORNER OF SAID SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M. BEARS S25°20'08"W, A DISTANCE OF 1874.99 FEET;
THENCE N43°32'07"E A DISTANCE OF 77.57 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE EAST QUARTER CORNER OF SAID SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M. BEARS N81°33'00"E, A DISTANCE OF 1976.63 FEET;

SAID STRIP OF LAND BEING 77.57 FEET OR 4.70 RODS IN LENGTH, CONTAINING 0.053 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 SE/4	77.57 L.F.	4.70 RODS	0.053 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST MODIFIED TO SURFACE COORDINATES.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 20 DAY OF MAY 2015

12797

REGISTERED PROFESSIONAL SURVEYOR

FILIMON F. JARAMILLO PLS 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 2346A

Drilling Program

1. ESTIMATED TOPS

Name	TVD	MD	Content
Tansill	0'	0'	---
Yates	125'	125'	fresh water
Seven Rivers*	328'	328'	oil, gas, saltwater
Queen	840'	840'	oil, gas, saltwater
Grayburg	1,338'	1,339'	oil, gas, saltwater
Premier	1,523'	1,524'	---
San Andres	1,566'	1,567'	oil, gas
Glorieta	2,952'	2,956'	oil, gas
Yeso	3,052'	3,056'	oil, gas
Tubb	4,512'	4,516'	---
Abo**	5,150'	5,154'	---
Total Depth	5,250'	5,254'	---

*in which surface casing will be set at 350' and contingency string, if needed, will be set at 375'
** Abo will not be perforated. Extra depth needed for logs and pump.

2. NOTABLE ZONES

Water bearing strata were found at 215' in the Harbold 11 (30-015-00606). That well is 2,827' northeast. Closest water well (RA 02996) is a P&A well (30-015-00739) that is 4,349' southeast and found water at a depth of 145'.

3. PRESSURE CONTROL

A 2,000 psi BOP stack and manifold system will be used. A typical 2,000 system is attached behind the directional plan. 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),
- 1 choke line valve (2" minimum),
- 2" diameter choke line,
- 2 kill valves, one of which will be a check valve (2" minimum),
- 1 choke, 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	40'	20"	14"	68.7	B	Weld	No	New
Surface	350'	12.25"	8.625"	24	J-55	S T & C	Yes	New
Production	5254'	7.875"	5.5"	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	sacks cement	top	gallons per sack	density (ppg)	yield (cu ft per sack)	total cubic feet	% excess	blend
conductor	40'	N/A	GL	ready mix	ready mix	ready mix	ready mix	ready mix	ready mix
surface	350'	300	GL	6.2	14.8	1.35	405	200	1
production lead	5254'	300	GL	9.8	12.8	1.903	570	80	2
production tail	5254'	620	GL	6.2	14.8	1.33	824	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 + 0.2% 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 of the multi stage tool if applicable.

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% $CaCl_2$ mixed with 6.2 gallons per sack 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 minutes before drilling out the 13-3/8" casing shoe. The formation will be drilled with a 10-¾" bit approximately 50 feet past the 13-3/8" casing shoe into a competent formation and 8-5/8" casing will be set at approximately 425' (≥50' beyond the previous casing shoe) in the Seven Rivers and cemented with 410 sacks (549 cubic feet) Class C + ¼ pound per sack cello flake + 2% $CaCl_2$ mixed with 6.2 gallons per sack 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 on site to handle any abnormal hole condition that could possibly be encountered during the drilling of this well. Circulation could be lost in the Grayburg and San Andres.

Interval	*0' – 375' (if contingency string run)*	0' - 350'	350' - 5104'	5104' -TD
Type	*fresh water*	fresh water	brine	brine w/ gel & starch
weight	*8.5 - 9.2*	8.5 - 9.2	9.9 - 10.2	9.9 - 10.2
pH	*10*	10	10 - 11.5	10 - 11.5
WL	*NC*	NC	NC	15 - 20
viscosity	*28 - 34*	28 - 34	30 - 32	32 - 35
MC	*NC*	NC	NC	1
solids	*NC*	NC	<2%	<3%
pump rate	*300 - 350 gpm*	300 - 350 gpm	350 - 400 gpm	400 - 450 gpm
other	*LCM as needed*	*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 TD to surface.

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is ≈2,273 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 Page 4.

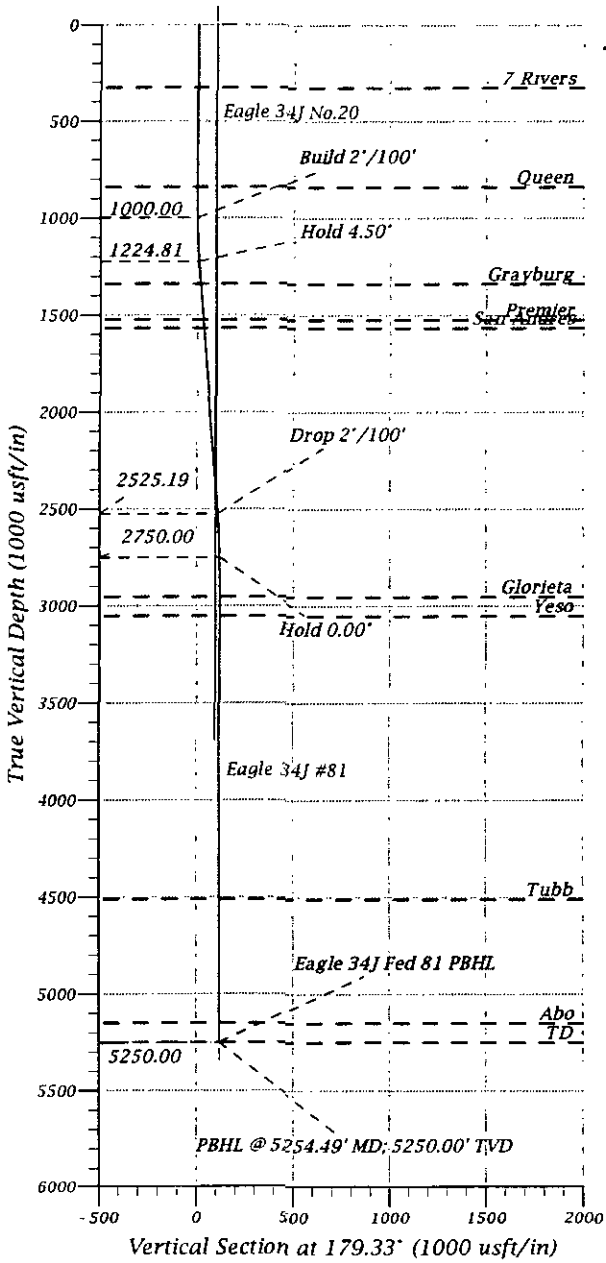
8. OTHER INFORMATION

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

LIME ROCK RESOURCES

Lime Rock Resources
Eddy County NM (NAD 27)
Eagle 34J
#81
Plan #1

CHILDRESS DIRECTIONAL DRILLING



WELL DETAILS: #81

Ground Level: 3590.80 RKB @ 3603.60usft

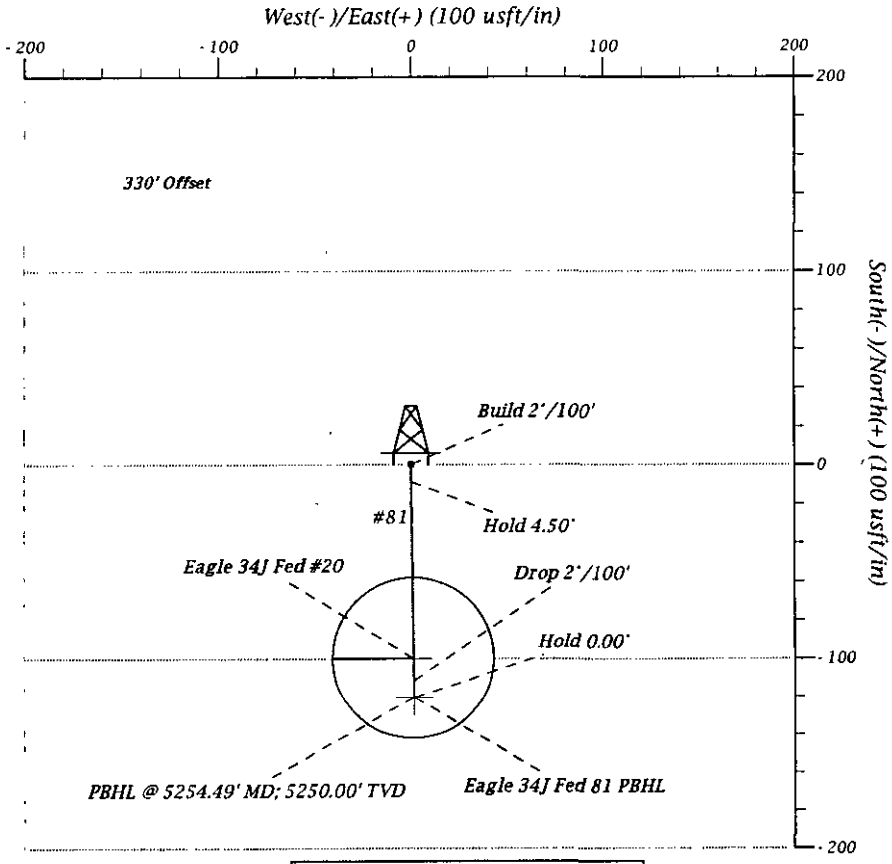
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	650528.64	562841.39	32.78823	-104.12885

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Eagle 34J Fed #20	-99.77		0.82	650428.87	562842.40
Eagle 34J Fed 81 PBHL	5250.00	-120.02	1.41	650408.62	562843.03

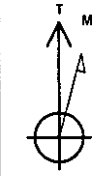
PROJECT DETAILS: Eddy County NM (NAD 27)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
328.00	328.00	7 Rivers
840.00	840.00	Queen
1338.00	1338.58	Grayburg
1523.00	1524.15	Premier
1566.00	1567.29	San Andres
2952.00	2956.49	Glorieta
3052.00	3056.49	Yeso
4512.00	4516.49	Tubb
5150.00	5154.49	Abo
5250.00	5254.49	TD



Azimuths to True North
Magnetic North: 7.41°

Magnetic Field
Strength: 48366.2snT
Dip Angle: 60.51°
Date: 12/18/2015
Model: IGRF2015

To convert a Magnetic Direction to a True Direction, Add 7.42° East
Magnetic North is 7.42° East of True North (Magnetic Declination)

Section Plans

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'
1225.04	4.50	179.33	1224.81	-8.83	0.10	2.00	179.33	8.83	Hold 4.50°
2529.44	4.50	179.33	2525.19	-111.19	1.30	0.00	0.00	111.20	Drop 2°/100'
2754.49	0.00	0.00	2750.00	-120.02	1.41	2.00	180.00	120.03	Hold 0.00°
5254.49	0.00	0.00	5250.00	-120.02	1.41	0.00	0.00	120.03	PBHL @ 5254.49' MD; 5250.00' TVD

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well #81
Company:	Lime Rock Resources	**TVD Reference:**	RKB @ 3603.60usft
Project:	Eddy County NM (NAD 27)	**MD Reference:**	RKB @ 3603.60usft
Site:	Eagle 34J	**North Reference:**	True
Well:	#81	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

Project Eddy County NM (NAD 27)

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 Eagle 34J

Site Position:		**Northing:**	650,528.64 usft	**Latitude:**	32.78823
From:	Map	**Easting:**	562,841.39 usft	**Longitude:**	-104.12885
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.11 °

Well #81

Well Position	**+N/-S**	0.00 usft	**Northing:**	650,528.64 usft	**Latitude:**	32.78823
	+E/-W	0.00 usft	**Easting:**	562,841.39 usft	**Longitude:**	-104.12885
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,590.80 usft

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/18/2015	7.42	60.51	48,366

Design Plan #1

Audit Notes:

Version:		*Phase:*	*PROTOTYPE*	*Tie On Depth:*	*0.00*

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.33

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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,225.04	4.50	179.33	1,224.81	-8.83	0.10	2.00	2.00	0.00	179.33	
2,529.44	4.50	179.33	2,525.19	-111.19	1.30	0.00	0.00	0.00	0.00	
2,754.49	0.00	0.00	2,750.00	-120.02	1.41	2.00	-2.00	0.00	180.00	
5,254.49	0.00	0.00	5,250.00	-120.02	1.41	0.00	0.00	0.00	0.00	Eagle 34J Fed 81 PBl

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well #81
Company:	Lime Rock Resources	**TVD Reference:**	RKB @ 3603.60usft
Project:	Eddy County NM (NAD 27)	**MD Reference:**	RKB @ 3603.60usft
Site:	Eagle 34J	**North Reference:**	True
Well:	#81	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
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
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
328.00	0.00	0.00	328.00	0.00	0.00	0.00	0.00	0.00	0.00
7 Rivers									
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	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
840.00	0.00	0.00	840.00	0.00	0.00	0.00	0.00	0.00	0.00
Queen									
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Build 2°/100'									
1,100.00	2.00	179.33	1,099.98	-1.75	0.02	1.75	2.00	2.00	0.00
1,200.00	4.00	179.33	1,199.84	-6.98	0.08	6.98	2.00	2.00	0.00
1,225.04	4.50	179.33	1,224.81	-8.83	0.10	8.83	2.00	2.00	0.00
Hold 4.50°									
1,300.00	4.50	179.33	1,299.54	-14.72	0.17	14.72	0.00	0.00	0.00
1,338.58	4.50	179.33	1,338.00	-17.74	0.21	17.74	0.00	0.00	0.00
Grayburg									
1,400.00	4.50	179.33	1,399.23	-22.56	0.26	22.56	0.00	0.00	0.00
1,500.00	4.50	179.33	1,498.92	-30.41	0.36	30.41	0.00	0.00	0.00
1,524.15	4.50	179.33	1,523.00	-32.30	0.38	32.31	0.00	0.00	0.00
Premier									
1,567.29	4.50	179.33	1,566.00	-35.69	0.42	35.69	0.00	0.00	0.00
San Andres									
1,600.00	4.50	179.33	1,598.61	-38.26	0.45	38.26	0.00	0.00	0.00
1,700.00	4.50	179.33	1,698.30	-46.10	0.54	46.11	0.00	0.00	0.00
1,800.00	4.50	179.33	1,798.00	-53.95	0.63	53.95	0.00	0.00	0.00
1,900.00	4.50	179.33	1,897.69	-61.80	0.72	61.80	0.00	0.00	0.00
2,000.00	4.50	179.33	1,997.38	-69.64	0.82	69.65	0.00	0.00	0.00
2,100.00	4.50	179.33	2,097.07	-77.49	0.91	77.50	0.00	0.00	0.00
2,200.00	4.50	179.33	2,196.76	-85.34	1.00	85.34	0.00	0.00	0.00
2,300.00	4.50	179.33	2,296.45	-93.18	1.09	93.19	0.00	0.00	0.00
2,400.00	4.50	179.33	2,396.15	-101.03	1.19	101.04	0.00	0.00	0.00
2,500.00	4.50	179.33	2,495.84	-108.88	1.28	108.89	0.00	0.00	0.00
2,529.44	4.50	179.33	2,525.19	-111.19	1.30	111.20	0.00	0.00	0.00
Drop 2°/100'									
2,600.00	3.09	179.33	2,595.59	-115.86	1.36	115.87	2.00	-2.00	0.00
2,700.00	1.09	179.33	2,695.52	-119.50	1.40	119.51	2.00	-2.00	0.00
2,754.49	0.00	0.00	2,750.00	-120.02	1.41	120.03	2.00	-2.00	0.00
Hold 0.00°									
2,800.00	0.00	0.00	2,795.51	-120.02	1.41	120.03	0.00	0.00	0.00
2,900.00	0.00	0.00	2,895.51	-120.02	1.41	120.03	0.00	0.00	0.00
2,956.49	0.00	0.00	2,952.00	-120.02	1.41	120.03	0.00	0.00	0.00
Glorieta									
3,000.00	0.00	0.00	2,995.51	-120.02	1.41	120.03	0.00	0.00	0.00
3,056.49	0.00	0.00	3,052.00	-120.02	1.41	120.03	0.00	0.00	0.00
Yeso									
3,100.00	0.00	0.00	3,095.51	-120.02	1.41	120.03	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well #81
Company:	Lime Rock Resources	**TVD Reference:**	RKB @ 3603.60usft
Project:	Eddy County NM (NAD 27)	**MD Reference:**	RKB @ 3603.60usft
Site:	Eagle 34J	**North Reference:**	True
Well:	#81	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
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)
3,200.00	0.00	0.00	3,195.51	-120.02	1.41	120.03	0.00	0.00	0.00
3,300.00	0.00	0.00	3,295.51	-120.02	1.41	120.03	0.00	0.00	0.00
3,400.00	0.00	0.00	3,395.51	-120.02	1.41	120.03	0.00	0.00	0.00
3,500.00	0.00	0.00	3,495.51	-120.02	1.41	120.03	0.00	0.00	0.00
3,600.00	0.00	0.00	3,595.51	-120.02	1.41	120.03	0.00	0.00	0.00
3,700.00	0.00	0.00	3,695.51	-120.02	1.41	120.03	0.00	0.00	0.00
3,800.00	0.00	0.00	3,795.51	-120.02	1.41	120.03	0.00	0.00	0.00
3,900.00	0.00	0.00	3,895.51	-120.02	1.41	120.03	0.00	0.00	0.00
4,000.00	0.00	0.00	3,995.51	-120.02	1.41	120.03	0.00	0.00	0.00
4,100.00	0.00	0.00	4,095.51	-120.02	1.41	120.03	0.00	0.00	0.00
4,200.00	0.00	0.00	4,195.51	-120.02	1.41	120.03	0.00	0.00	0.00
4,300.00	0.00	0.00	4,295.51	-120.02	1.41	120.03	0.00	0.00	0.00
4,400.00	0.00	0.00	4,395.51	-120.02	1.41	120.03	0.00	0.00	0.00
4,500.00	0.00	0.00	4,495.51	-120.02	1.41	120.03	0.00	0.00	0.00
4,516.49	0.00	0.00	4,512.00	-120.02	1.41	120.03	0.00	0.00	0.00
Tubb									
4,600.00	0.00	0.00	4,595.51	-120.02	1.41	120.03	0.00	0.00	0.00
4,700.00	0.00	0.00	4,695.51	-120.02	1.41	120.03	0.00	0.00	0.00
4,800.00	0.00	0.00	4,795.51	-120.02	1.41	120.03	0.00	0.00	0.00
4,900.00	0.00	0.00	4,895.51	-120.02	1.41	120.03	0.00	0.00	0.00
5,000.00	0.00	0.00	4,995.51	-120.02	1.41	120.03	0.00	0.00	0.00
5,100.00	0.00	0.00	5,095.51	-120.02	1.41	120.03	0.00	0.00	0.00
5,154.49	0.00	0.00	5,150.00	-120.02	1.41	120.03	0.00	0.00	0.00
Abo									
5,200.00	0.00	0.00	5,195.51	-120.02	1.41	120.03	0.00	0.00	0.00
5,254.49	0.00	0.00	5,250.00	-120.02	1.41	120.03	0.00	0.00	0.00
PBHL @ 5254.49' MD; 5250.00' TVD - TD									

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
Eagle 34J Fed 81 PBHL - plan hits target center - Point	0.00	0.11	5,250.00	-120.02	1.41	650,408.62	562,843.03	32.78790	-104.12885

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well #81
Company:	*Lime Rock Resources*	**TVD Reference:**	*RKB @ 3603.60usft*
Project:	Eddy County NM (NAD 27)	**MD Reference:**	RKB @ 3603.60usft
Site:	Eagle 34J	**North Reference:**	True
Well:	#81	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
328.00	328.00	7 Rivers			
840.00	840.00	Queen			
1,338.58	1,338.00	Grayburg			
1,524.15	1,523.00	Premier			
1,567.29	1,566.00	San Andres			
2,956.49	2,952.00	Glorieta			
3,056.49	3,052.00	Yeso			
4,516.49	4,512.00	Tubb			
5,154.49	5,150.00	Abo			
5,254.49	5,250.00	TD			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,000.00	1,000.00	0.00	0.00	Build 2°/100'
1,225.04	1,224.81	-8.83	0.10	Hold 4.50°
2,529.44	2,525.19	-111.19	1.30	Drop 2°/100'
2,754.49	2,750.00	-120.02	1.41	Hold 0.00°
5,254.49	5,250.00	-120.02	1.41	PBHL @ 5254.49' MD; 5250.00' TVD

CHILDRESS DIRECTIONAL DRILLING

Lime Rock Resources

Eddy County NM (NAD 27)
Eagle 34J
#81

Original Hole
Plan #1

Anticollision Report

best

18 December, 2015

LIME ROCK RESOURCES

Company:	Lime Rock Resources	**Local Co-ordinate Reference:**	Well #81
Project:	Eddy County NM (NAD 27)	**TVD Reference:**	RKB @ 3603.60usft
Reference Site:	Eagle 34J	**MD Reference:**	RKB @ 3603.60usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	#81	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	1.00 sigma
Reference Wellbore	Original Hole	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1	**Offset TVD Reference:**	Reference Datum

Reference Plan #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 12/18/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	5,254.49	Plan #1 (Original Hole)	MWD	MWD v3:standard declination

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Eagle 34J						
No.20 - Original Hole - Original Hole	2,349.55	2,330.12	15.61	7.40	1.901	CC, ES, SF

Offset Design Eagle 34J - No.20 - Original Hole - Original Hole — Offset Site Error: 0.00 usft

Survey Program: 3158-NS-GYRO-MS — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	15.60	0.00	0.00	179.56	-99.77	0.77	100.98				
100.00	100.00	84.40	100.00	0.05	0.06	179.57	-99.77	0.75	99.77	99.56	0.21	474.265	
200.00	200.00	184.40	200.00	0.16	0.12	179.61	-99.77	0.67	99.77	99.20	0.57	175.640	
300.00	300.00	284.40	300.00	0.27	0.19	179.69	-99.77	0.54	99.77	98.84	0.93	107.777	
400.00	400.00	384.40	400.00	0.39	0.25	179.79	-99.77	0.36	99.77	98.49	1.28	77.739	
500.00	500.00	484.40	500.00	0.50	0.32	179.93	-99.77	0.12	99.77	98.13	1.64	60.795	
542.29	542.29	526.69	542.29	0.55	0.35	180.00	-99.77	0.00	99.77	97.98	1.79	55.665	
600.00	600.00	584.40	600.00	0.61	0.39	-179.90	-99.77	-0.18	99.77	97.77	2.00	49.916	
700.00	700.00	684.40	700.00	0.72	0.45	-179.70	-99.77	-0.53	99.77	97.41	2.36	42.340	
800.00	800.00	784.40	800.00	0.84	0.52	-179.46	-99.77	-0.93	99.77	97.06	2.71	36.761	
900.00	900.00	884.40	899.99	0.95	0.59	-179.20	-99.77	-1.39	99.78	96.71	3.07	32.483	
1,000.00	1,000.00	984.39	999.99	1.06	0.65	-178.90	-99.77	-1.91	99.79	96.36	3.43	29.098	
1,100.00	1,099.98	1,084.37	1,099.96	1.16	0.72	2.14	-99.77	-2.48	98.06	94.30	3.76	26.083	
1,200.00	1,199.84	1,184.23	1,199.82	1.25	0.79	2.65	-99.77	-3.11	92.85	88.78	4.07	22.828	
1,225.04	1,224.81	1,209.20	1,224.79	1.27	0.80	2.81	-99.77	-3.27	91.00	86.85	4.15	21.953	
1,300.00	1,299.54	1,283.92	1,299.51	1.34	0.85	3.35	-99.77	-3.79	85.15	80.76	4.38	19.431	
1,400.00	1,399.23	1,383.61	1,399.19	1.44	0.92	4.23	-99.77	-4.52	77.35	72.65	4.70	16.445	
1,500.00	1,498.92	1,483.29	1,498.87	1.55	0.99	5.36	-99.77	-5.31	69.59	64.56	5.03	13.831	
1,600.00	1,598.61	1,582.97	1,598.55	1.66	1.05	6.82	-99.77	-6.16	61.87	56.50	5.36	11.532	
1,700.00	1,698.30	1,682.66	1,698.23	1.77	1.12	8.76	-99.77	-7.06	54.20	48.50	5.70	9.506	
1,800.00	1,798.00	1,782.34	1,797.91	1.89	1.18	11.39	-99.77	-8.01	46.63	40.58	6.04	7.715	
1,900.00	1,897.69	1,882.02	1,897.59	2.01	1.25	15.11	-99.77	-9.02	39.20	32.81	6.39	6.134	
2,000.00	1,997.38	1,981.70	1,997.26	2.13	1.32	20.62	-99.77	-10.09	32.04	25.29	6.75	4.748	
2,100.00	2,097.07	2,081.38	2,096.93	2.25	1.38	29.27	-99.77	-11.20	25.36	18.24	7.12	3.561	
2,200.00	2,196.76	2,181.05	2,196.60	2.38	1.45	43.57	-99.77	-12.38	19.68	12.15	7.53	2.613	
2,300.00	2,296.45	2,280.73	2,296.27	2.50	1.52	66.56	-99.77	-13.61	16.11	8.12	7.99	2.017	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Lime Rock Resources	**Local Co-ordinate Reference:**	Well #81
Project:	Eddy County NM (NAD 27)	**TVD Reference:**	RKB @ 3603.60usft
Reference Site:	Eagle 34J	**MD Reference:**	RKB @ 3603.60usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	#81	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	1.00 sigma
Reference Wellbore	Original Hole	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1	**Offset TVD Reference:**	Reference Datum

Offset Design Eagle 34J - No.20 - Original Hole - Original Hole — **Offset Site Error:** 0.00 usft

Survey Program: 3158-NS-GYRO-MS — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,349.55	2,345.85	2,330.12	2,345.65	2.56	1.55	80.70	-99.77	-14.24	15.61	7.40	8.21	1.901	CC, ES, SF
2,400.00	2,396.15	2,380.40	2,395.93	2.63	1.58	95.09	-99.77	-14.89	16.13	7.72	8.41	1.918	
2,500.00	2,495.84	2,480.07	2,495.60	2.75	1.65	118.04	-99.77	-16.23	19.74	11.01	8.73	2.262	
2,529.44	2,525.19	2,509.42	2,524.94	2.79	1.67	123.03	-99.77	-16.63	21.27	12.46	8.81	2.413	
2,600.00	2,595.59	2,579.81	2,595.32	2.88	1.71	130.89	-99.77	-17.62	24.89	15.86	9.03	2.756	
2,700.00	2,695.52	2,679.71	2,695.21	2.99	1.78	134.60	-99.77	-19.08	28.44	19.08	9.37	3.037	
2,754.49	2,750.00	2,734.18	2,749.68	3.04	1.82	-46.44	-99.77	-19.89	29.39	19.84	9.55	3.078	
2,800.00	2,795.51	2,779.69	2,795.18	3.09	1.85	-47.36	-99.77	-20.58	29.90	20.20	9.70	3.082	
2,900.00	2,895.51	2,879.66	2,895.14	3.18	1.91	-49.31	-99.77	-22.15	31.07	21.03	10.04	3.095	
3,000.00	2,995.51	2,979.63	2,995.10	3.28	1.98	-51.18	-99.77	-23.77	32.31	21.94	10.38	3.114	
3,100.00	3,095.51	3,079.61	3,095.06	3.37	2.05	-52.97	-99.77	-25.44	33.63	22.92	10.72	3.139	
3,200.00	3,195.51	3,179.56	3,194.99	3.47	2.13	-54.68	-99.77	-27.18	35.04	23.95	11.08	3.161	
3,300.00	3,295.51	3,279.44	3,294.86	3.57	2.26	-56.47	-99.77	-29.16	36.67	25.12	11.56	3.174	
3,400.00	3,395.51	3,379.31	3,394.69	3.66	2.39	-58.37	-99.77	-31.48	38.63	26.60	12.03	3.212	
3,500.00	3,495.51	3,479.15	3,494.51	3.76	2.53	-60.32	-99.77	-34.14	40.92	28.42	12.50	3.273	
3,600.00	3,595.51	3,578.98	3,594.29	3.86	2.66	-62.28	-99.77	-37.13	43.55	30.57	12.98	3.356	
3,700.00	3,695.51	3,675.00	3,690.26	3.96	2.79	-64.11	-99.77	-40.32	46.69	33.24	13.44	3.473	
3,800.00	3,795.51	3,675.00	3,690.26	4.07	2.79	-64.11	-99.77	-40.32	115.03	101.38	13.65	8.429	
3,900.00	3,895.51	3,675.00	3,690.26	4.17	2.79	-64.11	-99.77	-40.32	210.44	196.58	13.85	15.191	
4,000.00	3,995.51	3,675.00	3,690.26	4.27	2.79	-64.11	-99.77	-40.32	308.76	294.70	14.06	21.962	
4,100.00	4,095.51	3,675.00	3,690.26	4.37	2.79	-64.11	-99.77	-40.32	407.90	393.64	14.27	28.593	
4,200.00	4,195.51	3,675.00	3,690.26	4.48	2.79	-64.11	-99.77	-40.32	507.38	492.91	14.47	35.055	
4,300.00	4,295.51	3,675.00	3,690.26	4.58	2.79	-64.11	-99.77	-40.32	607.03	592.35	14.68	41.344	
4,400.00	4,395.51	3,675.00	3,690.26	4.68	2.79	-64.11	-99.77	-40.32	706.78	691.89	14.89	47.460	
4,500.00	4,495.51	3,675.00	3,690.26	4.79	2.79	-64.11	-99.77	-40.32	806.59	791.49	15.10	53.409	
4,600.00	4,595.51	3,675.00	3,690.26	4.89	2.79	-64.11	-99.77	-40.32	906.45	891.13	15.31	59.194	
4,700.00	4,695.51	3,675.00	3,690.26	5.00	2.79	-64.11	-99.77	-40.32	1,006.33	990.80	15.52	64.822	
4,800.00	4,795.51	3,675.00	3,690.26	5.10	2.79	-64.11	-99.77	-40.32	1,106.23	1,090.50	15.74	70.297	
4,900.00	4,895.51	3,675.00	3,690.26	5.21	2.79	-64.11	-99.77	-40.32	1,206.15	1,190.20	15.95	75.625	
5,000.00	4,995.51	3,675.00	3,690.26	5.32	2.79	-64.11	-99.77	-40.32	1,306.08	1,289.92	16.16	80.811	
5,100.00	5,095.51	3,675.00	3,690.26	5.42	2.79	-64.11	-99.77	-40.32	1,406.02	1,389.65	16.38	85.860	
5,200.00	5,195.51	3,675.00	3,690.26	5.53	2.79	-64.11	-99.77	-40.32	1,505.97	1,489.38	16.59	90.777	
5,254.49	5,250.00	3,675.00	3,690.26	5.59	2.79	-64.11	-99.77	-40.32	1,560.43	1,543.73	16.71	93.402	

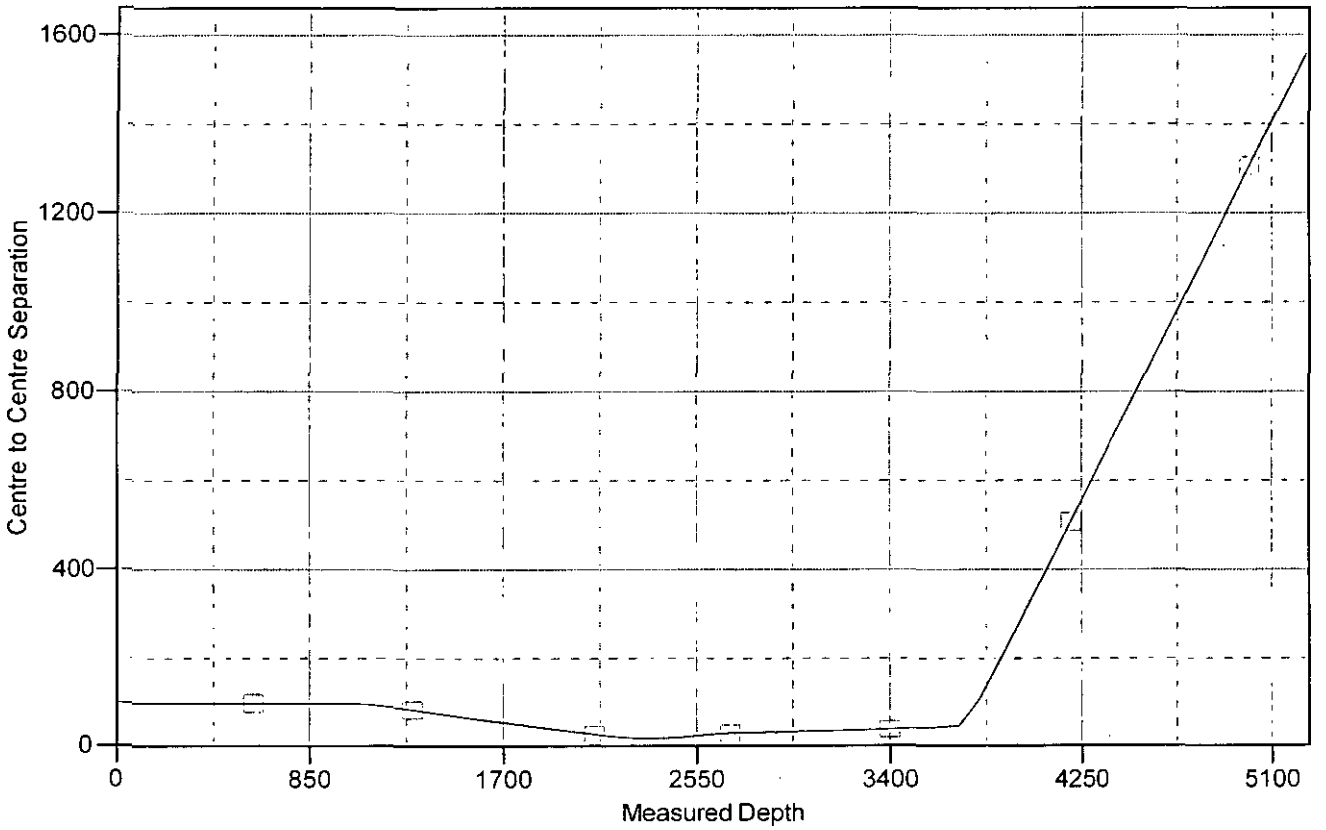
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Lime Rock Resources	**Local Co-ordinate Reference:**	Well #81
Project:	Eddy County NM (NAD 27)	**TVD Reference:**	RKB @ 3603.60usft
Reference Site:	Eagle 34J	**MD Reference:**	RKB @ 3603.60usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	#81	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	1.00 sigma
Reference Wellbore	Original Hole	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to RKB @ 3603.60usft
Offset Depths are relative to Offset Datum
Central Meridian is -104.33334

Coordinates are relative to: #81
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.11°

Ladder Plot



LEGEND

No.20, Original Hole, Original Hole V0

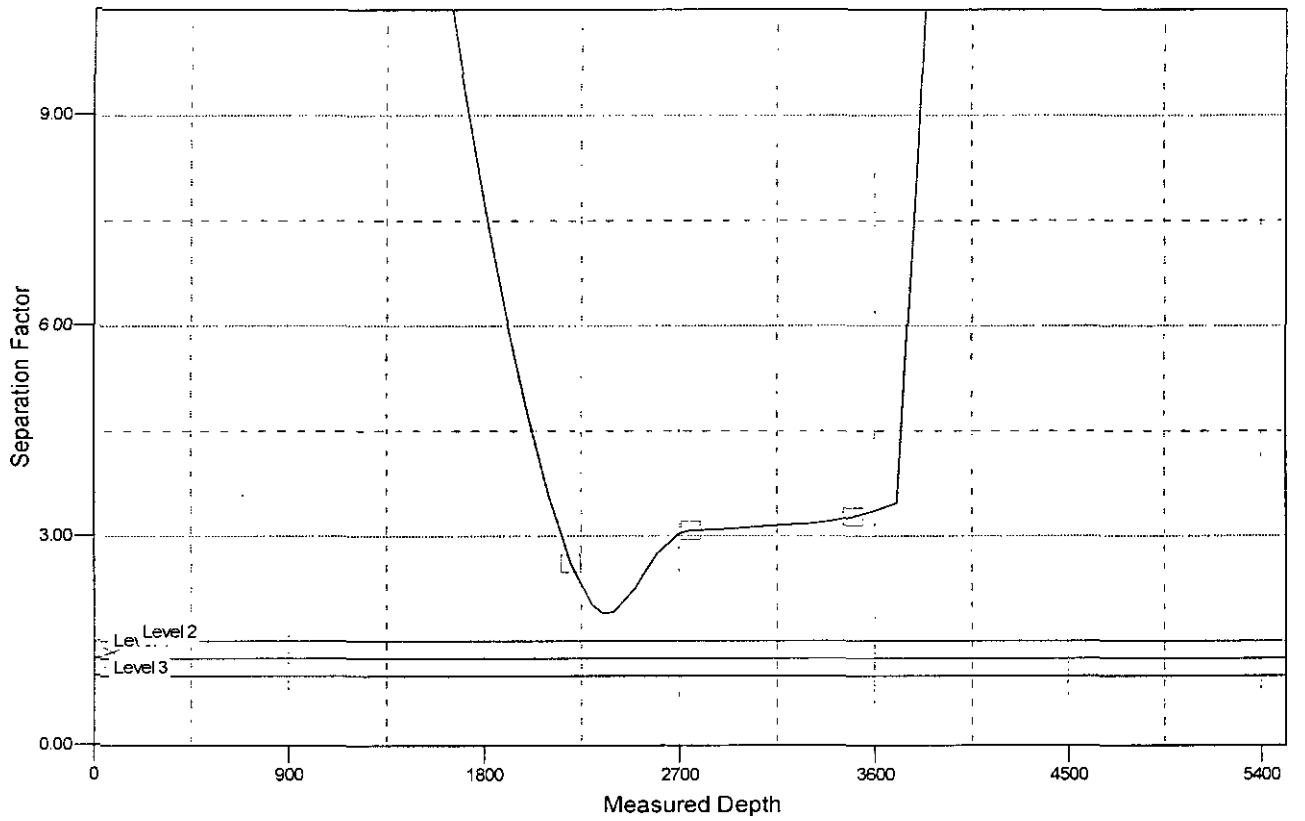
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Lime Rock Resources	**Local Co-ordinate Reference:**	Well #81
Project:	Eddy County NM (NAD 27)	**TVD Reference:**	RKB @ 3603.60usft
Reference Site:	Eagle 34J	**MD Reference:**	RKB @ 3603.60usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	#81	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	1.00 sigma
Reference Wellbore	Original Hole	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to RKB @ 3603.60usft
Offset Depths are relative to Offset Datum
Central Meridian is -104.33334

Coordinates are relative to: #81
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.11°

Separation Factor Plot



LEGEND

No.20, Original Hole, Original Hole V0

CHILDRESS DIRECTIONAL DRILLING

Lime Rock Resources

Eddy County NM (NAD 27)
Eagle 34J
#81

Original Hole
Plan #1

Anticollision Report

worse

18 December, 2015

LIME ROCK RESOURCES

Company:	Lime Rock Resources	**Local Co-ordinate Reference:**	Well #81
Project:	Eddy County NM (NAD 27)	**TVD Reference:**	RKB @ 3603.60usft
Reference Site:	Eagle 34J	**MD Reference:**	RKB @ 3603.60usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#81	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	1.00 sigma
Reference Wellbore	Original Hole	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1	**Offset TVD Reference:**	Reference Datum

Reference Plan #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 12/18/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	5,254.49	Plan #1 (Original Hole)	MWD	MWD v3:standard declination

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Eagle 34J						
No.20 - Original Hole - Original Hole	*2,383.85*	*2,364.44*	*0.40*	*-7.46*	*0.051*	*Level 1, CC, ES, SF*

Offset Design Eagle 34J - No.20 - Original Hole - Original Hole — Offset Site Error: 0.00 usft

Survey Program: 3552-MWD — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	15.60	0.00	0.00	179.45	-99.77	0.96	100.98				
100.00	100.00	84.40	100.00	0.05	0.05	179.45	-99.77	0.96	99.77	99.58	0.19	516.833	
200.00	200.00	184.40	200.00	0.16	0.10	179.45	-99.77	0.96	99.77	99.24	0.53	186.182	
300.00	300.00	284.40	300.00	0.27	0.16	179.45	-99.77	0.96	99.77	98.90	0.87	115.033	
400.00	400.00	384.40	400.00	0.39	0.22	179.45	-99.77	0.96	99.77	98.57	1.20	82.834	
500.00	500.00	484.40	500.00	0.50	0.27	179.45	-99.77	0.96	99.77	98.23	1.54	64.719	
600.00	600.00	584.40	600.00	0.61	0.33	179.45	-99.77	0.96	99.77	97.89	1.88	53.105	
700.00	700.00	684.40	700.00	0.72	0.38	179.45	-99.77	0.96	99.77	97.56	2.22	45.025	
800.00	800.00	784.40	800.00	0.84	0.44	179.45	-99.77	0.96	99.77	97.22	2.55	39.080	
900.00	900.00	884.40	900.00	0.95	0.50	179.45	-99.77	0.96	99.77	96.88	2.89	34.521	
1,000.00	1,000.00	984.40	1,000.00	1.06	0.55	179.45	-99.77	0.96	99.77	96.54	3.23	30.915	
1,100.00	1,099.98	1,084.38	1,099.98	1.16	0.61	0.24	-99.77	0.96	98.03	94.49	3.54	27.714	
1,200.00	1,199.84	1,184.24	1,199.84	1.25	0.67	0.25	-99.77	0.96	92.79	88.97	3.83	24.257	
1,225.04	1,224.81	1,209.21	1,224.81	1.27	0.68	0.26	-99.77	0.96	90.94	87.04	3.90	23.326	
1,300.00	1,299.54	1,283.94	1,299.54	1.34	0.72	0.27	-99.77	0.96	85.06	80.94	4.12	20.645	
1,400.00	1,399.23	1,383.63	1,399.23	1.44	0.78	0.30	-99.77	0.96	77.21	72.79	4.42	17.462	
1,500.00	1,498.92	1,483.32	1,498.92	1.55	0.83	0.33	-99.77	0.96	69.36	64.63	4.73	14.668	
1,600.00	1,598.61	1,583.01	1,598.61	1.66	0.89	0.38	-99.77	0.96	61.51	56.47	5.04	12.204	
1,700.00	1,698.30	1,682.70	1,698.30	1.77	0.95	0.43	-99.77	0.96	53.67	48.31	5.36	10.019	
1,800.00	1,798.00	1,782.40	1,798.00	1.89	1.00	0.51	-99.77	0.96	45.82	40.14	5.68	8.073	
1,900.00	1,897.69	1,882.09	1,897.69	2.01	1.06	0.61	-99.77	0.96	37.97	31.97	6.00	6.331	
2,000.00	1,997.38	1,981.78	1,997.38	2.13	1.11	0.77	-99.77	0.96	30.12	23.80	6.32	4.765	
2,100.00	2,097.07	2,081.47	2,097.07	2.25	1.17	1.04	-99.77	0.96	22.28	15.63	6.65	3.351	
2,200.00	2,196.76	2,181.16	2,196.76	2.38	1.23	1.61	-99.77	0.96	14.43	7.46	6.98	2.069	
2,300.00	2,296.45	2,280.85	2,296.45	2.50	1.28	3.52	-99.77	0.96	6.59	-0.71	7.31	0.902	Level 1
2,383.85	2,380.04	2,364.44	2,380.04	2.61	1.33	90.02	-99.77	0.96	0.40	-7.46	7.87	0.051	Level 1, CC, ES, SF

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Lime Rock Resources	**Local Co-ordinate Reference:**	Well #81
Project:	Eddy County NM (NAD 27)	**TVD Reference:**	RKB @ 3603.60usft
Reference Site:	Eagle 34J	**MD Reference:**	RKB @ 3603.60usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#81	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	1.00 sigma
Reference Wellbore	Original Hole	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1	**Offset TVD Reference:**	Reference Datum

Offset Design Eagle 34J - No.20 - Original Hole - Original Hole — **Offset Site Error:** 0.00 usft

Survey Program: 3552-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,400.00	2,396.15	2,380.55	2,396.15	2.63	1.34	162.28	-99.77	0.96	1.33	-6.33	7.66	0.174	Level 1
2,500.00	2,495.84	2,480.24	2,495.84	2.75	1.39	177.46	-99.77	0.96	9.12	1.16	7.97	1.145	Level 2
2,529.44	2,525.19	2,509.59	2,525.19	2.79	1.41	177.97	-99.77	0.96	11.43	3.37	8.07	1.417	Level 3
2,600.00	2,595.59	2,579.99	2,595.59	2.88	1.45	178.56	-99.77	0.96	16.10	7.80	8.30	1.939	
2,700.00	2,695.52	2,679.92	2,695.52	2.99	1.51	178.83	-99.77	0.96	19.75	11.11	8.63	2.287	
2,754.49	2,750.00	2,734.40	2,750.00	3.04	1.54	-1.92	-99.77	0.96	20.26	11.46	8.80	2.302	
2,800.00	2,795.51	2,779.91	2,795.51	3.09	1.56	-1.92	-99.77	0.96	20.26	11.32	8.94	2.265	
2,900.00	2,895.51	2,879.91	2,895.51	3.18	1.62	-1.92	-99.77	0.96	20.26	11.01	9.26	2.189	
3,000.00	2,995.51	2,979.91	2,995.51	3.28	1.67	-1.92	-99.77	0.96	20.26	10.69	9.57	2.117	
3,100.00	3,095.51	3,079.91	3,095.51	3.37	1.73	-1.92	-99.77	0.96	20.26	10.38	9.89	2.050	
3,200.00	3,195.51	3,179.91	3,195.51	3.47	1.79	-1.92	-99.77	0.96	20.26	10.06	10.20	1.986	
3,300.00	3,295.51	3,279.91	3,295.51	3.57	1.84	-1.92	-99.77	0.96	20.26	9.74	10.52	1.926	
3,400.00	3,395.51	3,379.91	3,395.51	3.66	1.90	-1.92	-99.77	0.96	20.26	9.42	10.84	1.869	
3,500.00	3,495.51	3,479.91	3,495.51	3.76	1.96	-1.92	-99.77	0.96	20.26	9.10	11.16	1.815	
3,552.26	3,547.77	3,532.17	3,547.77	3.82	1.98	-1.92	-99.77	0.96	20.26	8.93	11.33	1.788	
3,600.00	3,595.51	3,552.00	3,567.60	3.86	2.00	-1.92	-99.77	0.96	34.49	23.04	11.45	3.012	
3,700.00	3,695.51	3,552.00	3,567.60	3.96	2.00	-1.92	-99.77	0.96	129.51	117.85	11.66	11.105	
3,800.00	3,795.51	3,552.00	3,567.60	4.07	2.00	-1.92	-99.77	0.96	228.81	216.94	11.87	19.271	
3,900.00	3,895.51	3,552.00	3,567.60	4.17	2.00	-1.92	-99.77	0.96	328.54	316.46	12.09	27.186	
4,000.00	3,995.51	3,552.00	3,567.60	4.27	2.00	-1.92	-99.77	0.96	428.39	416.10	12.30	34.837	
4,100.00	4,095.51	3,552.00	3,567.60	4.37	2.00	-1.92	-99.77	0.96	528.30	515.79	12.51	42.230	
4,200.00	4,195.51	3,552.00	3,567.60	4.48	2.00	-1.92	-99.77	0.96	628.24	615.52	12.72	49.376	
4,300.00	4,295.51	3,552.00	3,567.60	4.58	2.00	-1.92	-99.77	0.96	728.20	715.26	12.94	56.285	
4,400.00	4,395.51	3,552.00	3,567.60	4.68	2.00	-1.92	-99.77	0.96	828.16	815.01	13.15	62.967	
4,500.00	4,495.51	3,552.00	3,567.60	4.79	2.00	-1.92	-99.77	0.96	928.14	914.77	13.37	69.433	
4,600.00	4,595.51	3,552.00	3,567.60	4.89	2.00	-1.92	-99.77	0.96	1,028.11	1,014.53	13.58	75.692	
4,700.00	4,695.51	3,552.00	3,567.60	5.00	2.00	-1.92	-99.77	0.96	1,128.10	1,114.30	13.80	81.754	
4,800.00	4,795.51	3,552.00	3,567.60	5.10	2.00	-1.92	-99.77	0.96	1,228.08	1,214.07	14.02	87.626	
4,900.00	4,895.51	3,552.00	3,567.60	5.21	2.00	-1.92	-99.77	0.96	1,328.07	1,313.84	14.23	93.318	
5,000.00	4,995.51	3,552.00	3,567.60	5.32	2.00	-1.92	-99.77	0.96	1,428.06	1,413.61	14.45	98.837	
5,100.00	5,095.51	3,552.00	3,567.60	5.42	2.00	-1.92	-99.77	0.96	1,528.05	1,513.38	14.67	104.190	
5,200.00	5,195.51	3,552.00	3,567.60	5.53	2.00	-1.92	-99.77	0.96	1,628.04	1,613.16	14.88	109.385	
5,254.49	5,250.00	3,552.00	3,567.60	5.59	2.00	-1.92	-99.77	0.96	1,682.52	1,667.52	15.00	112.151	

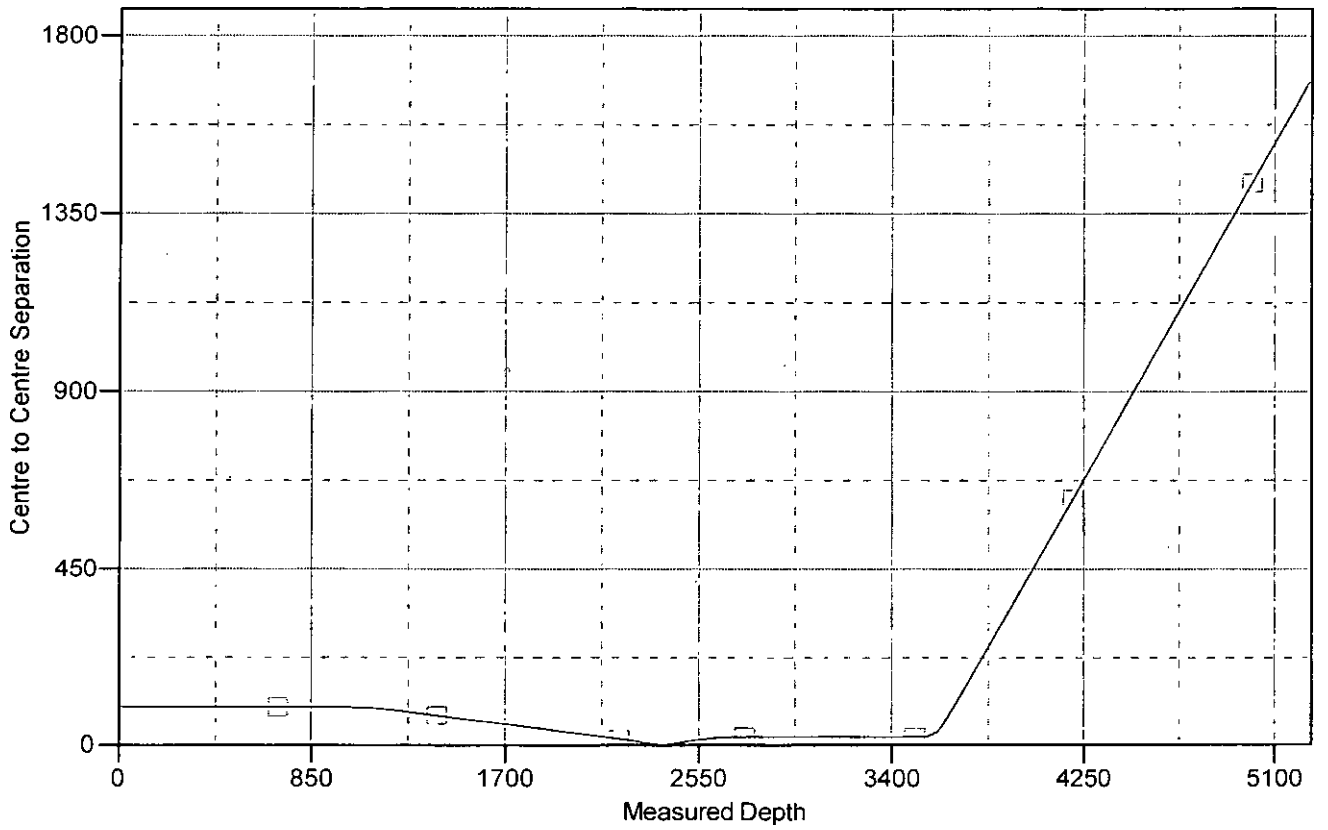
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Lime Rock Resources	**Local Co-ordinate Reference:**	Well #81
Project:	Eddy County NM (NAD 27)	**TVD Reference:**	RKB @ 3603.60usft
Reference Site:	Eagle 34J	**MD Reference:**	RKB @ 3603.60usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#81	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	1.00 sigma
Reference Wellbore	Original Hole	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to RKB @ 3603.60usft
Offset Depths are relative to Offset Datum
Central Meridian is -104.33334

Coordinates are relative to: #81
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.11°

Ladder Plot



LEGEND

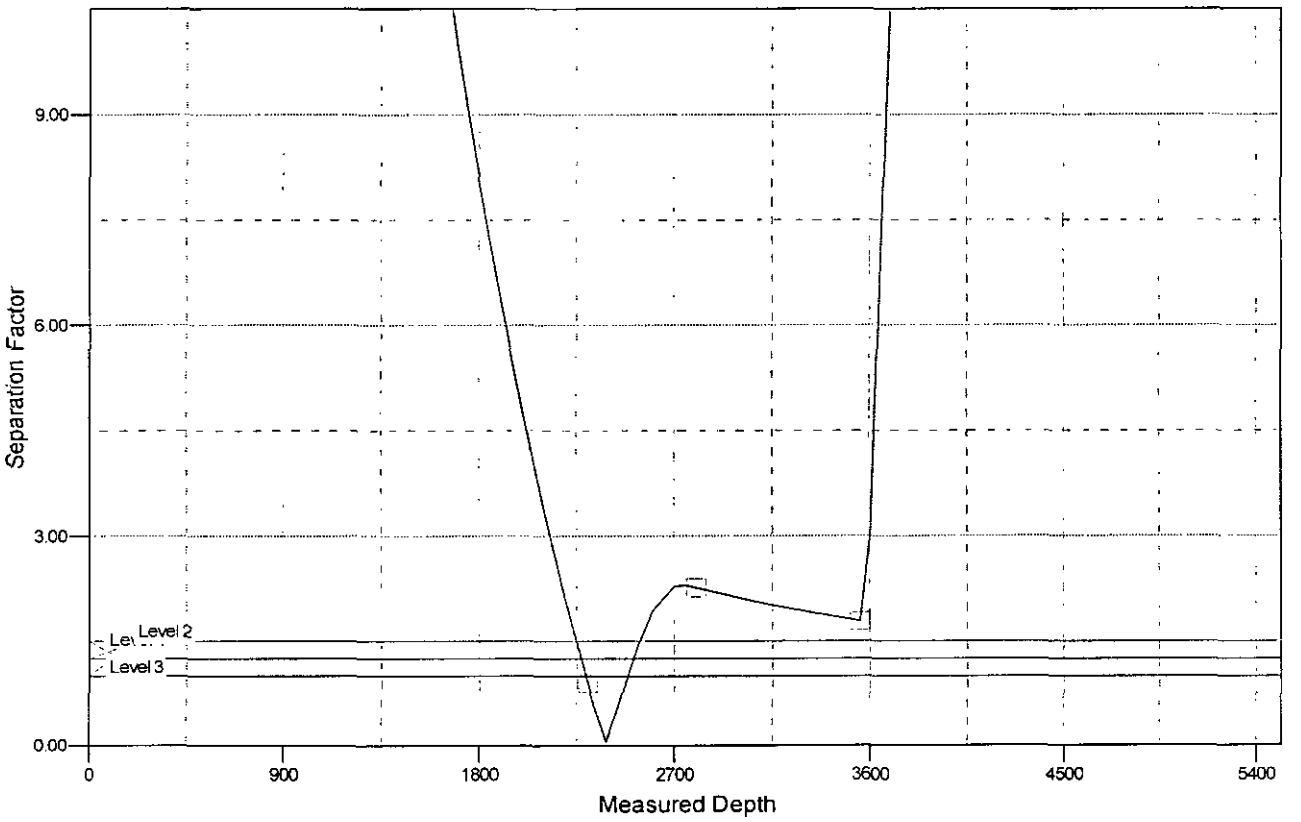
No.20, Original Hole, Original Hole V0

Company:	Lime Rock Resources	**Local Co-ordinate Reference:**	Well #81
Project:	Eddy County NM (NAD 27)	**TVD Reference:**	RKB @ 3603.60usft
Reference Site:	Eagle 34J	**MD Reference:**	RKB @ 3603.60usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#81	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	1.00 sigma
Reference Wellbore	Original Hole	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to RKB @ 3603.60usft
Offset Depths are relative to Offset Datum
Central Meridian is -104.33334

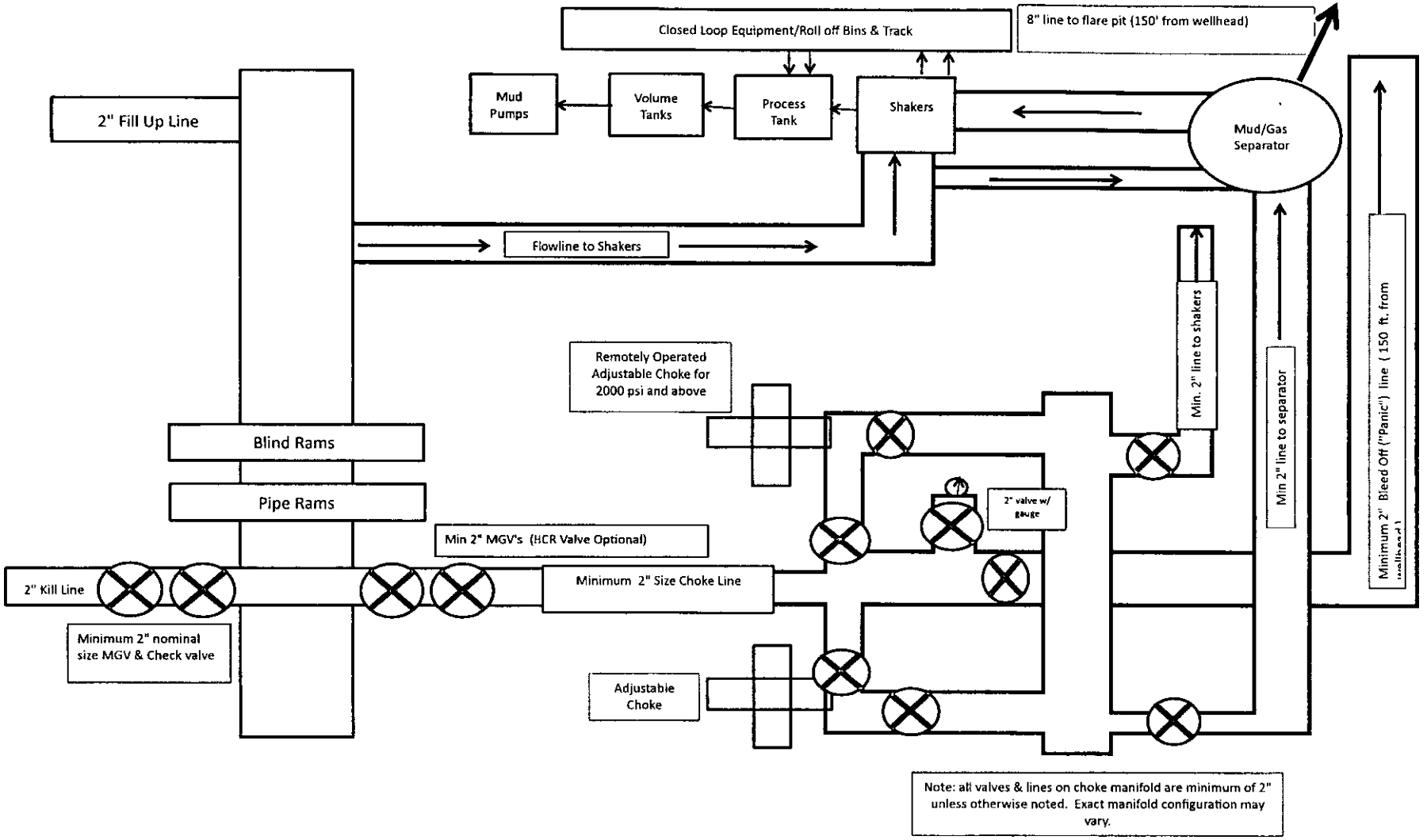
Coordinates are relative to: #81
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.11°

Separation Factor Plot



LEGEND

No.20, Original Hole, Original Hole V0



Note: all valves & lines on choke 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.

Eagle 34 J Federal 81

Section 34, T. 17 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.

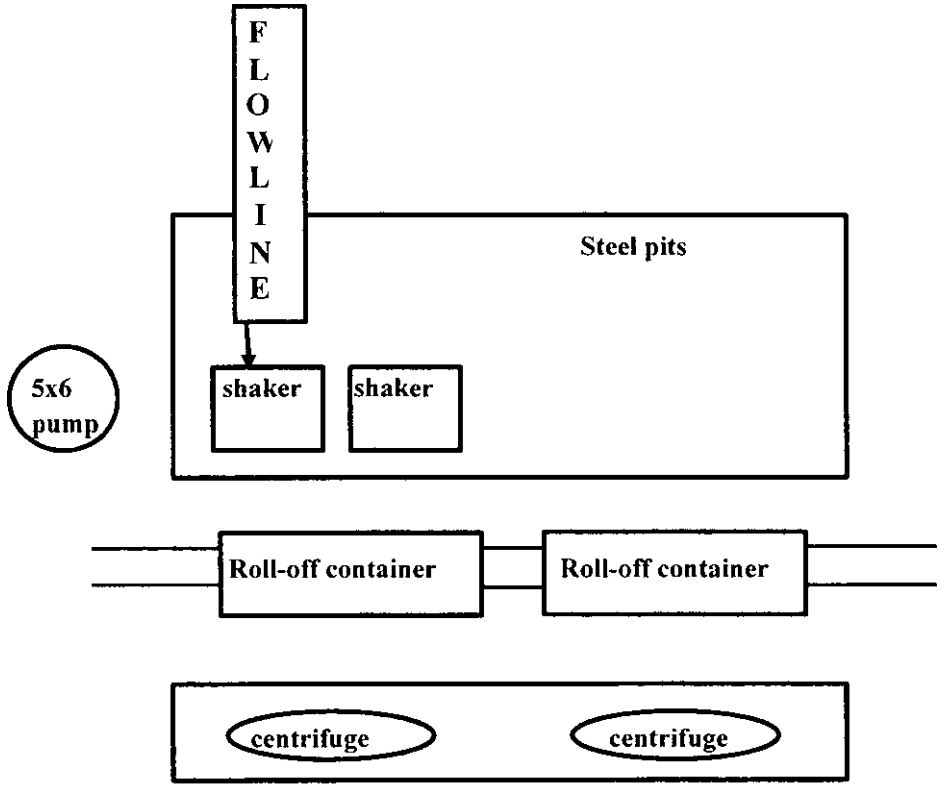
2- (250 bbl) tanks to hold fluid
2-CRI bins with track system
1-500 bbl frac tanks with fresh water
1-500 bbl frac tanks for brine water

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:

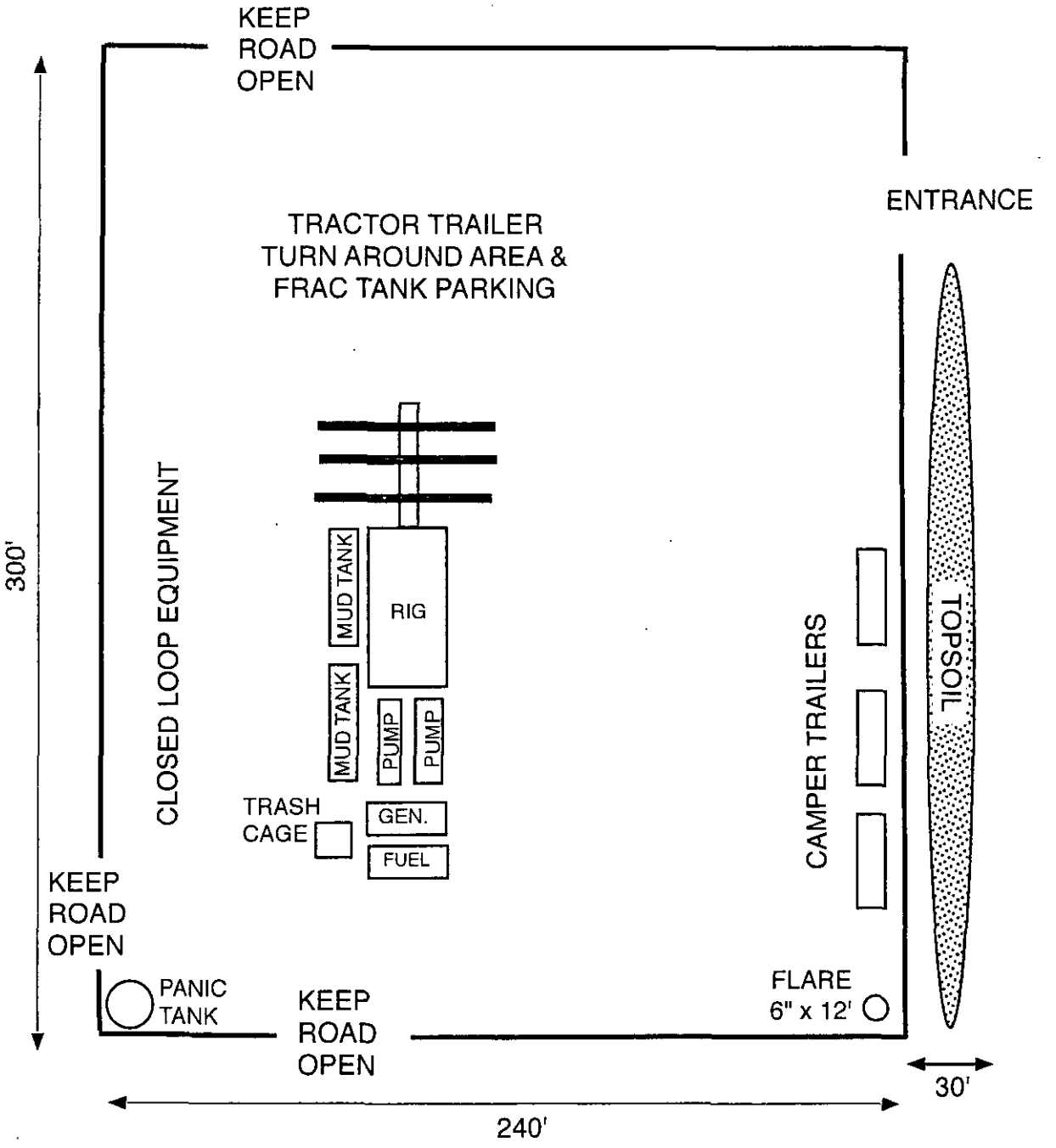
During drilling operations all liquids, drilling fluids and cuttings will be hauled off via CRI equipment to Disposal Facility Permit NM-01-0006.



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

Lime Rock's
Eagle 34 J Federal 81
rig diagram

NORTH
1" = 50'



PERMITS WEST, INC.
PROVIDING PERMITS for LAND USERS

Hydrogen Sulfide Drilling Plan Summary

A. All personnel will 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 will be placed at each breathing area, 2 will be stored in the safety trailer.
  b. Work/Escape packs — 4 packs will 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 will 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
GARY MCCELLAND	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	903-503-8997	NA
DAVE WILLIAMSON	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	575-308-9980	NA

Agency Call List		
City	Agency or Office	Phone
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

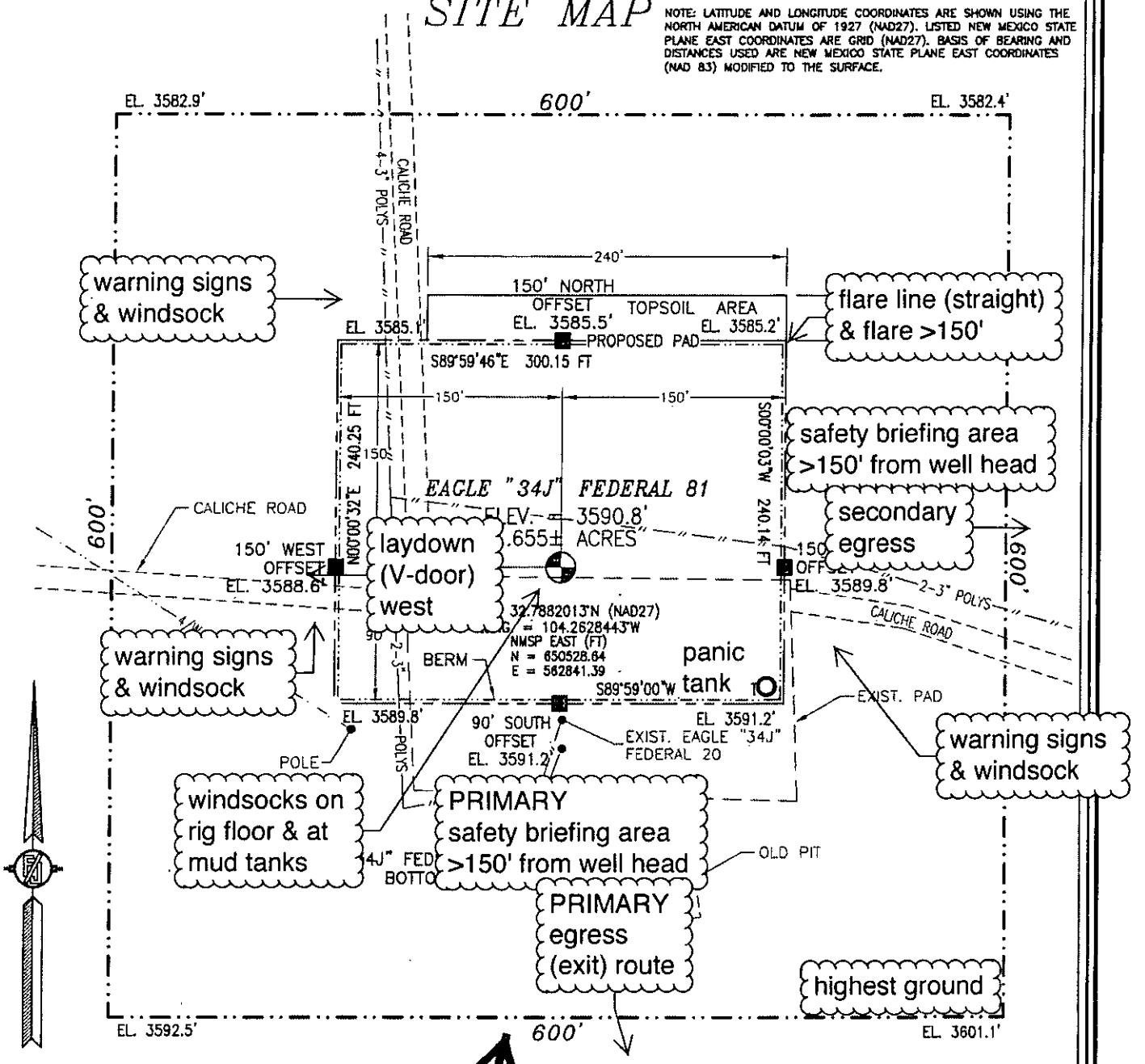
Emergency Services				
Name	**Service**	**Location**	**Phone**	**Alternate**
Boots & Coots International Well Control	Well Control	Houston / Odessa	1-800-256-9688	281-931-8884
Cudd Pressure Control	Well Control & Pumping	Odessa	915-699-0139	915-563-3356
Baker Hughes Inc.	Pumping Service	Artesia, Hobbs 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

H2S PAGE 5

SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, EDDY COUNTY, STATE OF NEW MEXICO

SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1927 (NAD27). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD27). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES (NAD 83) MODIFIED TO THE SURFACE.



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM CR 225 (EMPIRE) AND CR 227 (LITTLE DIAMOND) GO SOUTHWEST ON CR 227 0.5 MILE, TURN RIGHT ON CALICHE ROAD AND GO NORTH 0.1 MILE, BEND LEFT AND GO NORTHWEST 0.7 MILE, TURN RIGHT AND GO EAST 0.11 MILE, TURN LEFT AND GO NORTH 0.1 MILE, TURN RIGHT AND GO EAST 0.25 MILE, TURN RIGHT AND GO SOUTH 660' AND LOCATION IS 94' ON THE LEFT (EAST).

LIME ROCK RESOURCES II-A, L.P.

EAGLE "34J" FEDERAL 81

LOCATED 1790 FT. FROM THE SOUTH LINE AND 1650 FT. FROM THE EAST LINE OF SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

APRIL 1, 2015

SURVEY NO. 2346

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

LIME ROCK RESOURCES

Eagle 34 J Federal #81
H_2S Contingency Plan:
1 Mile Radius Map

Section 34, Township 17S, Range 27E
Eddy County, New Mexico

Eagle 34 J Federal #81

1:13,500

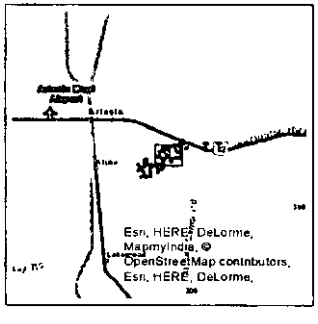
0 0.125 0.25 0.5
Miles

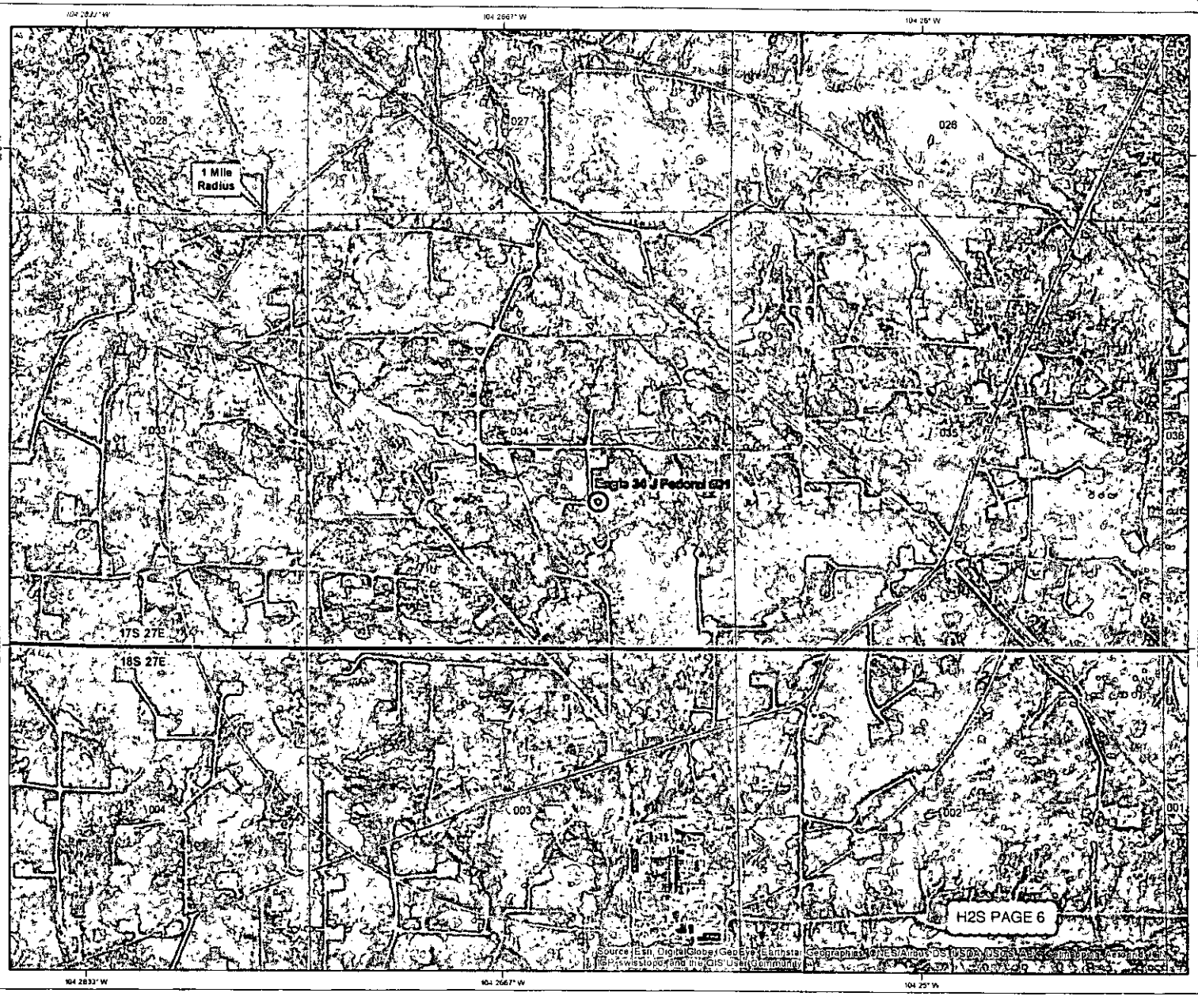
N

NAD 1927 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST, INC.

Prepared by Permits West, Inc., June 11, 2015
for Lime Rock Resources II-A, L.P.





LIME ROCK RESOURCES

Eagle 34 J Federal #81
H_2S Contingency Plan:
2 Mile Radius Map

Section 34, Township 17S, Range 27E
Eddy County, New Mexico

Eagle 34 J Federal #81

1:27,000

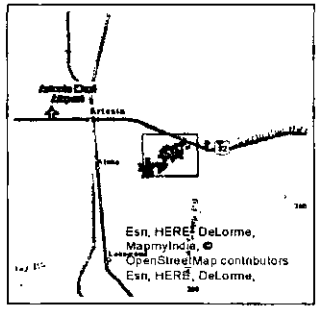
0 0.25 0.5 1
Miles

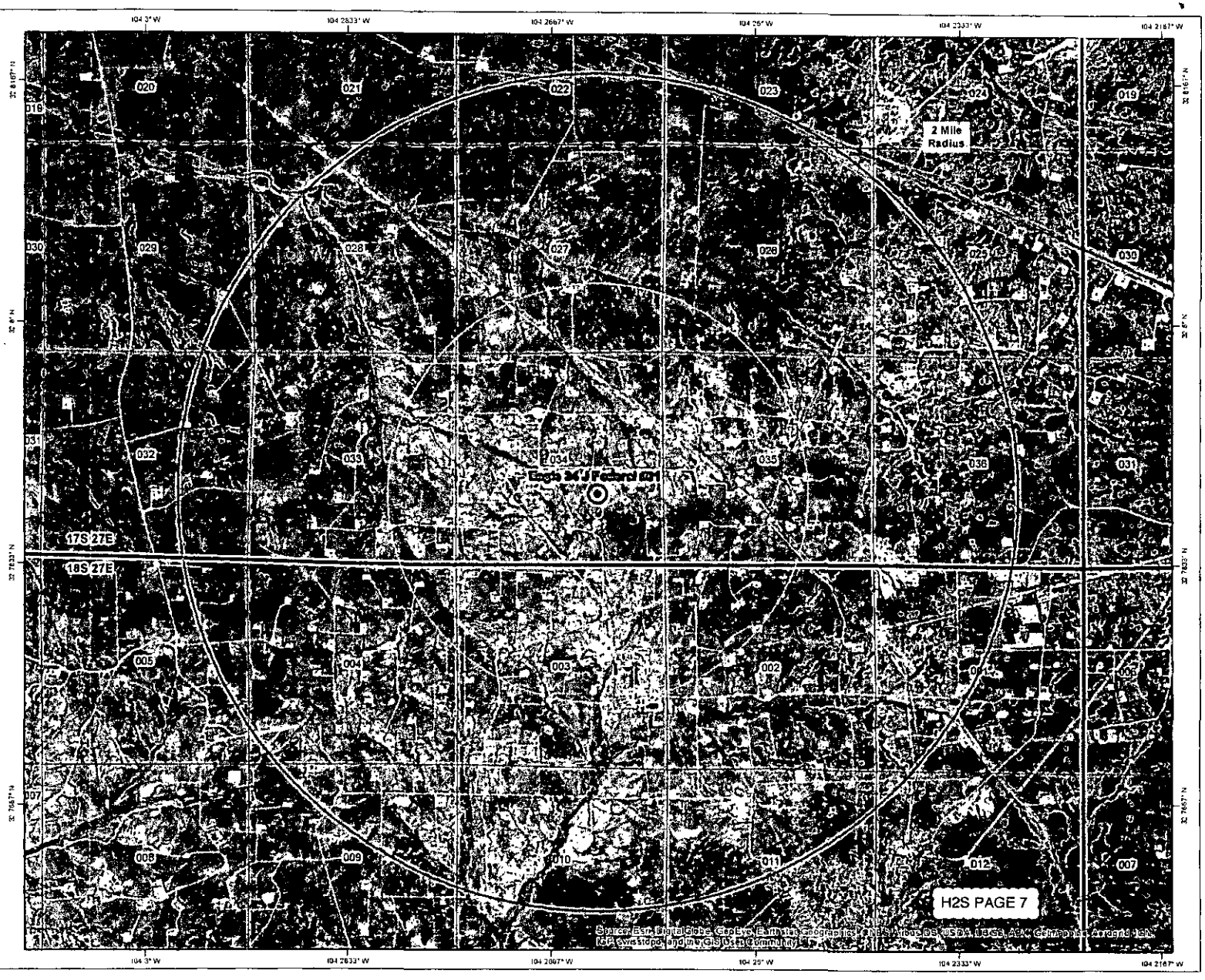
N

NAD 1927 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST, INC.

Prepared by Permits West, Inc., June 11, 2015
for Lime Rock Resources II-A, L.P.

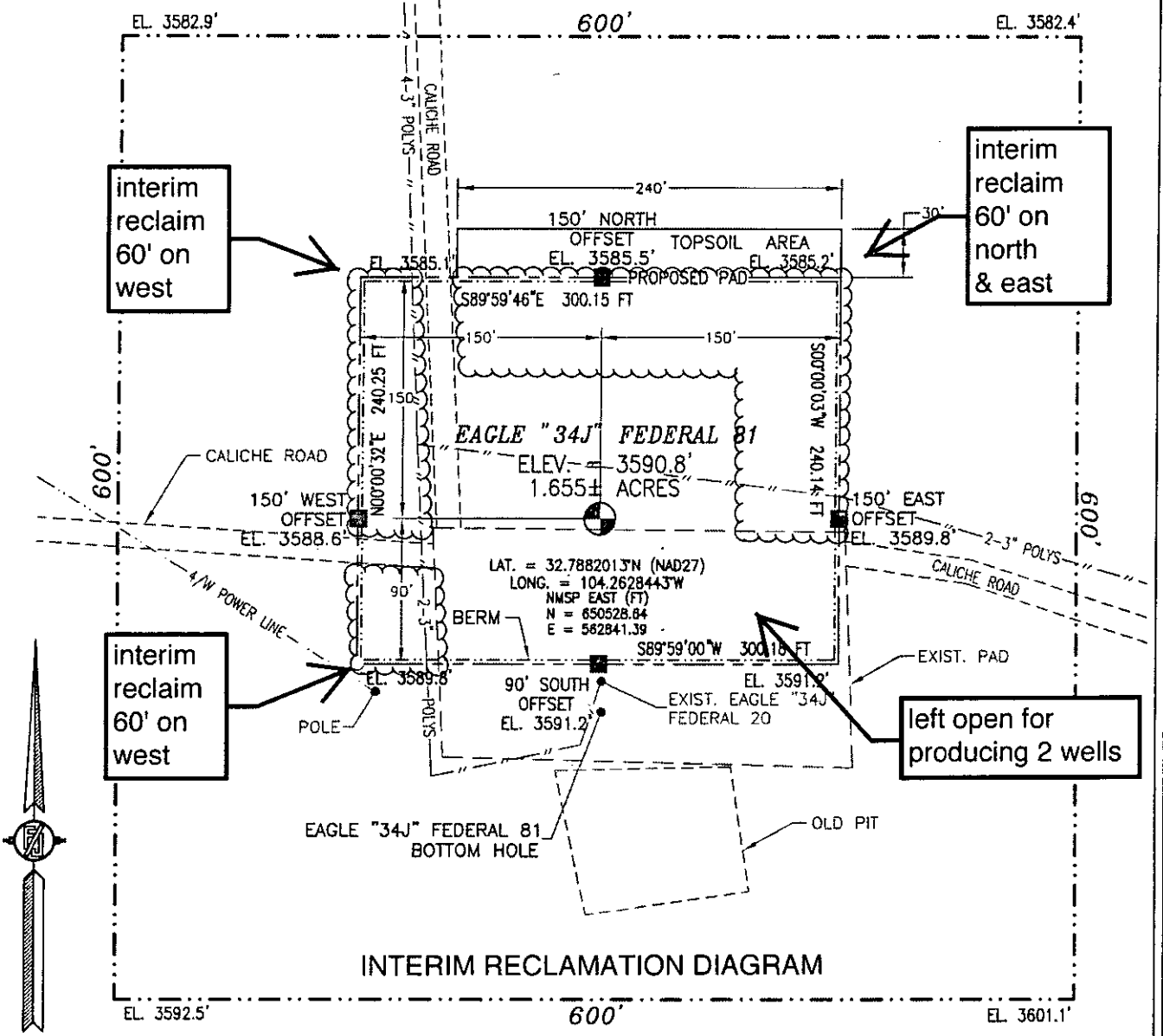




SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1927 (NAD27). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD27). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES (NAD 83) MODIFIED TO THE SURFACE.



INTERIM RECLAMATION DIAGRAM

010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM CR 225 (EMPIRE) AND CR 227 (LITTLE DIAMOND) GO SOUTHWEST ON CR 227 0.5 MILE, TURN RIGHT ON CALICHE ROAD AND GO NORTH 0.1 MILE, BEND LEFT AND GO NORTHWEST 0.7 MILE, TURN RIGHT AND GO EAST 0.11 MILE, TURN LEFT AND GO NORTH 0.1 MILE, TURN RIGHT AND GO EAST 0.25 MILE, TURN RIGHT AND GO SOUTH 880' AND LOCATION IS 94' ON THE LEFT (EAST).

LIME ROCK RESOURCES II-A, L.P.

EAGLE "34J" FEDERAL 81

LOCATED 1790 FT. FROM THE SOUTH LINE AND 1650 FT. FROM THE EAST LINE OF SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

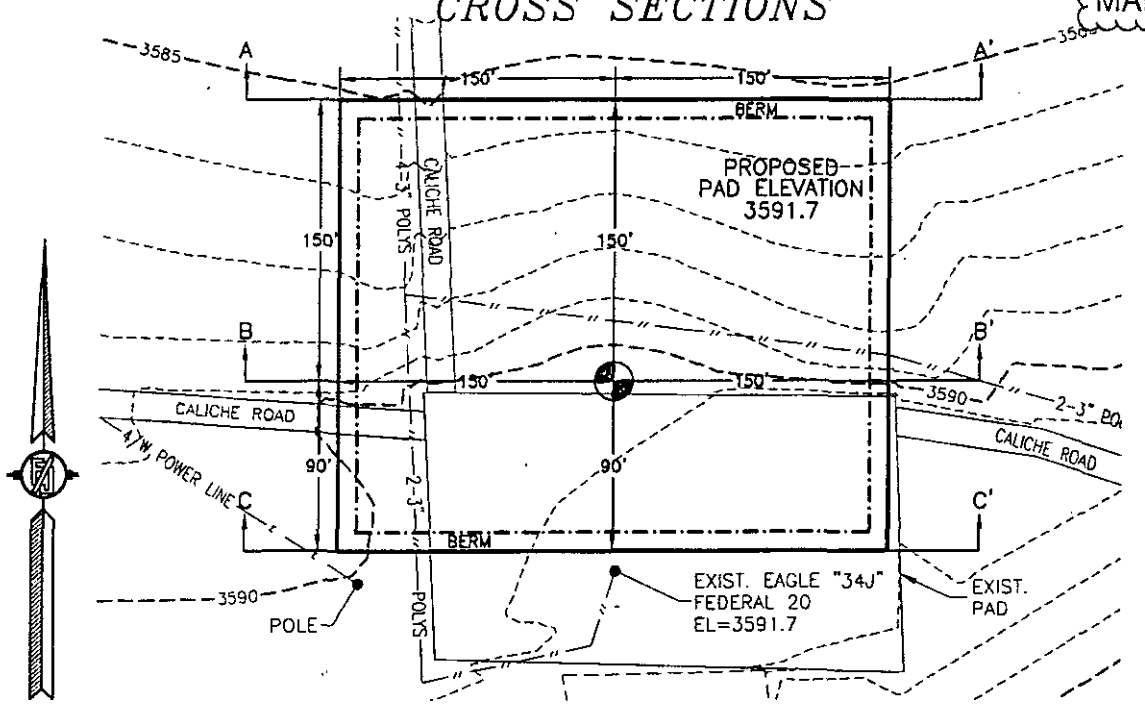
APRIL 1, 2015

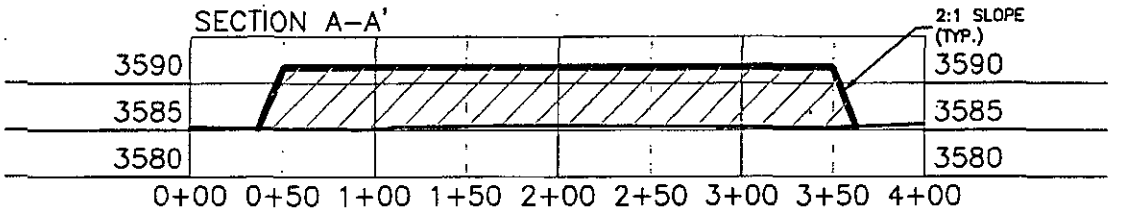
SURVEY NO. 2346

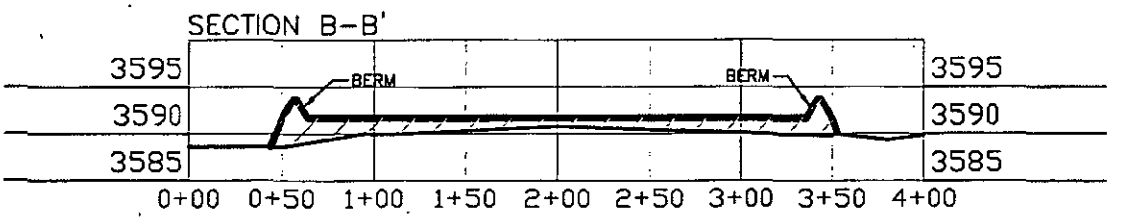
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

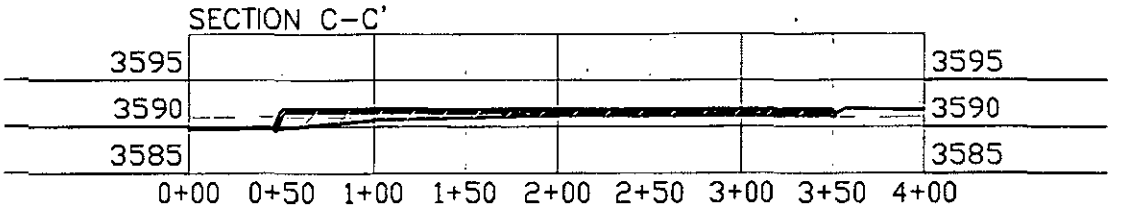
EAGLE "34J" FEDERAL 81
CROSS SECTIONS

MAP 4.1









LIME ROCK RESOURCES II-A, L.P.
EAGLE "34J" FEDERAL 81
LOCATED 1970 FT. FROM THE SOUTH LINE AND 1650 FT. FROM THE EAST LINE OF SECTION 34, TOWNSHIP 17 SOUTH, RANGE 27 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

010 50 100 200
SCALE 1" = 100' HORZ.
SCALE 1" = 20' VER.

CUT	FILL	NET
0 CU. YD	9370 CU. YD	9370 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

FEBRUARY 23, 2016

SURVEY NO. 2346A

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

Surface Use Plan

1. ROAD DIRECTIONS & DESCRIPTIONS (See MAPS 1 - 4)

From the center of Artesia...
Go East 9.3 miles on US 82 to the equivalent of Mile Post 116.8
Then turn right and go South 1/4 mile on paved County Road 204
Then turn right and go Southwest 2.1 miles on paved County Road 225
Then bear right and go Southwest 1/2 mile on County Road 227
Then turn right and go North 0.1 mile on a caliche road
Then bear left and go Northwest 0.7 mile on a caliche road
Then bear right and go East 0.1 mile on a caliche road south of a battery
Then turn left and go North 0.1 mile on a caliche road
Then turn right and go East 1/4 mile on a caliche road
Then turn right and go South 0.1 mile on a caliche road onto the existing 20 pad and proposed 81 pad

Non-county roads will be maintained as needed to Gold Book standards. This includes pulling ditches, preserving the crown, and cleaning culverts. This will occur at least once a year, and more often as needed. Caliche will be hauled from Lime Rock's approved (HA-0258-0000) caliche pit on State land in NESE 36-17s-27e. Access to the lease will be via existing NMNM-096616.

2. ROAD TO BE BUILT OR UPGRADED (See MAPS 3 & 4)

No new road is needed. (The proposed 81 pad overlaps the producing 20 pad.)
No upgrade is needed.

3. EXISTING WELLS (See MAP 2)

Existing oil, gas, injection, and P & A wells are within a mile. No disposal or water wells are within a mile radius.

4. PROPOSED PRODUCTION FACILITIES (See MAPS 3 - 10)

The only production equipment on the pad will be the pump jack. Two 3" O. D. poly surface pipelines (one gas and one production) will be laid 2,213.46' west to Lime Rock's existing battery header. Pipelines will operate at ≈50 psi.

A 77.6' long overhead raptor safe power line will be built northeast to the pad.

5. WATER SUPPLY (See MAPS 1 - 4)

Water will be trucked from existing wells on private land between Artesia and Riverside.

6. CONSTRUCTION MATERIALS & METHODS

NM One Call (811) will be notified before construction starts. Topsoil and brush will be stockpiled north of the pad. V door will be to the west. A closed loop drilling system will be used. Eagle 34 J Federal 15 reserve pit will not be excavated. Caliche will be bought and hauled from Lime Rock's approved (HA-0258-0000) caliche pit on State land in NESE 36-17s-27e.

An on pad berm (MAP 4) will surround the pad to prevent off site migration of soil. A geotextile fabric fence will be at the toe of the fill to prevent further migration. The fence bottom will be buried to prevent gaps.

7. WASTE DISPOSAL

All trash will be placed in a portable trash cage. It will be hauled to the Eddy County landfill. There will be no trash burning. Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to CRI's state approved (NM-01-0006) disposal site. Human waste will be disposed of in chemical toilets and hauled to the Artesia wastewater treatment plant.

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 Diagram 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 shrinking the pad ≈55% by removing caliche and reclaiming 60' wide swaths on the east, north, and west sides of the pad, leaving a ≈180' x ≈180' area around the pump jack. Disturbed areas will be contoured to match pre-construction grades. 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 Paul Murphy (BLM) on March 27, 2015.

Boone conducted a records search with Hila Nelson June 18, 2015. Due to multiple previous archaeology surveys, it was determined that no further survey was needed.

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Lime Rock Resources II A LP
LEASE NO.:	NM0557370
WELL NAME & NO.:	81-Eagle 34 J Federal
SURFACE HOLE FOOTAGE:	1790'/S & 1650'/E
BOTTOM HOLE FOOTAGE	1670'/S & 1650'/E
LOCATION:	Section 34, T. 17 S., R. 27 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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)

Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. The holder without liability or expense shall make such modifications and/or additions to the United States.

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 entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Tank Battery Liners and Berms:
Tank battery locations and all facilities 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.

Powerlines:
Smaller powerlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems. Larger powerlines will adjust their pole spacing to avoid cave and karst features. The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction and no further construction will be done until clearance has been issued by the Authorized Officer. Special restoration stipulations or realignment may be required.

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 strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area 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.

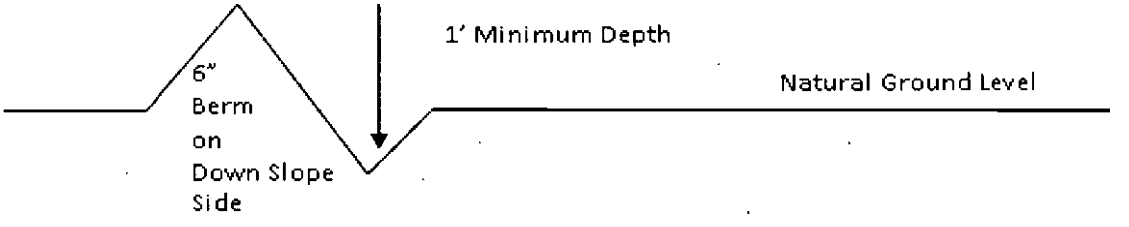
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

Cattleguards

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route 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 cattleguards that are in place and are utilized during lease operations.

Fence Requirement

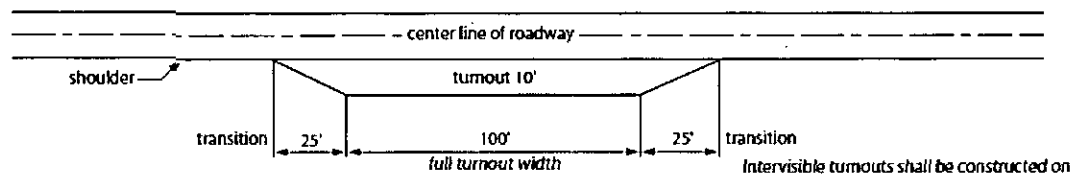
Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

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

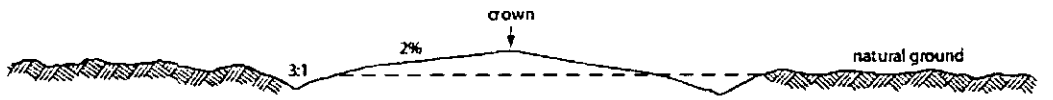
Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

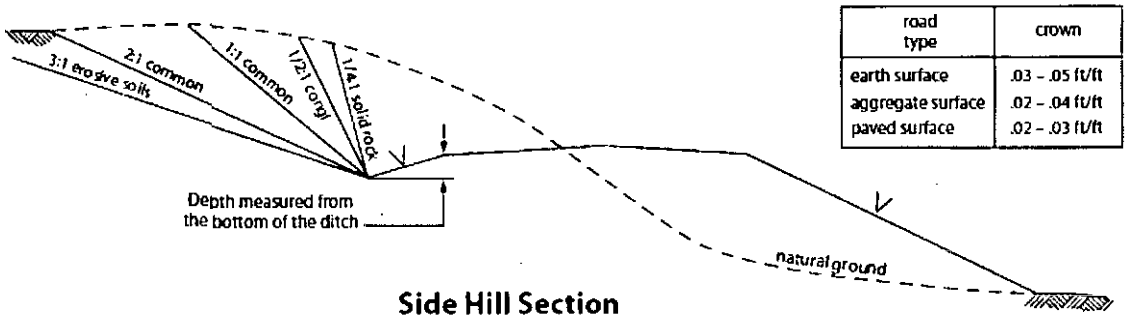


Intervisible turnouts shall be constructed on all single lane roads on all blind curves with additional turnouts as needed to keep spacing below 1000 feet.

Typical Turnout Plan

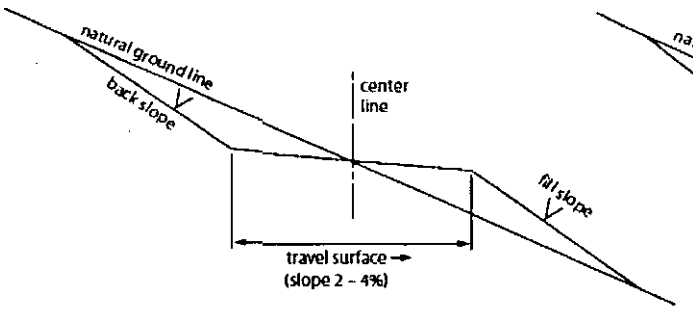


Level Ground Section

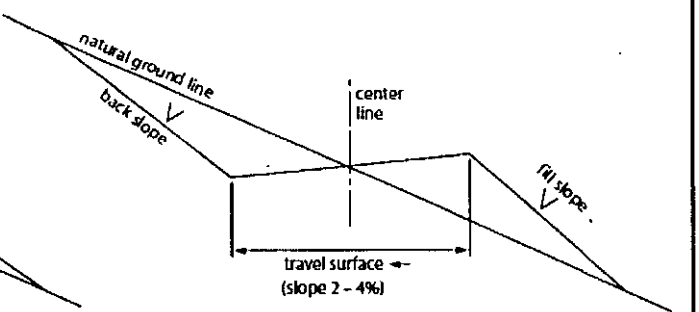


road type	crown
earth surface	.03 - .05 ft/ft
aggregate surface	.02 - .04 ft/ft
paved surface	.02 - .03 ft/ft

Side Hill Section



Typical Outsloped Section



Typical Inslope Section

Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) 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 or are Non-API. 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.). The initial wellhead installed on the well will remain on the well with spools used as needed.

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

Wait on cement (WOC) for Water Basin:
After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

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

Possibility of water flows in the San Andres and Artesia Group.
Possibility of lost circulation in the Rustler, San Andres, Glorieta and Delaware.

Contingency Surface Casing Plan:

1. The **13-3/8** inch **contingency surface casing** shall be set at approximately **375** 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.

Casing Plan without Contingency:

2. The **8-5/8** inch intermediate casing shall be set at approximately **350** feet and cemented to the surface. **(If contingency casing is used set 8-5/8" casing 50 feet below 13-3/8" shoe.)**

   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. **Contingency** - Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13-3/8 inch** surface casing shoe shall be **2000 (2M)** psi. Operator is approved to test against the casing for the contingency plan.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **8-5/8 inch** surface casing shoe shall be **2000 (2M)** psi.

4. 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. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two 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. 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.

CLN 121615

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).

B. PIPELINES
STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the Grant and attachments, including stipulations, survey plat(s) and/or map(s), shall be on location during construction. BLM personnel may request to review a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC § 2601 *et seq.* (1982) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant (*see* 40 CFR, Part 702-799 and in particular, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. Holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601, *et seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way Holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way Holder on the Right-of-Way. This provision applies without regard to whether a release is caused by Holder, its agent, or unrelated third parties.

4. Holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. Holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;

b. Activities of other parties including, but not limited to:
   (1) Land clearing
   (2) Earth-disturbing and earth-moving work
   (3) Blasting
   (4) Vandalism and sabotage;

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of Holder, regardless of fault. Upon failure of Holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he/she deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of Holder. Such action by the Authorized Officer shall not relieve Holder of any responsibility as provided herein.

6. All construction and maintenance activity shall be confined to the authorized right-of-way width of **20** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline shall be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline shall be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity shall be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.

8. Holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline shall be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green,** Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will

be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. 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, powerline 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.

17. Surface pipelines shall be less than or equal to 4 inches and a working pressure below 125 psi.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to

the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land

shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:
    - For reclamation remove poles, lines, transformer, etc. and dispose of properly.
    - Fill in any holes from the poles removed.

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 1 for Loamy Sites

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 shall 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 shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may 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
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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

NMOCD CONDITION OF APPROVAL

The *New!* Gas Capture Plan (GCP) notice is posted on the NMOCD website under Announcements. The Plan became effective May 1, 2016. A copy of the GCP form is included with the NOTICE and is also in our FORMS section under Unnumbered Forms. Please review filing dates for all applicable activities currently approved or pending and submit accordingly. Failure to file a GCP may jeopardize the operator's ability to obtain C-129 approval to flare gas after the initial 60-day completion period.