

## OCD-ARTESIA

ATS-08-753

Form 3160-3  
(April 2004)

DEC - 2 2008

OCD-ARTESIA

UNITED STATES

DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

S

FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007

## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. LC-060524	
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Cimarex Energy Co. of Colorado		7. If Unit or CA Agreement, Name and No.	
3a. Address PO Box 140907 Irving, TX 75014		8. Lease Name and Well No. Poseidon 3 Federal No. 1	
3b. Phone No. (include area code) 972-401-3111		9. API Well No. 30-015- 36820	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 311 FSL & 104 FWL At proposed prod. Zone 349 FSL & 558 FWL <i>Orthodox For Formations below Glorieta</i>		10. Field and Pool, or Exploratory Loco Hills; Glorieta-Yeso	
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area 3-17S-30E	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig unit line if any) 104'		12. County or Parish Eddy	
16. No of acres in lease 240		13. State NM	
17. Spacing Unit dedicated to this well SWSW 40			
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1,116'		19. Proposed Depth MD 6023' TVD 6000'	
20. BLM/BIA Bond No. on File NM-2575			
21. Elevations (Show whether DF, KDB, RT, GL, etc ) 3704' GR		22. Approximate date work will start* 11.15.08	
23. Estimated duration 20-25 days			

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

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

25. Signature <i>Zeno Farris</i>	Name (Printed/Typed) Zeno Farris	Date 10.23.08
Title Manager Operations Administration		
Approved By (Signature) <i>/s/ James A. Amos</i>	Name (Printed/Typed) <i>/s/ James A. Amos</i>	Date NOV 28 2008
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. 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.

\* (Instructions on page 2)

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Roswell Controlled Water Basin

Approval Subject to General Requirements  
& Special Stipulations Attached

## DISTRICT I

1625 N. French Dr., Hobbs, NM 88240

## DISTRICT II

1301 W. Grand Avenue, Artesia, NM 88210

## DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

## DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources DepartmentForm C-102  
Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

## OIL CONSERVATION DIVISION

1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-015-36820</b>	Pool Code 96718	Pool Name Loco Hills; Glorieta-Yeso
Property Code <b>37350</b>	Property Name POSEIDON "3" FEDERAL	Well Number 1
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3704'

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	3	17 S	30 E		311	SOUTH	104	WEST	EDDY

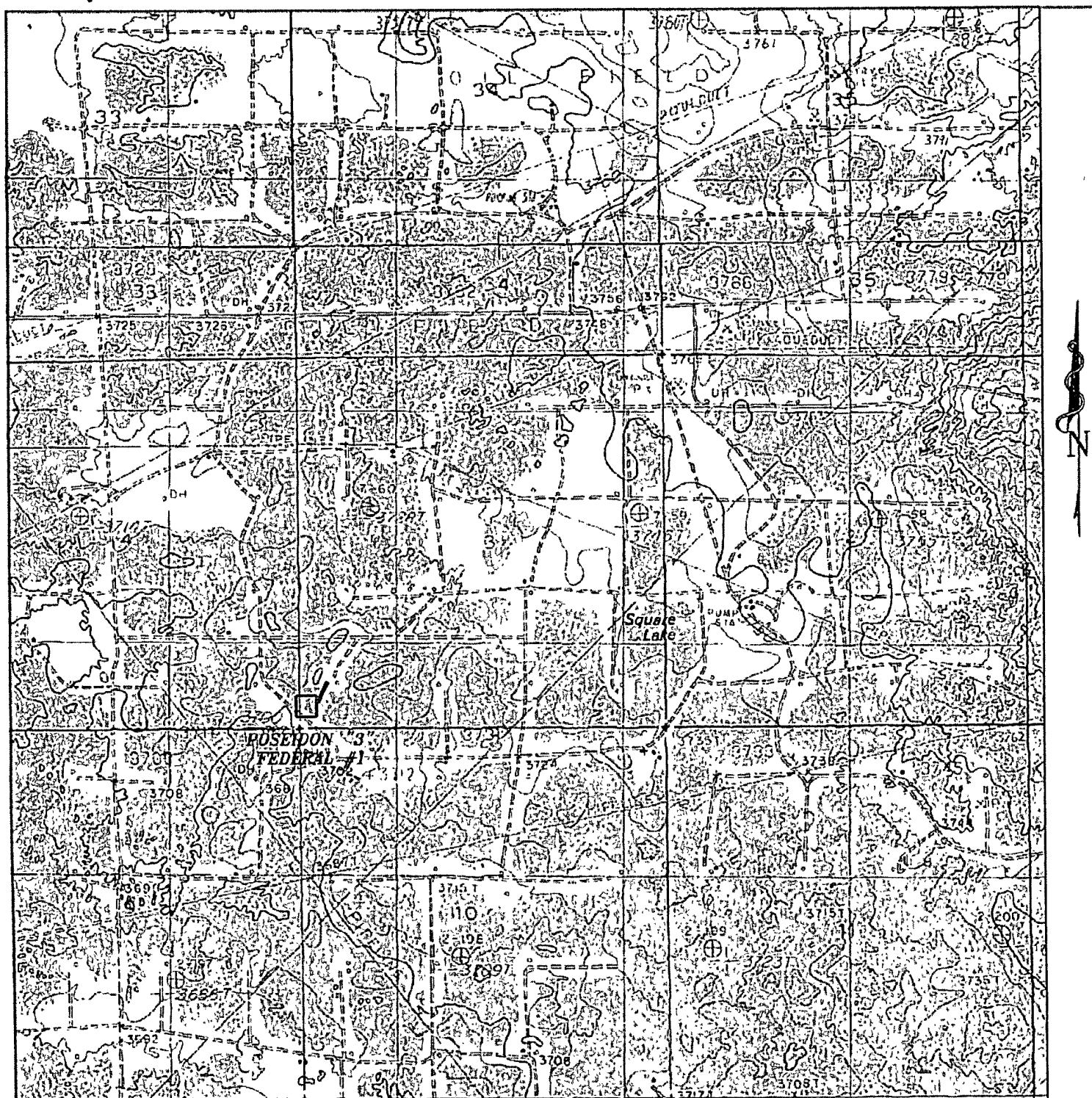
## Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	3	17 S	30 E		349	SOUTH	558	WEST	EDDY

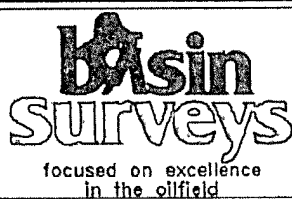
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40	Y		

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

<p><b>SURFACE LOCATION</b> Lat - N32°51'25.69" Long - W103°58'04.87" NMSPC - N 675753.8 E 653514.5 (NAD-83)</p> <p><b>BOTTOM HOLE LOCATION</b> Lat - N32°51'26.06" Long - W103°57'59.55" NMSPC - N 675792.55 E 653967.99 (NAD-83)</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>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 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.</p> <p><u>Zeno Farris</u> 10-23-08 Signature Date</p> <p><u>Zeno Farris</u> Printed Name</p> <p><b>SURVEYOR CERTIFICATION</b></p> <p>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.</p> <p>JULY 29, 2008 Date Surveyed</p> <p><u>Gary L. Jones</u> Signature of Surveyor</p> <p><u>7977</u> Professional Surveyor No.</p> <p>Certificate No. Gary L. Jones 7977</p> <p>BASIN SURVEYS</p>
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**POSEIDON "3" FEDERAL #1**  
 Located 311' FSL and 104' FWL  
 Section 3, Township 17 South, Range 30 East,  
 N.M.P.M., Eddy County, New Mexico.



P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (505) 393-7316 - Office  
 (505) 392-3074 - Fax  
 basinsurveys.com

W.O. Number: JMS 20151

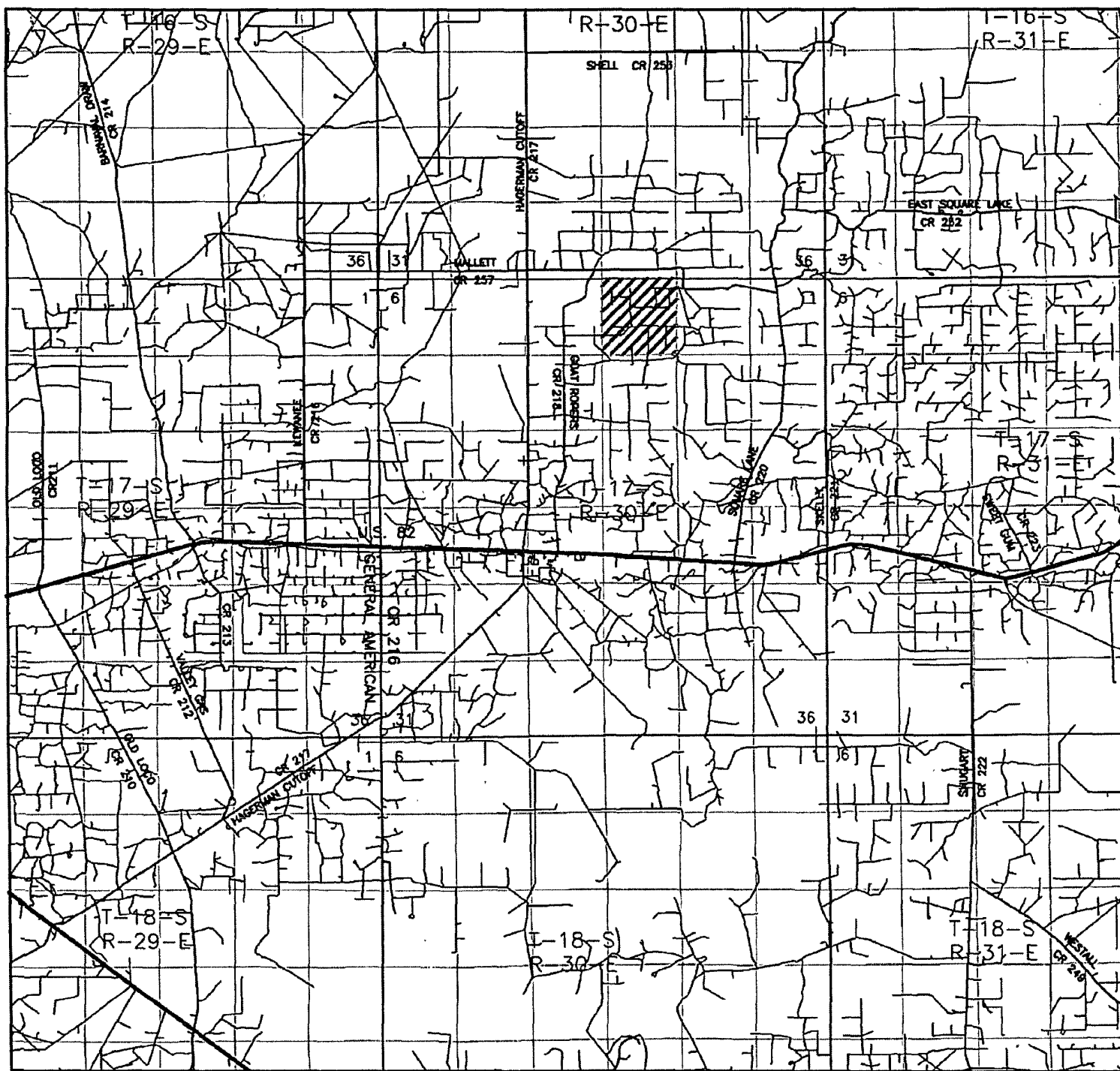
Survey Date: 07-29-2008

Scale: 1" = 2000'

Date: 07-30-2008

**CIMAREX**  
**ENERGY CO.**  
**OF COLORADO**

**Exhibit C**



POSEIDON "3" FEDERAL #1  
 Located 311' FSL and 104' FWL  
 Section 3, Township 17 South, Range 30 East,  
 N.M.P.M., Eddy County, New Mexico.

**basin**  
**surveys**  
 focused on excellence  
 in the oilfield

P.O. Box 1786  
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 (505) 393-7316 - Office  
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W.O. Number: JMS 20151

Survey Date: 07-29-2008

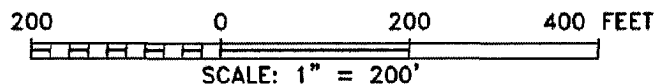
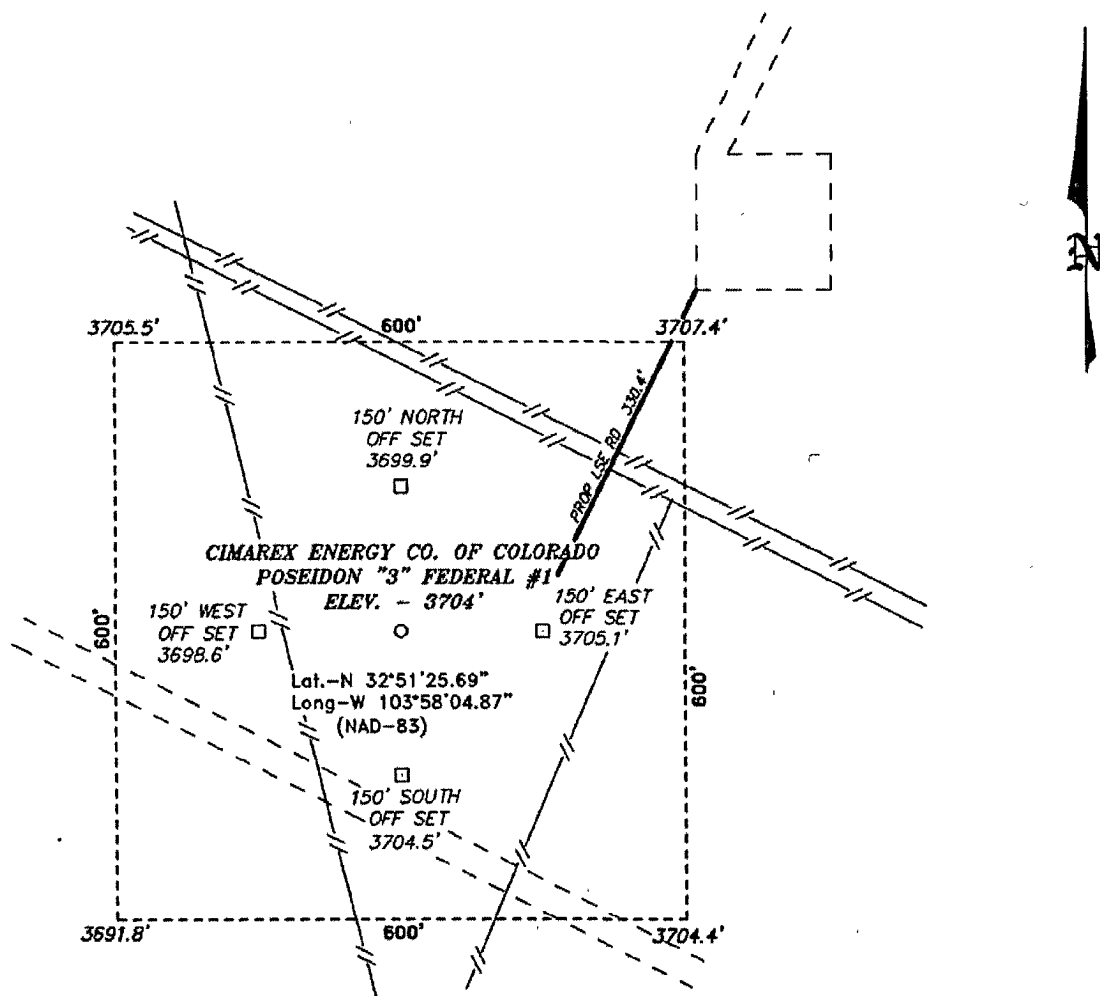
Scale: 1" = 2 MILES

Date: 07-30-2008

**CIMAREX**  
**ENERGY CO.**  
**OF COLORADO**

Exhibit B

SECTION 3, TOWNSHIP 17 SOUTH, RANGE 30 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF OF HWY 82 AND GOAT ROPERS, GO NORTH ON GOAT ROPERS FOR 1.8 MILES TO LEASE ROAD, ON LEASE ROAD GO EAST 0.9 MILES, THENCE NORTH 0.5 MILES; THENCE EAST 0.2 MILES; THENCE NORTH 0.3 MILES; THENCE WEST 0.6 MILES; TO PROPOSED LEASE ROAD.

**BASIN SURVEYS** P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 20151 Drawn By: J. SMALL

Date: 07-30-2008 Disk: JMS 20151

**CIMAREX ENERGY CO. OF COLORADO**

REF: POSEIDON "3" FEDERAL #1 / WELL PAD TOPO

THE POSEIDON "3" FEDERAL #1 LOCATED 311'  
FROM THE SOUTH LINE AND 104' FROM THE WEST LINE OF  
SECTION 3, TOWNSHIP 17 SOUTH, RANGE 30 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 07-29-2008 Sheet 1 of 1 Sheets

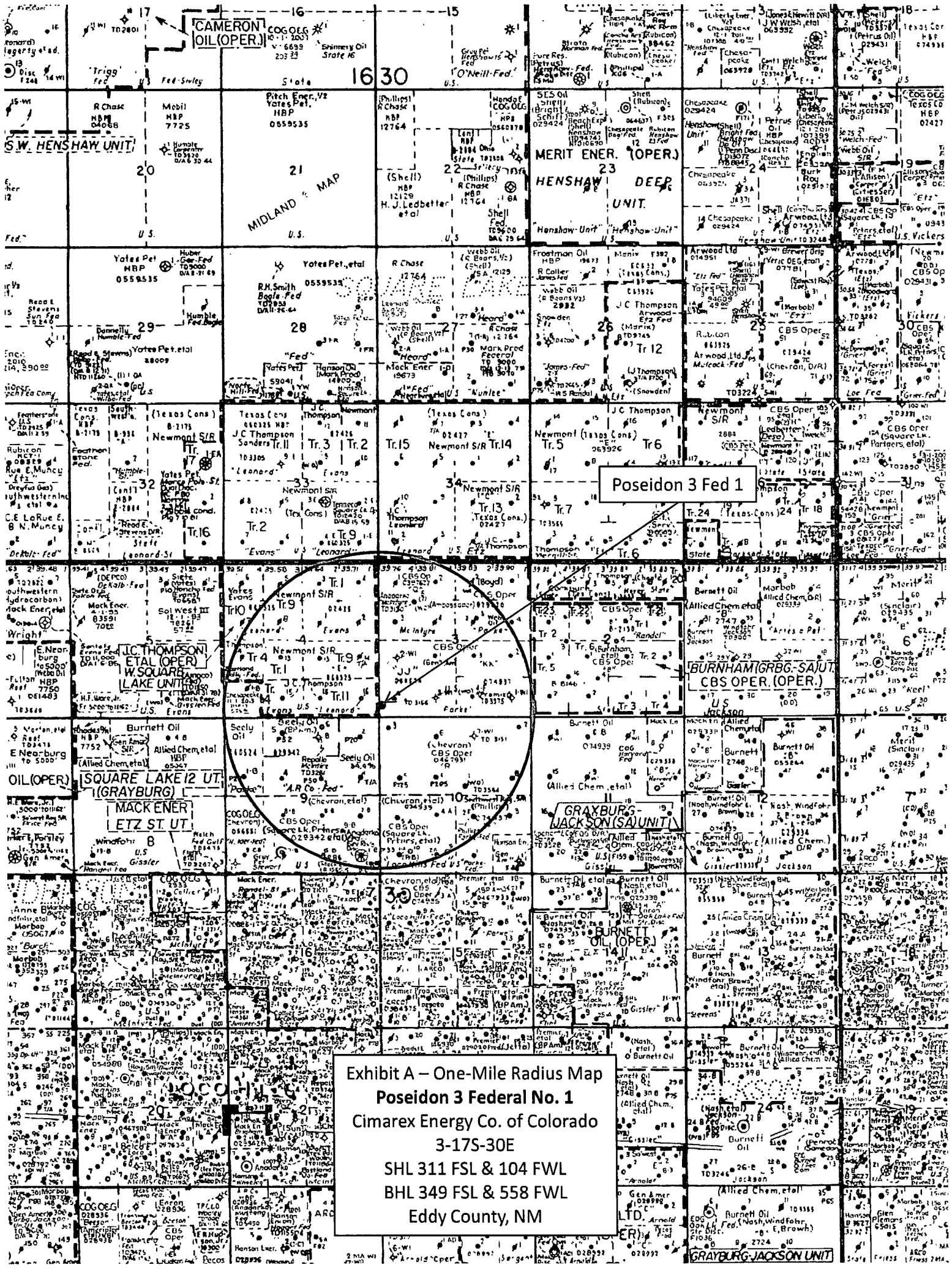


Exhibit A – One-Mile Radius Map  
Poseidon 3 Federal No. 1  
Cimarex Energy Co. of Colorado  
3-17S-30E  
SHL 311 FSL & 104 FWL  
BHL 349 FSL & 558 FWL  
Eddy County, NM

**Application to Drill**  
**Poseidon 3 Federal No. 1**  
**Cimarex Energy Co. of Colorado**  
Unit M, Section 3  
T17S R30E, Eddy County, NM

In response to questions asked under Section II B of Bulletin NTL-6, the following information is provided for your consideration:

- 1 Location: 311 FSL & 104 FWL  
349 FSL & 558 FWL
- 2 Elevation above sea level: 3,704 GR
- 3 Geologic name of surface formation: Quaternary Alluvium Deposits
- 4 Drilling tools and associated equipment: Conventional rotary drilling rig using fluid as a circulating medium for solids removal.
- 5 Proposed drilling depth: MD 6023' TVD 6000'
- 6 Estimated tops of geological markers:

Yates	2,475'
Glorieta	3,910'
Paddock	4,040'
Blaine	5,150'
- 7 Possible mineral bearing formation:

Paddock	Oil
Blaine	Oil
SR-Q-GB-SA	Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 450'	8.5	28	NC	FW
450' to 1000' <sup>1100-1350</sup>	9.8 - 10.2	40-45	NC	Brine
1000' to 1350' <sup>1100-1350</sup> to MD 6023' TVD 6000'	9.0 - 9.2	30-32	NC	Cut Brine

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

8a Proposed drilling Plan

Well will be drilled as a constant angle slant hole from KOP @ 1400.' Penetration Point Glorieta is 332 FSL & 349 FWL.

Application to Drill  
Poseidon 3 Federal No. 1  
Cimarex Energy Co. of Colorado  
Unit M, Section 3  
T17S R30E, Eddy County, NM

9 Casing & Cementing Program:

String	Hole Size	Depth	Casing OD	Weight	Thread	Collar	Grade
Surface	14 $\frac{3}{4}$ "	0 to 450'	New 11 $\frac{3}{4}$ "	42#	8-R	STC	H-40
* Intermediate (in Tansill)	11"	0 to 1100' to 1350'	New 8 $\frac{5}{8}$ "	24#	8-R	STC	J-55
* Production	7 $\frac{7}{8}$ "	0 to MD 6023' TVD 6000'	New 5 $\frac{1}{2}$ "	17#	8-R	LTC	J-55

\* From KOP @ 1400', directional back to the original proposed SHL (before BLM move) as a constant angle slant hole.

10 Cementing:

Surface

530 sx Class H + 2% CaCl<sub>2</sub> (wt 14.8, yld 1.34)  
TOC Surface

Intermediate

Lead: 300 sx Class C Lite + 6# Salt + 1/4# CF (wt 12.7, yld 1.99)  
Tail: 200 sx Class C + 2% CaCl<sub>2</sub> (wt 14.8, yld 1.34)  
TOC Surface

Production

Stage 1

580 sx 50/50/2 Class C + 1% FL-25 + 0.3% FL-52 + 5% Salt + 0.5% SMS (wt 13.0, yld 1.68)

Stage 2

DV Tool @ 3500'

Lead: 550 sx Class H Lite + 6# Salt + 1/4# CF (wt 12.7, yld 1.92)

Tail: 200 sx Class H + 2% CaCl<sub>2</sub> (wt 13, yld 1.68)

TOC 900' to 1150' (depending on intermediate setting depth)

Fresh water zones will be protected by setting 11 $\frac{3}{4}$ " casing at 450' and cementing to surface. Hydrocarbon zones will be protected by setting 8 $\frac{5}{8}$ " casing at 1100' or 1350' (depending on depth of Tansill formation) and cementing to surface and by setting 5 $\frac{1}{2}$ " casing at 6023' and cementing to 900' or 1100,' depending on intermediate setting depth.

<u>Collapse Factor</u>	<u>Burst Factor</u>	<u>Tension Factor</u>
1.125	1.125	1.6



Application to Drill  
Poseidon 3 Federal No. 1  
Cimarex Energy Co. of Colorado  
Unit M, Section 3  
T17S R30E, Eddy County, NM

**11 Pressure control Equipment:**

Exhibit "E-1" - Surface Casing - A minimum 11½" 2000 PSI working pressure B.O.P. consisting of a one set of blind rams and one set of pipe rams. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. Ram-type BOP to be function-tested once per day. Ram-type preventor will be tested to 250 psi low and 1000 psi high, by an independent service company.

Exhibit "E-2" - Intermediate & Production Casing - A minimum 8½" 2000 PSI working pressure B.O.P. consisting of one set of blind rams and one set of pipe rams. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 1100'. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. Ram-type BOP to be tested to 250 psi low and 2000 psi high by an independent service company.

BOP unit will be hydraulically operated. Below intermediate casing shoe, BOP will be operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling.

see COA [ We are requesting a variance for testing the 11½" surface casing from Onshore Order No. 2, which states that all casing strings below the conductor shall be pressure tested to 0.22 psi per foot or 1500 psi, whichever is greater, but not to exceed 70% of the manufacturer's stated maximum internal yield. We are requesting to test the 11½" casing to 1000 psi using rig pumps. The BOP will be tested to 1000 psi by an independent service company.

**12 Testing, Logging and Coring Program:**

- A. Mud logging                      No mud logging program.
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- C. No DSTs or cores are planned at this time.

**13 Potential Hazards:**

No abnormal pressures or temperatures are expected. The area has a potential H2S hazard. An H2S drilling plan is attached. Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

Estimated BHP      **2300 psi**      Estimated BHT      **110°**

**14 Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.**

Drilling expected to take      20-25 days

If production casing is run an additional 30 days will be required to complete and construct surface facilities.

**15 Other Facets of Operations:**

After running casing, cased hole gamma ray neutron collar logs will be run from total depth over possible pay intervals.

Blinebry      pay will be perforated and stimulated.

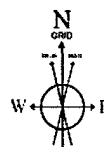
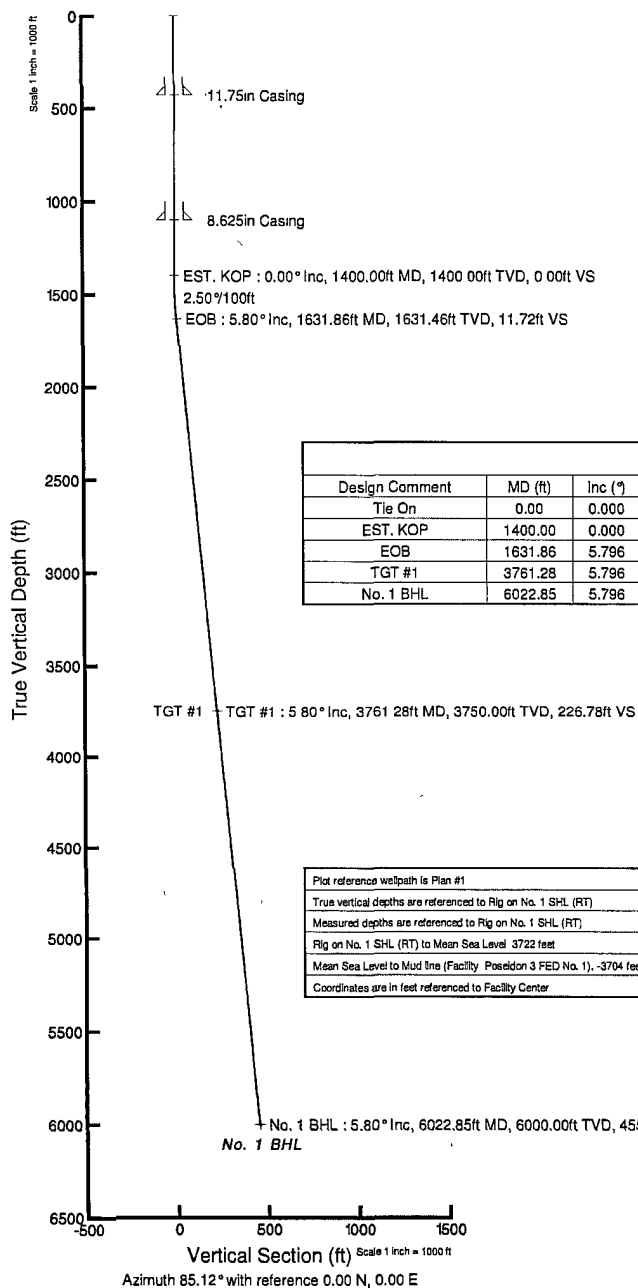
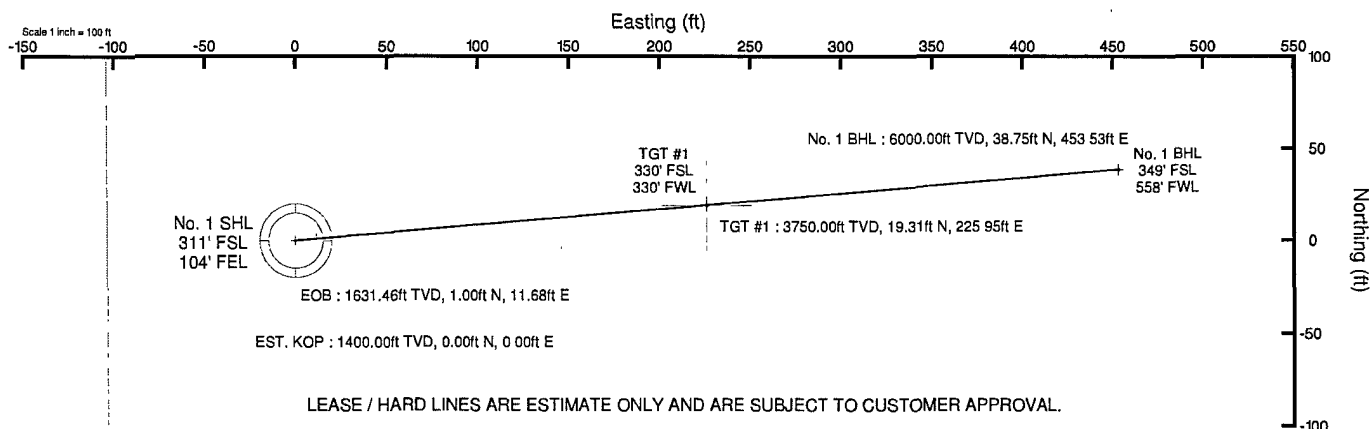
The proposed well will be tested and potentialized as      an oil well.



# Cimarex Energy Co. of Colorado

Location: Eddy County, NM  
Field: (Poseidon) Sec 3, T17S, R30E  
Facility: Poseidon 3 FED No 1

Slot: No. 1 SHL  
Well: No. 1  
Wellbore: No. 1 PWB



BGGM (1945 to 2010) Dip: 60.79° Field: 48265.7 nT  
Magnetic North is 8.20 degrees East of True North (at 10/22/2008)  
Grid North is 0.20 degrees East of True North  
To correct azimuth from True to Grid subtract 0.20 degrees  
To correct azimuth from Magnetic to Grid add 8.01 degrees  
For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 8.01 = 98.01

### Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	85.116	0.00	0.00	0.00	0.00	0.00
EST. KOP	1400.00	0.000	85.116	1400.00	0.00	0.00	0.00	0.00
EOB	1631.86	5.796	85.116	1631.46	1.00	11.68	2.50	11.72
TGT #1	3761.28	5.796	85.116	3750.00	19.31	225.95	0.00	226.78
No. 1 BHL	6022.85	5.796	85.116	6000.00	38.75	453.53	0.00	455.18

Plot reference wellpath is Plan #1

True vertical depths are referenced to Rig on No. 1 SHL (RT)

Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet

Measured depths are referenced to Rig on No. 1 SHL (RT)

North Reference: Grid north

Rig on No. 1 SHL (RT) to Mean Sea Level 3722 feet

Scale: True distance

Mean Sea Level to Mud line (Facility: Poseidon 3 FED No. 1), -3704 feet

Depths are in feet

Coordinates are in feet referenced to Facility Center

Created by: Victor Hernandez on 10/22/2008



# Planned Wellpath Report

Plan #1  
Page 1 of 4



INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No. 1 SHL
Area	Eddy County, NM	Well	No. 1
Field	(Poseidon) Sec 3, T17S, R30E	Wellbore	No. 1 PWB
Facility	Poseidon 3 FED No. 1		

REPORT SETUP INFORMATION			
Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.999924	Report Generated	10/22/2008 at 11:20:32 AM
Convergence at slot	0.20° East	Database/Source file	WA_Midland/No. 1_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	653514.50	675753.80	32°51'25.693"N	103°58'04.872"W
Facility Reference Pt			653514.50	675753.80	32°51'25.693"N	103°58'04.872"W
Field Reference Pt			653514.50	675753.80	32°51'25.693"N	103°58'04.872"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No. 1 SHL (RT) to Facility Vertical Datum	18.00ft
Horizontal Reference Pt	Facility Center	Rig on No. 1 SHL (RT) to Mean Sea Level	3722.00ft
Vertical Reference Pt	Rig on No. 1 SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 1 SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	85.12°



# Planned Wellpath Report

Plan #1  
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INTEQ

## REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co. of Colorado	Slot	No. 1 SHL
Area	Eddy County, NM	Well	No. 1
Field	(Poseidon) Sec 3, T17S, R30E	Wellbore	No. 1 PWB
Facility	Poseidon 3 FED No. 1		

## WELLPATH DATA (51 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00	0.000	85.116	0.00	0.00	0.00	0.00	0.00	Tie On
1400.00	0.000	85.116	1400.00	0.00	0.00	0.00	0.00	EST. KOP
1500.00†	2.500	85.116	1499.97	2.18	0.19	2.17	2.50	
1600.00†	5.000	85.116	1599.75	8.72	0.74	8.69	2.50	
1631.86	5.796	85.116	1631.46	11.72	1.00	11.68	2.50	EOB
1700.00†	5.796	85.116	1699.26	18.60	1.58	18.53	0.00	
1800.00†	5.796	85.116	1798.75	28.70	2.44	28.60	0.00	
1900.00†	5.796	85.116	1898.23	38.80	3.30	38.66	0.00	
2000.00†	5.796	85.116	1997.72	48.90	4.16	48.72	0.00	
2100.00†	5.796	85.116	2097.21	59.00	5.02	58.78	0.00	
2200.00†	5.796	85.116	2196.70	69.10	5.88	68.85	0.00	
2300.00†	5.796	85.116	2296.19	79.20	6.74	78.91	0.00	
2400.00†	5.796	85.116	2395.68	89.30	7.60	88.97	0.00	
2500.00†	5.796	85.116	2495.17	99.39	8.46	99.03	0.00	
2600.00†	5.796	85.116	2594.65	109.49	9.32	109.10	0.00	
2700.00†	5.796	85.116	2694.14	119.59	10.18	119.16	0.00	
2800.00†	5.796	85.116	2793.63	129.69	11.04	129.22	0.00	
2900.00†	5.796	85.116	2893.12	139.79	11.90	139.28	0.00	
3000.00†	5.796	85.116	2992.61	149.89	12.76	149.35	0.00	
3100.00†	5.796	85.116	3092.10	159.99	13.62	159.41	0.00	
3200.00†	5.796	85.116	3191.59	170.09	14.48	169.47	0.00	
3300.00†	5.796	85.116	3291.08	180.19	15.34	179.54	0.00	
3400.00†	5.796	85.116	3390.56	190.29	16.20	189.60	0.00	
3500.00†	5.796	85.116	3490.05	200.39	17.06	199.66	0.00	
3600.00†	5.796	85.116	3589.54	210.49	17.92	209.72	0.00	
3700.00†	5.796	85.116	3689.03	220.59	18.78	219.79	0.00	
3761.28	5.796	85.116	3750.00†	226.78	19.31	225.95	0.00	TGT #1
3800.00†	5.796	85.116	3788.52	230.69	19.64	229.85	0.00	
3900.00†	5.796	85.116	3888.01	240.79	20.50	239.91	0.00	
4000.00†	5.796	85.116	3987.50	250.89	21.36	249.97	0.00	



# Planned Wellpath Report

Plan #1  
Page 3 of 4



INTEQ

## REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co. of Colorado	Slot	No. 1 SHL
Area	Eddy County, NM	Well	No. 1
Field	(Poseidon) Sec 3, T17S, R30E	Wellbore	No. 1 PWB
Facility	Poseidon 3 FED No. 1		

## WELLPATH DATA (51 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
4100.00†	5.796	85.116	4086.99	260.98	22.22	260.04	0.00	
4200.00†	5.796	85.116	4186.47	271.08	23.08	270.10	0.00	
4300.00†	5.796	85.116	4285.96	281.18	23.94	280.16	0.00	
4400.00†	5.796	85.116	4385.45	291.28	24.80	290.23	0.00	
4500.00†	5.796	85.116	4484.94	301.38	25.66	300.29	0.00	
4600.00†	5.796	85.116	4584.43	311.48	26.52	310.35	0.00	
4700.00†	5.796	85.116	4683.92	321.58	27.38	320.41	0.00	
4800.00†	5.796	85.116	4783.41	331.68	28.24	330.48	0.00	
4900.00†	5.796	85.116	4882.89	341.78	29.10	340.54	0.00	
5000.00†	5.796	85.116	4982.38	351.88	29.96	350.60	0.00	
5100.00†	5.796	85.116	5081.87	361.98	30.82	360.66	0.00	
5200.00†	5.796	85.116	5181.36	372.08	31.68	370.73	0.00	
5300.00†	5.796	85.116	5280.85	382.18	32.54	380.79	0.00	
5400.00†	5.796	85.116	5380.34	392.28	33.40	390.85	0.00	
5500.00†	5.796	85.116	5479.83	402.38	34.26	400.91	0.00	
5600.00†	5.796	85.116	5579.32	412.47	35.12	410.98	0.00	
5700.00†	5.796	85.116	5678.80	422.57	35.98	421.04	0.00	
5800.00†	5.796	85.116	5778.29	432.67	36.84	431.10	0.00	
5900.00†	5.796	85.116	5877.78	442.77	37.70	441.17	0.00	
6000.00†	5.796	85.116	5977.27	452.87	38.56	451.23	0.00	
6022.85	5.796	85.116	6000.00 <sup>2</sup>	455.18	38.75	453.53	0.00	No. 1 BHL

## HOLE & CASING SECTIONS Ref Wellbore: No. 1 PWB Ref Wellpath: Plan #1

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
11.75in Casing	0.00	430.00	430.00	0.00	430.00	0.00	0.00	0.00	0.00
8.625in Casing	430.00	1100.00	670.00	430.00	1100.00	0.00	0.00	0.00	0.00
5.5in Casing	1100.00	6022.85	4922.85	1100.00	6000.00	0.00	0.00	38.75	453.53



# Planned Wellpath Report

Plan #1  
Page 4 of 4



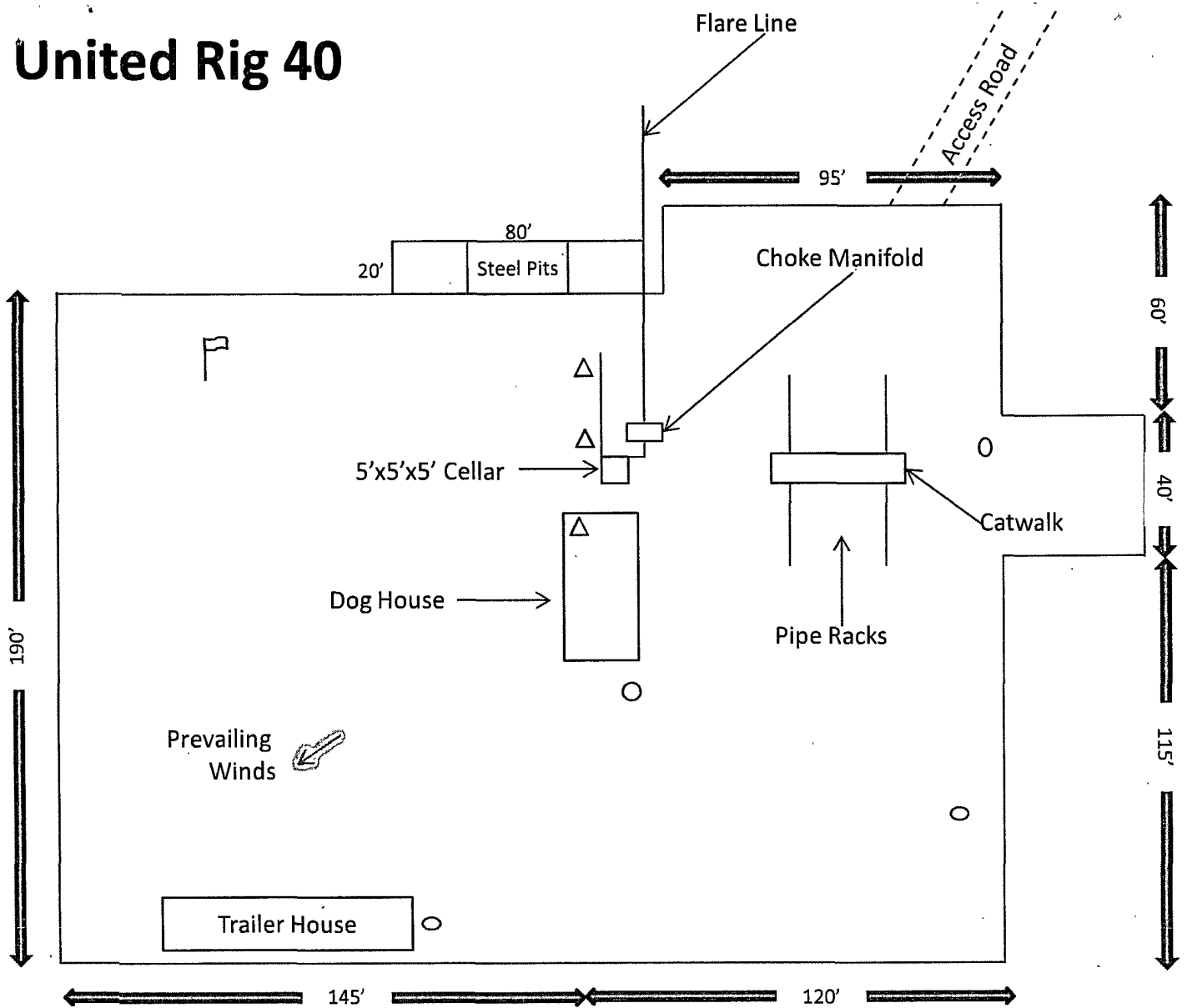
INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No. 1 SHL
Area	Eddy County, NM	Well	No. 1
Field	(Poseidon) Sec 3, T17S, R30E	Wellbore	No. 1 PWB
Facility	Poseidon 3 FED No. 1		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) TGT #1	3761.28	3750.00	19.31	225.95	653740.44	675773.11	32°51'25.876"N	103°58'02.222"W	point
2) No. 1 BHL	6022.85	6000.00	38.75	453.53	653967.99	675792.55	32°51'26.061"N	103°57'59.553"W	point

SURVEY PROGRAM Ref Wellbore: No. 1 PWB Ref Wellpath: Plan #1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
18.00	6022.85	NaviTrak (Standard)		No. 1 PWB

# United Rig 40







-  Wind Direction Indicators  
(wind sock or streamers)
-  H2S Monitors  
(alarms at bell nipple and shale shaker)
-  Briefing Areas
-  Remote BOP Closing Unit

Exhibit D – Rig Diagram  
**Poseidon 3 Federal No. 1**  
 Cimarex Energy Co. of Colorado  
 3-17S-30E  
 SHL 311 FSL & 104 FWL  
 BHL 349 FSL & 558 FWL  
 Eddy County, NM

# BOP Schematic

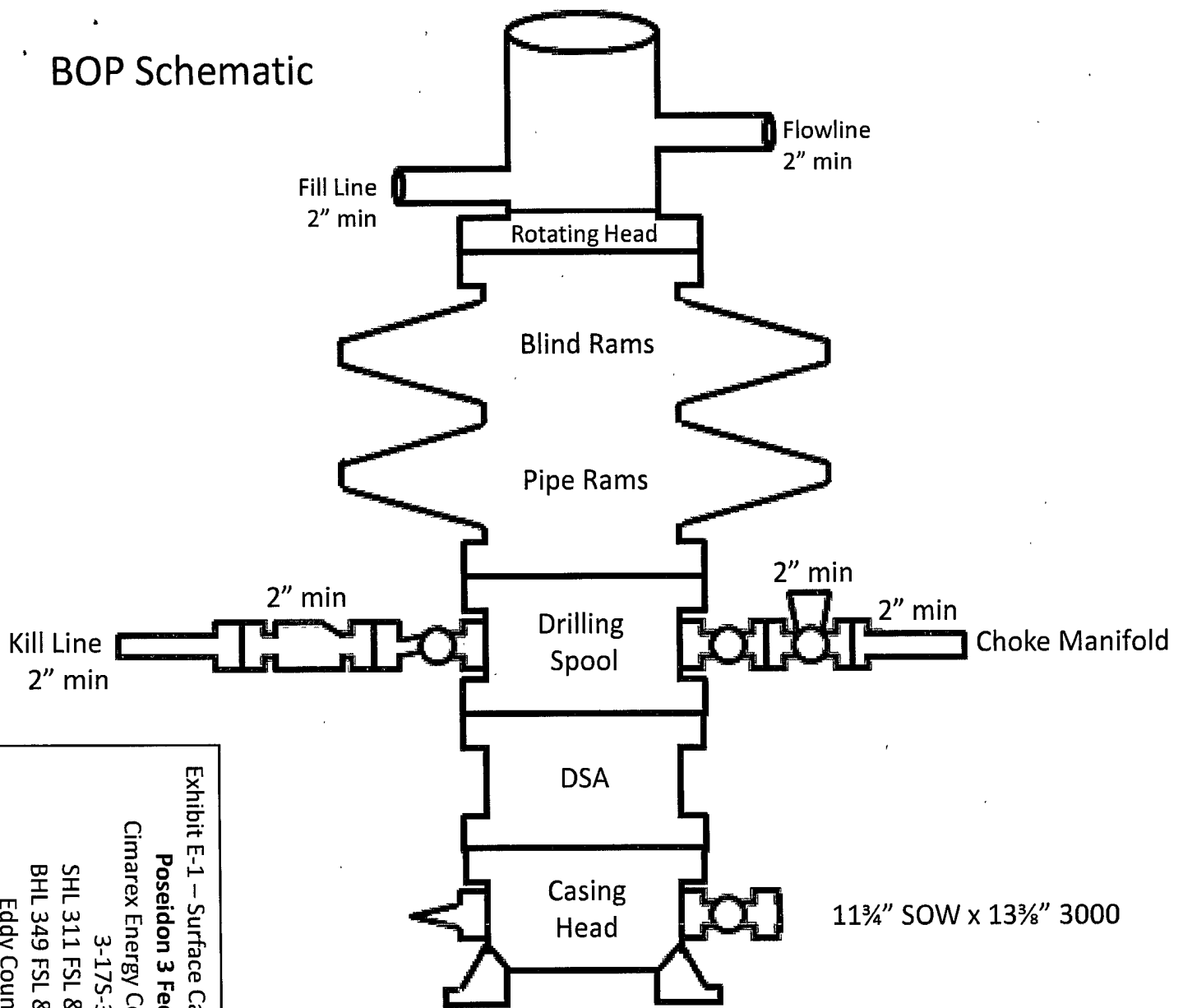
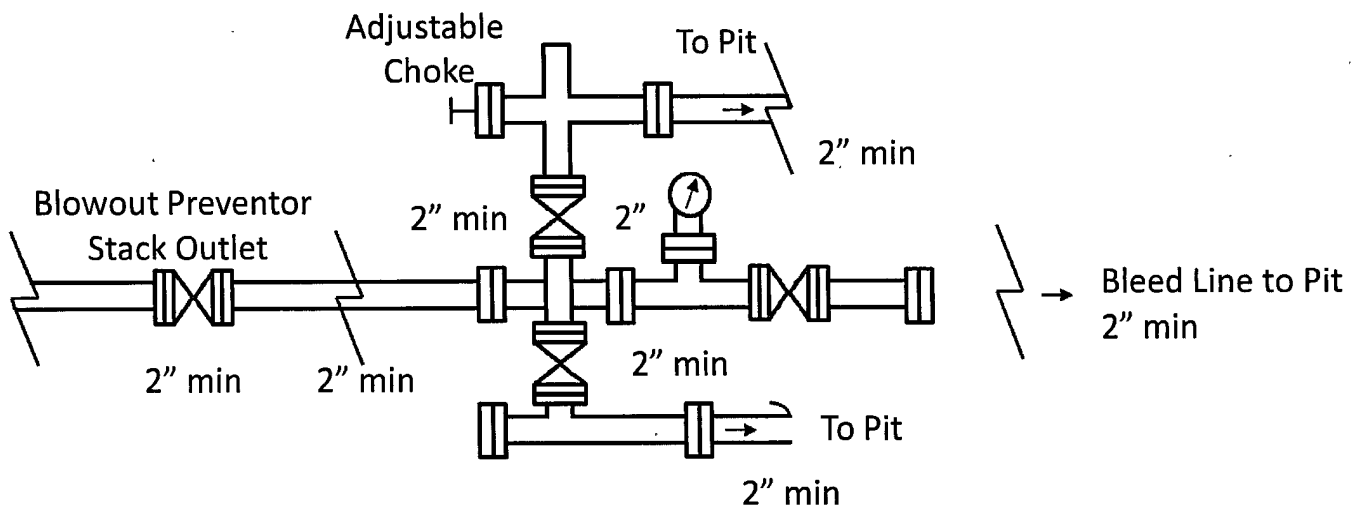


Exhibit E-1 – Surface Casing BOP & Choke  
**Poseidon 3 Federal No. 1**  
 Cimarex Energy Co. of Colorado  
 3-175-30E  
 SHL 311 FSL & 104 FWL  
 BHL 349 FSL & 558 FWL  
 Eddy County, NM

**Choke Manifold Requirement (2000 psi WP)**

**No Annular Required**  
**Minimum 4" Nominal Choke Lines**





# BOP Schematic

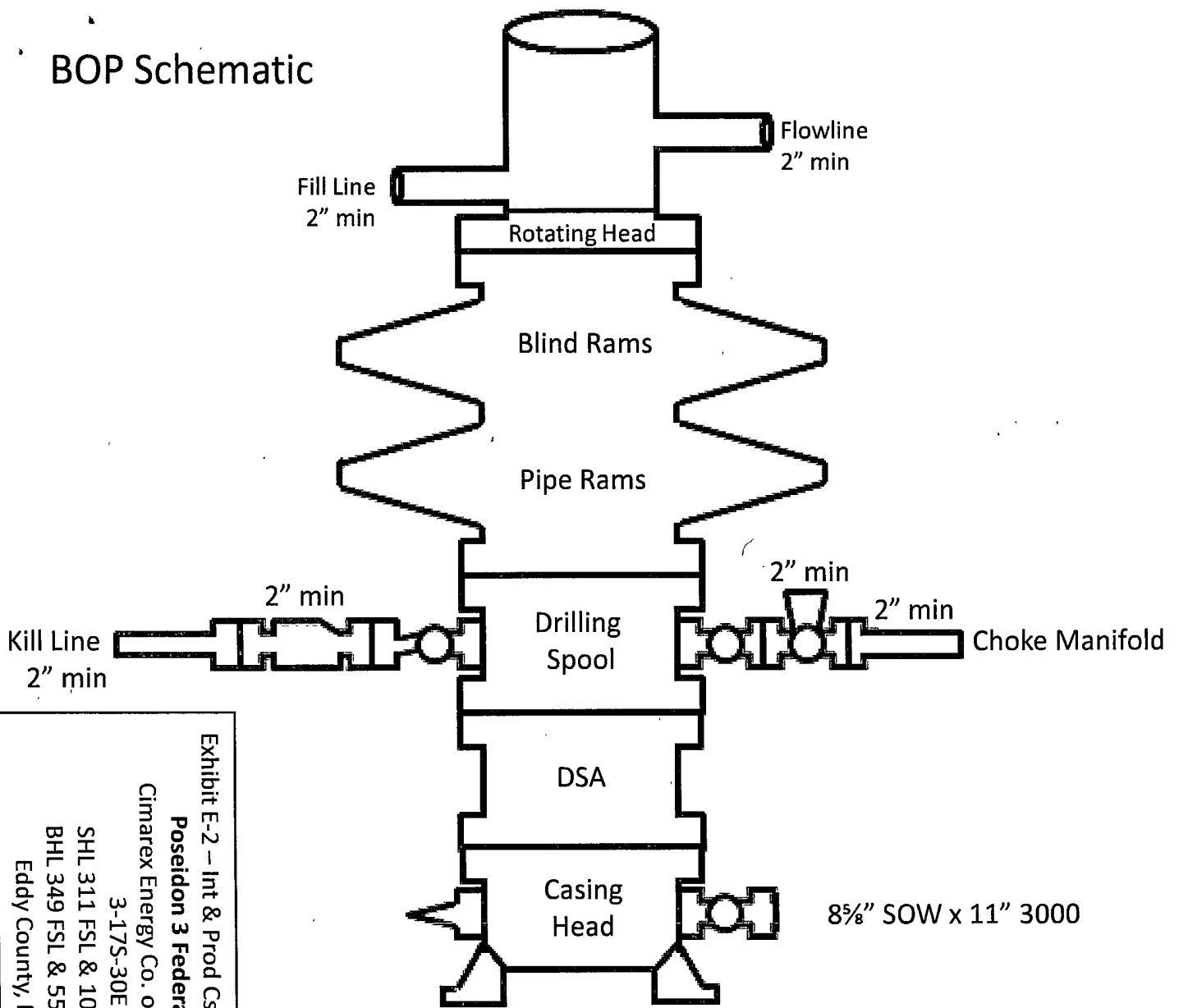
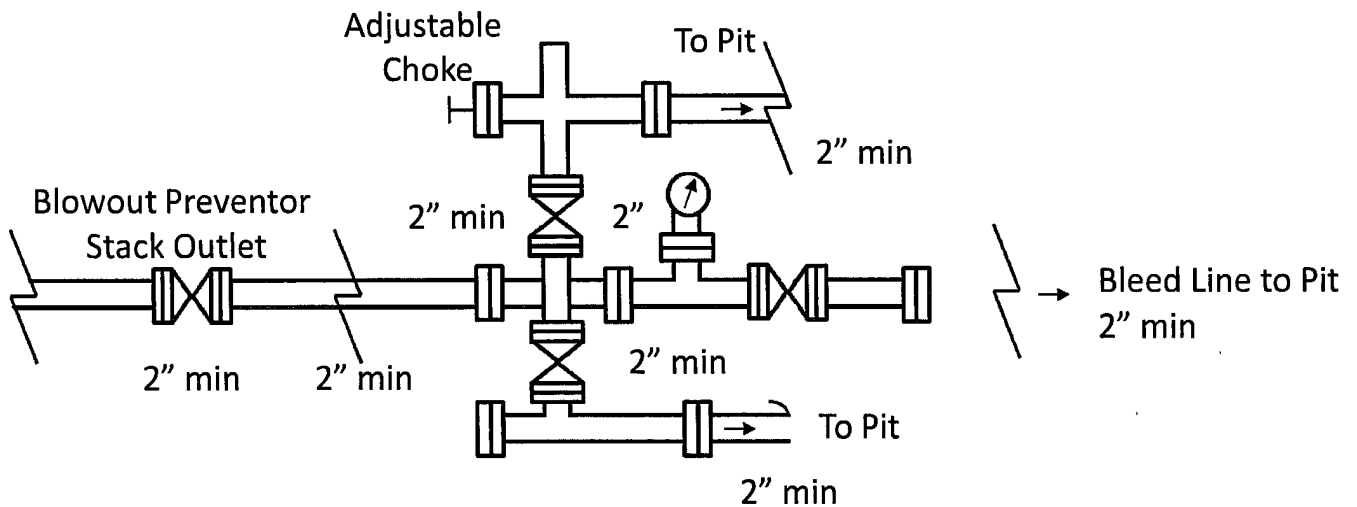


Exhibit E-2 – Int & Prod Csg BOP & Choke  
**Poseidon 3 Federal No. 1**  
 Cimarex Energy Co. of Colorado  
 3-17S-30E  
 SHL 311 FSL & 104 FWL  
 BHL 349 FSL & 558 FWL  
 Eddy County, NM

**Choke Manifold Requirement (2000 psi WP)**  
**No Annular Required**  
**Minimum 4" Nominal Choke Lines**



**Hydrogen Sulfide Drilling Operations Plan**

**Poseidon 3 Federal No. 1**

**Cimarex Energy Co. of Colorado**

Unit M, Section 3

T17S R30E, Eddy County, NM

- 1 All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:
  - A. Characteristics of H<sub>2</sub>S
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems.
  - D. Principle and operation of H<sub>2</sub>S detectors, warning system and briefing areas.
  - E. Evacuation procedure, routes and first aid.
  - F. Proper use of 30 minute pressure demand air pack.
- 2 H<sub>2</sub>S Detection and Alarm Systems:
  - A. H<sub>2</sub>S detectors and audio alarm system to be located at bell nipple, end of flow line (mud pit) and on derrick floor or doghouse.
- 3 Windsock and/or wind streamers:
  - A. Windsock at mudpit area should be high enough to be visible.
  - B. Windsock at briefing area should be high enough to be visible.
- 4 Condition Flags and Signs:
  - A. Warning sign on access road to location.
  - B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H<sub>2</sub>S present in dangerous concentration). Only emergency personnel admitted to location.
- 5 Well control equipment:
  - A. See exhibit "E"
- 6 Communication:
  - A. While working under masks chalkboards will be used for communication.
  - B. Hand signals will be used where chalk board is inappropriate.
  - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.
- 7 Drillstem Testing:

No DSTs or cores are planned at this time.
- 8 Drilling contractor supervisor will be required to be familiar with the effects H<sub>2</sub>S has on tubular goods and other mechanical equipment.
- 9 If H<sub>2</sub>S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavengers if necessary.

H<sub>2</sub>S Contingency Plan  
**Poseidon 3 Federal No. 1**  
Cimarex Energy Co. of Colorado  
Unit M, Section 3  
T17S R30E, Eddy County, NM

**Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must:

- ★ Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- ★ Evacuate any public places encompassed by the 100 ppm ROE.
- ★ Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- ★ Use the "buddy system" to ensure no injuries occur during the response.
- ★ Take precautions to avoid personal injury during this operation.
- ★ Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- ★ Have received training in the:
  - ◆ Detection of H<sub>2</sub>S, and
  - ◆ Measures for protection against the gas,
  - ◆ Equipment used for protection and emergency response.

**Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

**Characteristics of H<sub>2</sub>S and SO<sub>2</sub>**

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21 Air=1	2 ppm	N/A	1000 ppm

**Contacting Authorities**

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

**H<sub>2</sub>S Contingency Plan Emergency Contacts**

**Poseidon 3 Federal No. 1**

Cimarex Energy Co. of Colorado

Unit M, Section 3

T17S R30E, Eddy County, NM

**Company Office**

Cimarex Energy Co. of Colorado  
Co. Office and After-Hours Menu

800-969-4789

**Key Personnel**

<b>Name</b>	<b>Title</b>	<b>Office</b>	<b>Mobile</b>
Doug Park	Drilling Manager	972-443-6463	972-333-1407
Dee Smith	Drilling Super	972-443-6491	972-882-1010
Jim Evans	Drilling Super	972-443-6451	972-465-6564
Dorsey Rogers	Field Super		575-200-6105
Roy Shirley	Field Super		432-634-2136

**Artesia**

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
<b>Fire Department</b>	<b>575-746-2701</b>
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

**Carlsbad**

Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
<b>Fire Department</b>	<b>575-887-3798</b>
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

**Santa Fe**

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635

**National**

National Emergency Response Center (Washington, D.C.)	800-424-8802
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**Medical**

Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911
Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949

**Other**

Boots & Coots IWC	800-256-9688	or	281-931-8884
Cudd Pressure Control	432-699-0139	or	432-563-3356
Halliburton	575-746-2757		
B.J. Services	575-746-3569		

**Surface Use Plan**  
**Poseidon 3 Federal No. 1**  
**Cimarex Energy Co. of Colorado**  
Unit M, Section 3  
T17S R30E, Eddy County, NM

- 1 Existing Roads: Area maps, Exhibit "B" is a reproduction of Eddy Co. General Highway Map. Exhibit "C" is a reproduction of a USGS Topographic Map, showing existing roads and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. Any new roads will be constructed to BLM specifications.
  - A. Exhibit "A" shows the proposed well site as staked.
  - B. From the junction of Hwy 82 and Goat Ropers, go North on Goat Ropers for 1.8 miles to lease road. On lease road, go East 0.9 miles; thence North 0.5 miles; thence East 0.2 miles; thence North 0.3 miles; thence West 0.6 miles to proposed lease road.
- 2 Planned Access Roads: 330.4' of on-lease access road is proposed. No ROW required.
- 3 Location of Existing Wells in a One-Mile Radius - Exhibit A
  - A. Water wells - None known
  - B. Disposal wells - None known
  - C. Drilling wells - None known
  - D. Producing wells - As shown on Exhibit "A"
  - E. Abandoned wells - As shown on Exhibit "A"
- 4 If on completion this well is a producer, Cimarex Energy Co. of Colorado will furnish maps and/or plats showing on site facilities or off site facilities if needed. This will be accompanied by a Sundry Notice.
- 5 Location and Type of Water Supply:

Water will be purchased locally from a commercial source and trucked over the access roads or piped in flexible lines laid on top of the ground.
- 6 Source of Construction Material:

If possible, construction will be obtained from the excavation of drill site. If additional material is needed, it will be purchased from a local source and transported over the access route as shown on Exhibit "C".

**Surface Use Plan**  
**Poseidon 3 Federal No. 1**  
**Cimarex Energy Co. of Colorado**  
Unit M, Section 3  
T17S R30E, Eddy County, NM

**7 Methods of Handling Waste Material:**

- A. Drill cuttings will be separated by a series of solids removal equipment and stored in steel containment pits and then hauled to a state-approved disposal facility.
- B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
- C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
- D. Sewage from living quarters will drain into holding tanks and be cleaned out periodically. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.
- E. Drilling fluids will be contained in steel pits in a closed circulating system. Fluids will be cleaned and reused. Water produced during testing will be contained in the steel pits and disposed of at a state approved disposal facility. Any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

**8 Ancillary Facilities:**

- A. No camps or airstrips to be constructed.

**9 Well Site Layout:**

- A. Exhibit "D" shows location and rig layout.
- B. Mud pits in the closed circulating system will be steel pits and the cuttings will be stored in steel containment pits.
- C. Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- D. If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

**Surface Use Plan**  
**Poseidon 3 Federal No. 1**  
**Cimarex Energy Co. of Colorado**  
Unit M, Section 3  
T17S R30E, Eddy County, NM

**10 Plans for Restoration of Surface:**

Rehabilitation of the location will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be recountoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

Should the well be a producer, the previously noted procedures will apply to those areas which are not required for production facilities.

**11 Other Information:**

- A. Topography consists of a sloping plane with loose tan sands. Vegetation is mainly yucca, mesquite and shin oak.
- B. The wellsite is on surface owned by Department of the Interior, Bureau of Land Management. The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.
- C. In lieu of performing an archaeological survey, Cimarex will use the Carlsbad Area Memorandum of Agreement and will use the site location information to plan projects to avoid known eligible archaeological sites by at least 100 feet. In this regard, per the MOA, Cimarex will make the appropriate contribution to the Permian Basin Cultural Resource mitigation fund.
- D. There are no known dwellings within 1½ miles of this location.

**Operator Certification Statement**  
**Poseidon 3 Federal No. 1**  
**Cimarex Energy Co. of Colorado**  
Unit M, Section 3  
T17S R30E, Eddy County, NM

Operator's Representative

Cimarex Energy Co. of Colorado  
P.O. Box 140907  
Irving, TX 75014  
Office Phone: (972) 443-6489  
Zeno Farris

**CERTIFICATION:** I hereby certify that the statements and plans made in this APD are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Cimarex Energy Co. of Colorado and/or its contractors/subcontractors and is in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provision of U.S.C. 1001 for the filing of a false statement.

NAME: Zeno Farris  
Zeno Farris  
DATE: October 23, 2008  
TITLE: Manager Operations Administration



## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex Energy
LEASE NO.:	NMLC060524
WELL NAME & NO.:	Poseidon 3 Federal No 1
SURFACE HOLE FOOTAGE:	311' FSL & 104' FWL
BOTTOM HOLE FOOTAGE	349' FSL & 558' FWL
LOCATION:	Section 3, T. 17 S., R 30 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.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Lesser Prairie Chicken
- ☒ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System**
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- ☒ **Reseeding Procedure/Interim Reclamation**
- ☐ **Final Abandonment/Reclamation**

## **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)**

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require human presence.

### **Berming**

Berm West side of location to protect low lying area to west.

## **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 (505) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

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

### **B. TOPSOIL**

The operator shall stockpile the topsoil of the well pad. The topsoil to be stripped is approximately 6 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

### **C. CLOSED LOOP SYSTEM**

Although this will be drilled using a closed loop system and no reserve pits will be utilized, the v-door will be on the East side of the location.

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**

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (505) 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. 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 thirty (30) feet.

### **Surfacing**

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

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

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

### **Crowning**

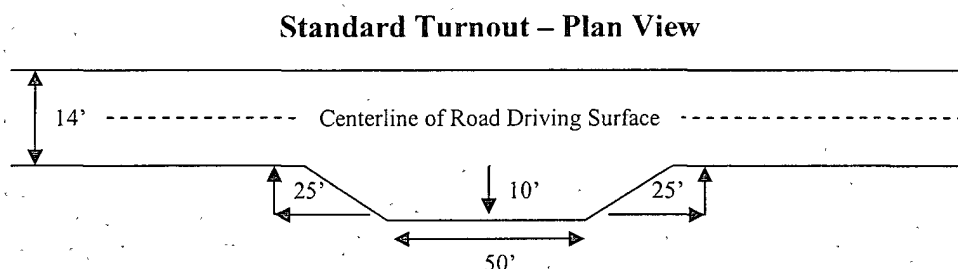
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

### **Ditching**

Ditching shall be required on both sides of the road.

### **Turnouts**

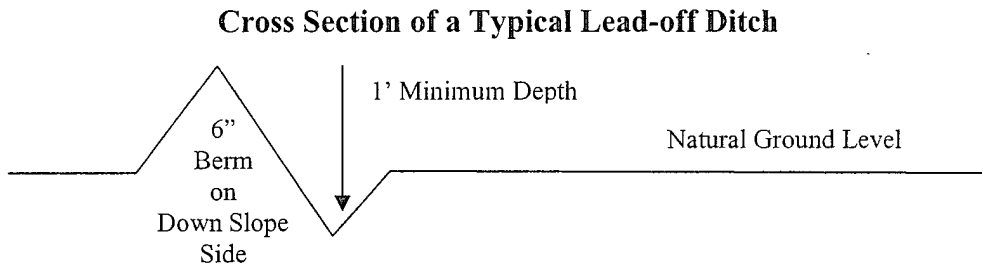
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



### **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing 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.



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:

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

#### **Culvert Installations**

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

#### **Cattleguards**

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

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

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

#### **Fence Requirement**

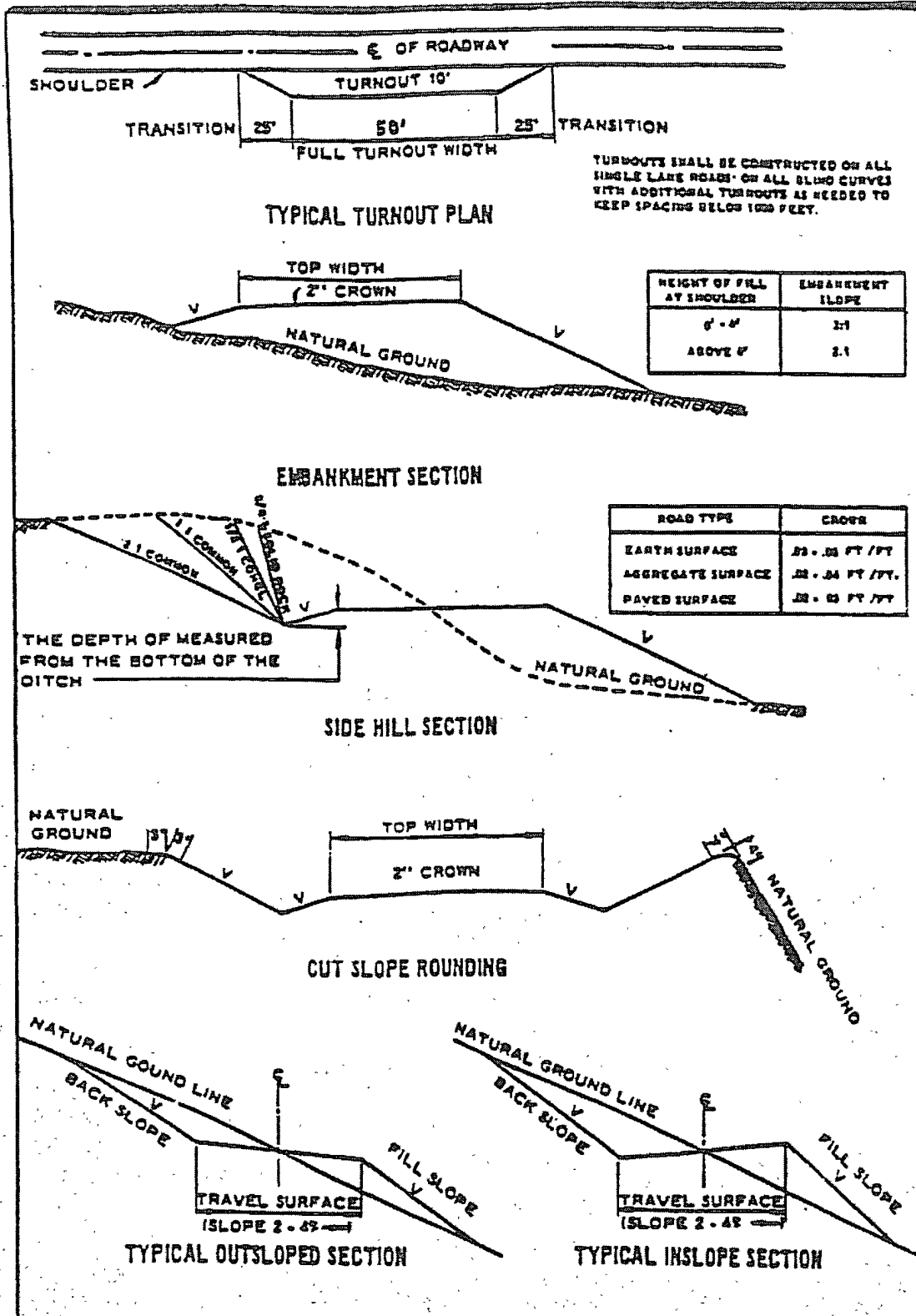
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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

**Public Access**

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

Figure 1 – Cross Sections and Plans For Typical Road Sections





## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

☒ **Eddy County**

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

1. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan should be activated 500 feet prior to drilling into the Yates formation. **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.

### B. CASING

**Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.**

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

**Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.**

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

**Possible loss of circulation in the Grayburg and San Andres formations.  
Possible brine/water flows in the Salado and Artesia groups.**

1. The 11-3/4 inch surface casing shall be set **at approximately 450 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **The Rustler Anhydrite may be encountered at a shallower depth.**
  - 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 a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
  - b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry. Not applicable for proposed plan.**
  - 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.
2. The minimum required fill of cement behind the 8-5/8 inch intermediate casing is:  
☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.  
**Intermediate casing to be set in the Tansill formation between 1100' and 1350'.**
3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
  - a. First stage to DV tool, cement shall:  
☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office, before proceeding with second stage cement job.
  - b. Second stage above DV tool, cement shall:  
☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.
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. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. The tests shall be done by an independent service company.
  - b. The results of the test shall be reported to the appropriate BLM office.
  - c. 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.
  - d. 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.
  - e. **Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.**

**D. DRILL STEM TEST**

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

**WWI 111908**

## **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.

#### **Containment Structures**

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

#### **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, Munsell Soil Color Chart # 5Y 4/2

## **IX. INTERIM RECLAMATION & RESEEDING PROCEDURE**

### **A. INTERIM RECLAMATION**

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting 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.

Operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions 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 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.

### **B. RESEEDING PROCEDURE**

Once the location is drilled, completion procedures are complete, and all trash removed, reseed the location and all surrounding disturbed areas as follows:

## Seed Mixture for LPC Sand/Shinnery Sites

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

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

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

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

\*\*Four-winged Saltbush 5lbs/A

\* This can be used around well pads and other areas where caliche cannot be removed.

\*Pounds of pure live seed:

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

## **X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS**

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.