

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMNM57285

6. If Indian, Allottee or Tribe Name

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

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

NOV 17 2014

RECEIVED

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

CIMAREX ENERGY COMPANY OF CO

Contact: TERRI STATHEM

CO-Mail: tstathem@cimarex.com

3a. Address

600 NORTH MARIENFELD STREET, SUITE 600
MIDLAND, TX 79701

3b. Phone No. (include area code)

Ph: 432-620-1936

8. Well Name and No.

MALLON 27 FEDERAL COM 1H

9. API Well No.

30-025-42212-00-X1

10. Field and Pool, or Exploratory
LEA

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 27 T19S R34E SESE 330FSL 660FEL
32.372971 N Lat, 103.322984 W Lon

11. County or Parish, and State

LEA COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Cimarex Energy Co. respectfully requests approval to change the APD as follows:

Propose drilling a 1-1/2 mile lateral. Please see attached directional plan and C102.

TD: 17929' MD 10860' TVD

Casing and cement design: Please see attached drilling plan.

One mile radius map change - please see attached.

Original COAs Apply

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #276241 verified by the BLM Well Information System

For CIMAREX ENERGY COMPANY OF CO, sent to the Hobbs

Committed to AFMSS for processing by CHRISTOPHER WALLS on 11/05/2014 (15CRW0023SE)

Name (Printed/Typed) TERRI STATHEM

Title COORDINATOR REGULATORY COMPLIA

Signature (Electronic Submission)

Date 11/05/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

Date

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

APPROVED

NOV 7 2014

/s/ Chris Walls

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.

BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

NOV 18 2014
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DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (505) 393-8161 Fax: (505) 393-8720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (505) 743-1203 Fax: (505) 740-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 534-5170 Fax: (505) 534-5170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3400 Fax: (505) 476-8452

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30025-42212	Pool Code 37570	Pool Name Lea Bone Spring
Property Code	Property Name MALLON 27 FEDERAL COM	Well Number 1H
GRID No. 162683	Operator Name CIMAREX ENERGY CO.	Elevation 3722'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	27	19 S	34 E		330	SOUTH	660	EAST	LEA

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
I	22	19 S	34 E		2310	SOUTH	660	EAST	LEA

Dedicated Acres 240	Joint or Infill	Consolidation Code	Order No.
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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

602171.2 780361.2 CALC BOTTOM HOLE LOCATION Lat - N 32°38'41.68" Long - W 103°32'30.01" NMSPCE- N 599257.8 E 785013.7 (NAD-83)	602237.6 785639.6 CALC 596091.5 780418.4 596917.7 783058.8 594257.6 780440.3 591624.9 780463.1 591634.8 783105.2 591661.4 785744.9 596957.9 785700.2 22 27 B.H. 660' 2310' 660' S.L.	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 undivided 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. <i>[Signature]</i> 1/17/2014 Signature Date Tstathem Printed Name tstathem@cimarex.co Email Address 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. <i>[Signature]</i> Date Seal of Professional Surveyor Certificate No. Gary L. Jones 7977 BASIN SURVEYS
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H₂S Contingency Plan Emergency Contacts

Mallon 27 Federal Com #1H

Cimarex Energy Co.

UL: P, Sec. 27, 19S, 34E

Lea Co., NM

Company Office

Cimarex Energy Co. of Colorado 800-969-4789

Co. Office and After-Hours Menu

Key Personnel

Name	Title	Office	Mobile
Larry Seigrist	Drilling Manager	432-620-1934	580-243-8485
Doug McQuitty	Drilling Superintendent	432-620-1933	806-640-2605
Scott Lucas	Drilling Superintendent	432-620-1989	432-894-5572
Roy Shirley	Construction Superintendent		432-634-2136
Keith Cannon	HEYCO Energy Group Drilling Superintendent		575-626-1936
Clay Stevens	HEYCO Energy Group Production Superintendent		575-626-1965
Gordon Yahney	HEYCO Energy Group Geologist	575-623-6601	
Catherine Green	HEYCO Energy Group Regulatory Analyst		720-220-7482

Artesia

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
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
Fire Department	575-887-3798
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		

Application to Drill
Mallon 27 Federal Com #1H
 Cimarex Energy Co.
 UL: P, Sec. 27, 19S, 34E
 Lea Co., NM

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

1. **Location:** SHL 330 FSL & 660 FEL, Sec. 27
 BHL 2310 FSL & 660 FEL, Sec. 22
2. **Elevation Above Sea Level:** 3,722' 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:** 17,929 MD 10,860 TVD Pilot Hole TD: N/A
6. **Estimated Tops of Geological Markers:**

Formation	Est Top	Bearing
Rustler	1750	N/A
Salt	2120	N/A
Yates	3575	N/A
Queen	4575	N/A
Capitan Reef	5070	N/A
Cherry Canyon	5620	Hydrocarbons
Bone Spring	8250	Hydrocarbons
Upper Bone Spring Shale	8700	Hydrocarbons
1st BSS	9550	Hydrocarbons
2nd BSS	10020	Hydrocarbons
3rd BSS	10650	Hydrocarbons
Wolfcamp	10980	Hydrocarbons

7. **Possible Mineral Bearing Formation:** Shown above

7A. **OSE Ground Water Estimated Depth:** 150'

8. **Casing Program:**

Name	Casing Depth From (ft)	Casing Setting Depth (ft) MD	Casing Setting Depth (ft) TVD	Open Hole Size (inches)	Casing Size (inches)	Casing Weight (lb/ft)	Casing Grade	Thread	Condition	BHP (psig)	Anticipated Mud Weight (ppg)	Collapse SF at Full Evacuation(1.125)	Collapse SF at 1/3 Evacuation(1.125)	Burst SF (1.125)	Cumulative Air Weight	Cumulative Bouyed Weight (lbs)	Bouyant Tension SF (1.8)
Surface	0	1800	1875	17 1/2	13-3/8"	54.50	J-55	ST&C	New	776	8.3	1.45		3.53	98,100	85,669	6.00
Intermediate	0	5600	5600	12 1/4	9-5/8"	40.00	J-55	LT&C	New	2912	10.0		1.34	1.36	224,000	189,801	2.74
Production	0	10383	10383	8 3/4	5-1/2"	17.00	L-80	LT&C	New	4859	9.0	1.29		1.59	184,620	159,252	2.12
Production	10383	17929	10860	8 3/4	5-1/2"	17.00	L-80	BT&C	New	5082	9.0	1.24		1.52	8,109	6,995	56.76

Note: Operator may drill a 8-1/2" OH from end of curve to TD of the well. This is to reduce the need to ream the conventionally drilled curve to run a RSS assembly into the lateral.

Application to Drill
Mallon 27 Federal Com #1H

Cimarex Energy Co.

UL: P, Sec. 27, 19S, 34E

Lea Co., NM

8A. Casing Design and Casing Loading Assumptions:

Surface	Tension	A 1.8 design factor with effects of buoyancy: 8.30 ppg.
	Collapse	A 1.125 design factor with full internal evacuation and a collapse force equal to a 8.30 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.
Intermediate	Tension	A 1.8 design factor with effects of buoyancy: 10.00 ppg.
	Collapse	A 1.125 design factor evacuated 1/3 TVD of next casing string with a collapse force equal to a 10.00 ppg mud gradient. During the running of the casing, the operator will stop and fill the casing as need to ensure it does not collapse.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.
Production and/or Production Completion System	Tension	A 1.8 design factor with effects of buoyancy: 9.00 ppg.
	Collapse	A 1.125 design factor with full internal evacuation of next casing string with a collapse force equal to a 9.00 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.

9. Cementing Program:

Casing Type	Type	Sacks	Yield	Weight	Cubic Feet	Cement Blend
Surface	Lead	858	1.75	13.50		1500 Class C + Bentonite + Calcium Chloride + LCM, 8.829 gps water
	Tail	233	1.34	14.80		312 Class C + LCM, 6.320 gps water
	TOC: 0		45% Excess			Centralizers per Onshore Order 2.III.B.1f
Intermediate	Lead	1000	1.88	12.90		1880 35:65 (Poz:C) + Salt + Bentonite + LCM + Retarder, 9.650 gps water
	Tail	292	1.34	14.80		391 Class C + Retarder + LCM, 6.320 gps water
	TOC: 0		44% Excess			
Production	Lead	652	2.40	11.90		1563 35:65 (poz:H) + Salt + Sodium Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder, 13.800 gps water
	Tail	1692	1.24	14.50		2097 50:50(Poz:H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder, 5.550 gps water
	TOC: 5400		16% Excess			No centralizers planned in the lateral section. 1 every jt from EOC to KOP. 1 every 4th joint from KOP to 500' inside previous casing.

Cement volumes will be adjusted depending on hole size

Additional cement may be required

9a. Proposed Drilling Plan:

Pilot Hole TD: No Pilot

KOP: 10,383'

EOC: 11,133'

Set Surface and Intermediate casing strings. Drill production hole to KOP. Continue drilling lateral through the curve to TD. Run prod casing & cement.

10. Pressure Control Equipment:

Exhibit "E-1". A BOP consisting of two rams with blind rams and pipe rams, and one annular preventer. Below the surface casing, a 2M system will be used. Below the intermediate casing, a 3M system will be used. See attachments for BOP and choke manifold diagrams. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A Rotating head may be installed as needed. 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.

BOP and associated equipment will be installed, used, maintained, and tested in a manner necessary to assure well control and shall be in place and operational prior to drilling the surface casing shoe. The Annular Preventer shall be functioned at least weekly. The pipe and blind rams will be operated each trip. No abnormal pressure or temperature is expected while drilling.

BOPS will be tested by an independent service company. The ram preventers, choke manifold, and safety valves will be tested as follows: On the surface casing, pressure tests will be made to 250 psi low and 2000 psi high. On the intermediate casing, pressure tests will be made to 250 psi low and 3000 psi high.

The Annular Preventer will be tested to 250 psi low and 1000 psi high on the surface casing, and 250 low and 1500 high on the intermediate casing.

Cimarex Energy Co. of Colorado requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached (please see Exhibit F, F-1, F-2, F-3). The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used.

Application to Drill
Mallon 27 Federal Com #1H
Cimarex Energy Co.
UL: P, Sec. 27, 19S, 34E
Lea Co., NM

11. Proposed Mud Circulating System:

Depth	Mud Weight	Visc	Fluid Loss	Type Mud
0' to 1800'	7.80 - 8.30	28	NC	FW Spud Mud
1800' to 5600'	9.50 - 10.00	30-32	NC	Brine Water
5600' to 17929'	8.50 - 9.00	30-32	NC	FW/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.

The Mud Monitoring System is an electronic Pason System satisfying requirements of Onshore Order 1.

12. Testing, Logging and Coring Program:

- A. Mud logging program: 2 man unit from 5600 to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL /GR -- Inter. Csg to TD
CNL /GR -- Surf to Inter. Csg
- C. No DSTs or cores are planned at this time
- D. CBL w/ CCL from as far as gravity will let it fall to TOC

13. Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex does not anticipate that there will be enough H₂S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H₂S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H₂S Safety package on all wells, attached is an "H₂S Drilling Operations Plan." 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: 4887 psi

Estimated BHT: 167°

14. Construction and Drilling:

Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.
Drilling expected to take: 35 days.
If production casing is run an additional 30 days will be required to complete and construct surface facilities.

15. Other Facets of Operations:

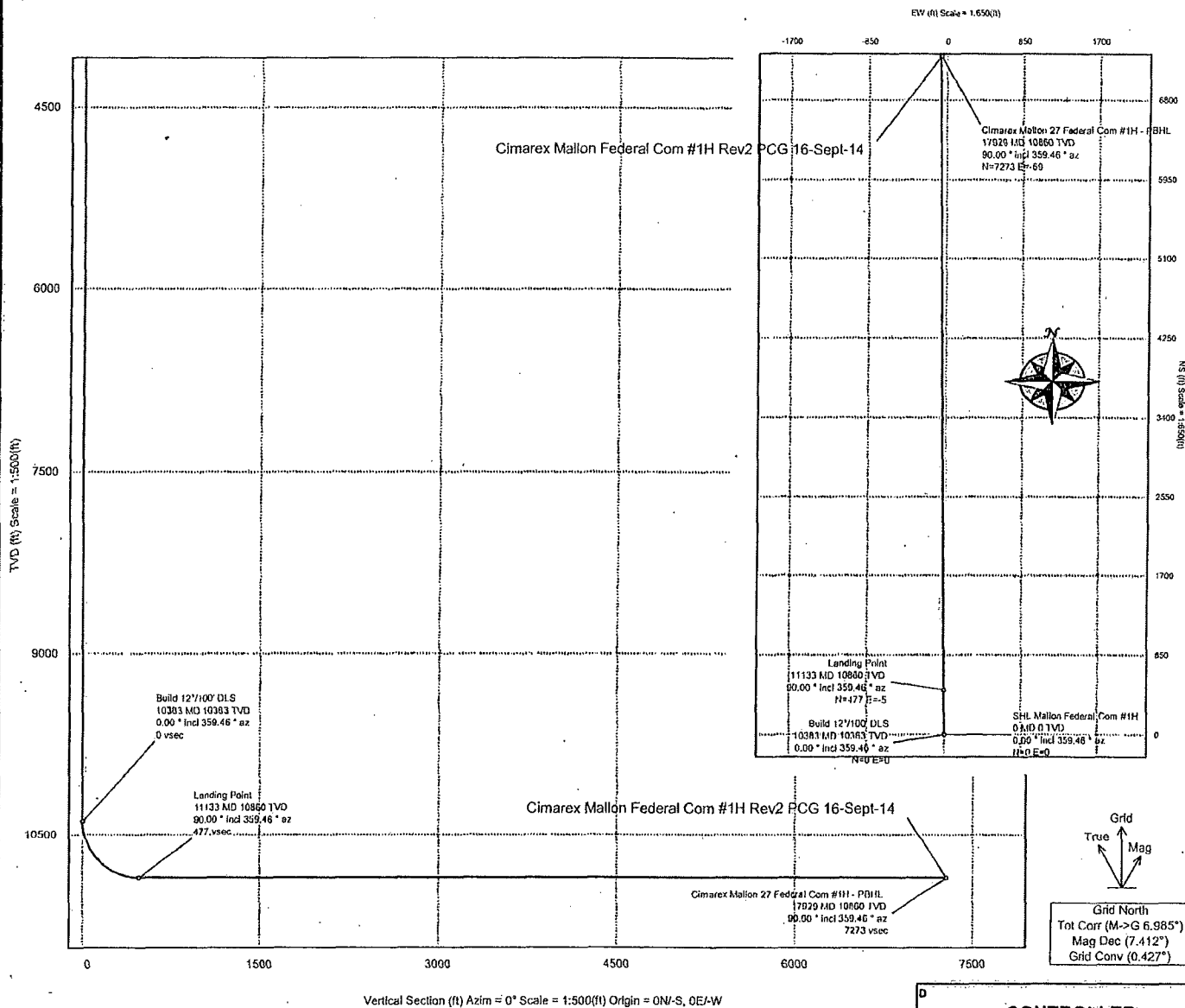
If production casing is run an additional 30 days will be required to complete and construct surface facilities.
Bone Spring pay will be perforated and stimulated.
The proposed well will be tested and potentialized as **Oil**



Cimarex

PATHFINDER
A Schlumberger Company

Borehole: Original Borehole	Well: Mallon 27 Federal Com # 1H	Field: NM Lea County	Structure: TBD
Gravity & Magnetic Parameters Model: BGGM 2012 Dip: 60.46° Date: 20-Nov-2013 MagDec: 7.412° FS: 48575.91nT Gravity FS: 998.719mgm (0.80665 Based)		Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet Lat: N 32 37 29.71 Northings: 591984.81US Grid Conv: 0.4269° Lon: W 103 32 29.84 Eastings: 765082.21US Scale Fact: 0.00997713	
Miscellaneous Mallon 27 Slot: Federal Com # 1H Plan: Rev2 PCG 16-Sept-14		TVD Ref: Ground Level (3722ft above MSL)	



Critical Points							
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(°)B(-)	E(°)W(-)
SHL Mallon Federal Com #1H	0.00	0.00	359.46	0.00	0.00	0.00	0.00
Build 12"100' DLS	10382.54	0.00	359.46	10382.54	0.00	0.00	0.00
Landing Point	11132.54	90.00	359.46	10860.00	477.44	477.44	-4.50
Cimarex Mallon 27 Federal Com #1H - PBHL	17928.76	90.00	359.46	10860.00	7273.38	7273.38	-68.50

CONTROLLED	
Plan ref	Rev2 PCG 16-Sept-14
Drawing ref	
Copy number	1 of 1
Date	16-Sep-2014
1	Originator
2	DE Sign Off Authority
3	D&M Line Manager
4	Client
Copy number for	



Cimarex Mallon Federal Com #1H Rev2 PCG 16-Sept-14 Proposal Geodetic Report

(Non-Def Plan)



Report Date: September 16, 2014 - 09:34 AM
 Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure / Slot: Cimarex Mallon 27 Federal Com #1H / Mallon 27 Federal Com #1H
 Well: Mallon 27 Federal Com #1H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Mallon Federal Com #1H Rev2 PCG 16-Sept-14
 Survey Date: November 20, 2013
 Tort / AHD / DDI / ERD Ratio: 90.001 ° / 7273.703 ft / 6.034 / 0.670
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 37' 29.71123", W 103° 32' 29.84491"
 Location Grid N/E Y/X: N 591984.600 ftUS, E 785082.200 ftUS
 CRS Grid Convergence Angle: 0.4269 °
 Grid Scale Factor: 0.99997713
 Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 0.000 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: Ground Level
 TVD Reference Elevation: 3722.000 ft above MSL
 Seabed / Ground Elevation: 3722.000 ft above MSL
 Magnetic Declination: 7.412 °
 Total Gravity Field Strength: 998.7191mgn (9.80665 Based)
 Gravity Model: DOX
 Total Magnetic Field Strength: 48575.910 nT
 Magnetic Dip Angle: 60.460 °
 Declination Date: November 20, 2013
 Magnetic Declination Model: BGGM 2012
 North Reference: Grid North
 Grid Convergence Used: 0.4269 °
 Total Corr Mag North->Grid North: 6.9855 °
 Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL Mallon Federal Com #1H	0.00	0.00	359.46	0.00	0.00	0.00	0.00	N/A	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
Build 12"/100'	10382.54	0.00	359.46	10382.54	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
DLS Landing Point	11132.54	90.00	359.46	10860.00	477.44	477.44	-4.50	12.00	592462.03	785077.70	N 32 37 34.44	W 103 32 29.86
Cimarex Mallon 27 Federal Com #1H - PBHL	17928.78	90.00	359.46	10860.00	7273.38	7273.38	-68.50	0.00	599257.80	785013.70	N 32 38 41.68	W 103 32 30.01

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
 Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EQU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	17928.779	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Mallon Federal Com #1H Rev2



Cimarex Mallon Federal Com #1H Rev2 PCG 16-Sept-14 Proposal Geodetic Report - 100ft Interpolated (Non-Def Plan)



Report Date: September 16, 2014 - 09:35 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Mallon 27 Federal Com #1H / Mallon 27 Federal Com #1H
Well: Mallon 27 Federal Com #1H
Borehole: Original Borehole
UWI / AP#: Unknown / Unknown
Survey Name: Cimarex Mallon Federal Com #1H Rev2 PCG 16-Sept-14
Survey Date: November 20, 2013
Tort / AHD / DDI / ERD Ratio: 90.001 ° / 7273.703 ft / 6.034 / 0.670
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 37' 29.71123", W 103° 32' 29.84491"
Location Grid N/E Y/X: N 591984.600 ftUS, E 785082.200 ftUS
CRS Grid Convergence Angle: 0.4269 °
Grid Scale Factor: 0.99997713
Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 0.000 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Ground Level
TVD Reference Elevation: 3722.000 ft above MSL
Seabed / Ground Elevation: 3722.000 ft above MSL
Magnetic Declination: 7.412 °
Total Gravity Field Strength: 998.7191mgN (9.80665 Based)
Gravity Model: DOX
Total Magnetic Field Strength: 48575.910 nT
Magnetic Dip Angle: 60.460 °
Declination Date: November 20, 2013
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: 0.4269 °
Total Corr Mag North->Grid North: 6.9855 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL Mallon Federal Com #1H	0.00	0.00	359.46	0.00	0.00	0.00	0.00	N/A	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	100.00	0.00	359.46	100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	200.00	0.00	359.46	200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	300.00	0.00	359.46	300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	400.00	0.00	359.46	400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	500.00	0.00	359.46	500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	600.00	0.00	359.46	600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	700.00	0.00	359.46	700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	800.00	0.00	359.46	800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	900.00	0.00	359.46	900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1000.00	0.00	359.46	1000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1100.00	0.00	359.46	1100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1200.00	0.00	359.46	1200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1300.00	0.00	359.46	1300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1400.00	0.00	359.46	1400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1500.00	0.00	359.46	1500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1600.00	0.00	359.46	1600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1700.00	0.00	359.46	1700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1800.00	0.00	359.46	1800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1900.00	0.00	359.46	1900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	2000.00	0.00	359.46	2000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2100.00	0.00	359.46	2100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2200.00	0.00	359.46	2200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2300.00	0.00	359.46	2300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2400.00	0.00	359.46	2400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2500.00	0.00	359.46	2500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2600.00	0.00	359.46	2600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2700.00	0.00	359.46	2700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2800.00	0.00	359.46	2800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2900.00	0.00	359.46	2900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3000.00	0.00	359.46	3000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3100.00	0.00	359.46	3100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3200.00	0.00	359.46	3200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3300.00	0.00	359.46	3300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3400.00	0.00	359.46	3400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3500.00	0.00	359.46	3500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3600.00	0.00	359.46	3600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3700.00	0.00	359.46	3700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3800.00	0.00	359.46	3800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3900.00	0.00	359.46	3900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4000.00	0.00	359.46	4000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4100.00	0.00	359.46	4100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4200.00	0.00	359.46	4200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4300.00	0.00	359.46	4300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4400.00	0.00	359.46	4400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4500.00	0.00	359.46	4500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4600.00	0.00	359.46	4600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4700.00	0.00	359.46	4700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4800.00	0.00	359.46	4800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4900.00	0.00	359.46	4900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5000.00	0.00	359.46	5000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5100.00	0.00	359.46	5100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5200.00	0.00	359.46	5200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5300.00	0.00	359.46	5300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5400.00	0.00	359.46	5400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5500.00	0.00	359.46	5500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5600.00	0.00	359.46	5600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5700.00	0.00	359.46	5700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5800.00	0.00	359.46	5800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5900.00	0.00	359.46	5900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6000.00	0.00	359.46	6000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6100.00	0.00	359.46	6100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6200.00	0.00	359.46	6200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6300.00	0.00	359.46	6300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6400.00	0.00	359.46	6400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6500.00	0.00	359.46	6500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6600.00	0.00	359.46	6600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6700.00	0.00	359.46	6700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6800.00	0.00	359.46	6800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6900.00	0.00	359.46	6900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7000.00	0.00	359.46	7000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7100.00	0.00	359.46	7100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7200.00	0.00	359.46	7200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7300.00	0.00	359.46	7300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7400.00	0.00	359.46	7400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7500.00	0.00	359.46	7500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7600.00	0.00	359.46	7600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7700.00	0.00	359.46	7700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7800.00	0.00	359.46	7800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7900.00	0.00	359.46	7900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8000.00	0.00	359.46	8000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8100.00	0.00	359.46	8100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8200.00	0.00	359.46	8200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8300.00	0.00	359.46	8300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8400.00	0.00	359.46	8400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8500.00	0.00	359.46	8500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8600.00	0.00	359.46	8600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8700.00	0.00	359.46	8700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8800.00	0.00	359.46	8800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8900.00	0.00	359.46	8900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9000.00	0.00	359.46	9000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9100.00	0.00	359.46	9100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9200.00	0.00	359.46	9200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9300.00	0.00	359.46	9300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9400.00	0.00	359.46	9400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9500.00	0.00	359.46	9500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9600.00	0.00	359.46	9600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9700.00	0.00	359.46	9700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9800.00	0.00	359.46	9800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9900.00	0.00	359.46	9900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	10000.00	0.00	359.46	10000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	10100.00	0.00	359.46	10100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	10200.00	0.00	359.46	10200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	10300.00	0.00	359.46	10300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
Build 12"/100' DLS	10362.54	0.00	359.46	10382.54	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	10400.00	2.10	359.46	10400.00	0.32	0.32	0.00	12.00	591984.92	785082.20	N 32 37 29.71	W 103 32 29.84
	10500.00	14.10	359.46	10498.82	14.37	14.37	-0.14	12.00	591998.97	785082.06	N 32 37 29.85	W 103 32 29.85
	10600.00	26.10	359.46	10592.56	48.67	48.67	-0.46	12.00	592033.27	785081.74	N 32 37 30.19	W 103 32 29.85
	10700.00	38.10	359.46	10677.12	101.70	101.70	-0.96	12.00	592066.30	785081.24	N 32 37 30.72	W 103 32 29.85
	10800.00	50.10	359.46	10748.81	171.16	171.16	-1.61	12.00	592155.75	785080.59	N 32 37 31.40	W 103 32 29.85
	10900.00	62.10	359.46	10804.49	254.00	254.00	-2.39	12.00	592238.59	785079.81	N 32 37 32.22	W 103 32 29.85
	11000.00	74.10	359.46	10841.73	346.61	346.61	-3.27	12.00	592331.20	785078.93	N 32 37 33.14	W 103 32 29.85
	11100.00	86.10	359.46	10858.90	444.93	444.93	-4.19	12.00	592429.52	785078.01	N 32 37 34.11	W 103 32 29.86
Landing Point	11132.54	90.00	359.46	10860.00	477.44	477.44	-4.50	12.00	592462.03	785077.70	N 32 37 34.44	W 103 32 29.86
	11200.00	90.00	359.46	10860.00	544.90	544.90	-5.14	0.00	592529.49	785077.06	N 32 37 35.10	W 103 32 29.86

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	11300.00	90.00	359.46	10860.00	644.90	644.90	-6.08	0.00	592629.48	785076.12	N 32 37 36.09	W 103 32 29.86
	11400.00	90.00	359.46	10860.00	744.89	744.89	-7.02	0.00	592729.47	785075.18	N 32 37 37.08	W 103 32 29.86
	11500.00	90.00	359.46	10860.00	844.89	844.89	-7.96	0.00	592829.47	785074.24	N 32 37 38.07	W 103 32 29.86
	11600.00	90.00	359.46	10860.00	944.88	944.88	-8.90	0.00	592929.46	785073.30	N 32 37 39.06	W 103 32 29.87
	11700.00	90.00	359.46	10860.00	1044.88	1044.88	-9.84	0.00	593029.45	785072.36	N 32 37 40.05	W 103 32 29.87
	11800.00	90.00	359.46	10860.00	1144.87	1144.87	-10.79	0.00	593129.45	785071.41	N 32 37 41.04	W 103 32 29.87
	11900.00	90.00	359.46	10860.00	1244.87	1244.87	-11.73	0.00	593229.44	785070.47	N 32 37 42.03	W 103 32 29.87
	12000.00	90.00	359.46	10860.00	1344.87	1344.87	-12.67	0.00	593329.43	785069.53	N 32 37 43.02	W 103 32 29.88
	12100.00	90.00	359.46	10860.00	1444.86	1444.86	-13.61	0.00	593429.42	785068.59	N 32 37 44.01	W 103 32 29.88
	12200.00	90.00	359.46	10860.00	1544.86	1544.86	-14.55	0.00	593529.42	785067.65	N 32 37 45.00	W 103 32 29.88
	12300.00	90.00	359.46	10860.00	1644.85	1644.85	-15.49	0.00	593629.41	785066.71	N 32 37 45.99	W 103 32 29.88
	12400.00	90.00	359.46	10860.00	1744.85	1744.85	-16.44	0.00	593729.40	785065.76	N 32 37 46.98	W 103 32 29.89
	12500.00	90.00	359.46	10860.00	1844.84	1844.84	-17.38	0.00	593829.40	785064.82	N 32 37 47.97	W 103 32 29.89
	12600.00	90.00	359.46	10860.00	1944.84	1944.84	-18.32	0.00	593929.39	785063.88	N 32 37 48.96	W 103 32 29.89
	12700.00	90.00	359.46	10860.00	2044.83	2044.83	-19.26	0.00	594029.38	785062.94	N 32 37 49.94	W 103 32 29.89
	12800.00	90.00	359.46	10860.00	2144.83	2144.83	-20.20	0.00	594129.38	785062.00	N 32 37 50.93	W 103 32 29.89
	12900.00	90.00	359.46	10860.00	2244.83	2244.83	-21.14	0.00	594229.37	785061.06	N 32 37 51.92	W 103 32 29.90
	13000.00	90.00	359.46	10860.00	2344.82	2344.82	-22.09	0.00	594329.36	785060.11	N 32 37 52.91	W 103 32 29.90
	13100.00	90.00	359.46	10860.00	2444.82	2444.82	-23.03	0.00	594429.36	785059.17	N 32 37 53.90	W 103 32 29.90
	13200.00	90.00	359.46	10860.00	2544.81	2544.81	-23.97	0.00	594529.35	785058.23	N 32 37 54.89	W 103 32 29.90
	13300.00	90.00	359.46	10860.00	2644.81	2644.81	-24.91	0.00	594629.34	785057.29	N 32 37 55.88	W 103 32 29.91
	13400.00	90.00	359.46	10860.00	2744.80	2744.80	-25.85	0.00	594729.33	785056.35	N 32 37 56.87	W 103 32 29.91
	13500.00	90.00	359.46	10860.00	2844.80	2844.80	-26.79	0.00	594829.33	785055.41	N 32 37 57.86	W 103 32 29.91
	13600.00	90.00	359.46	10860.00	2944.79	2944.79	-27.74	0.00	594929.32	785054.46	N 32 37 58.85	W 103 32 29.91
	13700.00	90.00	359.46	10860.00	3044.79	3044.79	-28.68	0.00	595029.31	785053.52	N 32 37 59.84	W 103 32 29.91
	13800.00	90.00	359.46	10860.00	3144.79	3144.79	-29.62	0.00	595129.31	785052.58	N 32 38 0.83	W 103 32 29.92
	13900.00	90.00	359.46	10860.00	3244.78	3244.78	-30.56	0.00	595229.30	785051.64	N 32 38 1.82	W 103 32 29.92
	14000.00	90.00	359.46	10860.00	3344.78	3344.78	-31.50	0.00	595329.29	785050.70	N 32 38 2.81	W 103 32 29.92
	14100.00	90.00	359.46	10860.00	3444.77	3444.77	-32.45	0.00	595429.29	785049.76	N 32 38 3.80	W 103 32 29.92
	14200.00	90.00	359.46	10860.00	3544.77	3544.77	-33.39	0.00	595529.28	785048.81	N 32 38 4.79	W 103 32 29.93
	14300.00	90.00	359.46	10860.00	3644.76	3644.76	-34.33	0.00	595629.27	785047.87	N 32 38 5.78	W 103 32 29.93
	14400.00	90.00	359.46	10860.00	3744.76	3744.76	-35.27	0.00	595729.27	785046.93	N 32 38 6.77	W 103 32 29.93
	14500.00	90.00	359.46	10860.00	3844.75	3844.75	-36.21	0.00	595829.26	785045.99	N 32 38 7.75	W 103 32 29.93
	14600.00	90.00	359.46	10860.00	3944.75	3944.75	-37.15	0.00	595929.25	785045.05	N 32 38 8.74	W 103 32 29.94
	14700.00	90.00	359.46	10860.00	4044.75	4044.75	-38.10	0.00	596029.24	785044.11	N 32 38 9.73	W 103 32 29.94
	14800.00	90.00	359.46	10860.00	4144.74	4144.74	-39.04	0.00	596129.24	785043.16	N 32 38 10.72	W 103 32 29.94
	14900.00	90.00	359.46	10860.00	4244.74	4244.74	-39.98	0.00	596229.23	785042.22	N 32 38 11.71	W 103 32 29.94
	15000.00	90.00	359.46	10860.00	4344.73	4344.73	-40.92	0.00	596329.22	785041.28	N 32 38 12.70	W 103 32 29.94
	15100.00	90.00	359.46	10860.00	4444.73	4444.73	-41.86	0.00	596429.22	785040.34	N 32 38 13.69	W 103 32 29.95
	15200.00	90.00	359.46	10860.00	4544.72	4544.72	-42.80	0.00	596529.21	785039.40	N 32 38 14.68	W 103 32 29.95
	15300.00	90.00	359.46	10860.00	4644.72	4644.72	-43.75	0.00	596629.20	785038.46	N 32 38 15.67	W 103 32 29.95
	15400.00	90.00	359.46	10860.00	4744.71	4744.71	-44.69	0.00	596729.20	785037.51	N 32 38 16.66	W 103 32 29.95
	15500.00	90.00	359.46	10860.00	4844.71	4844.71	-45.63	0.00	596829.19	785036.57	N 32 38 17.65	W 103 32 29.96
	15600.00	90.00	359.46	10860.00	4944.71	4944.71	-46.57	0.00	596929.18	785035.63	N 32 38 18.64	W 103 32 29.96
	15700.00	90.00	359.46	10860.00	5044.70	5044.70	-47.51	0.00	597029.18	785034.69	N 32 38 19.63	W 103 32 29.96
	15800.00	90.00	359.46	10860.00	5144.70	5144.70	-48.45	0.00	597129.17	785033.75	N 32 38 20.62	W 103 32 29.96
	15900.00	90.00	359.46	10860.00	5244.69	5244.69	-49.40	0.00	597229.16	785032.81	N 32 38 21.61	W 103 32 29.97

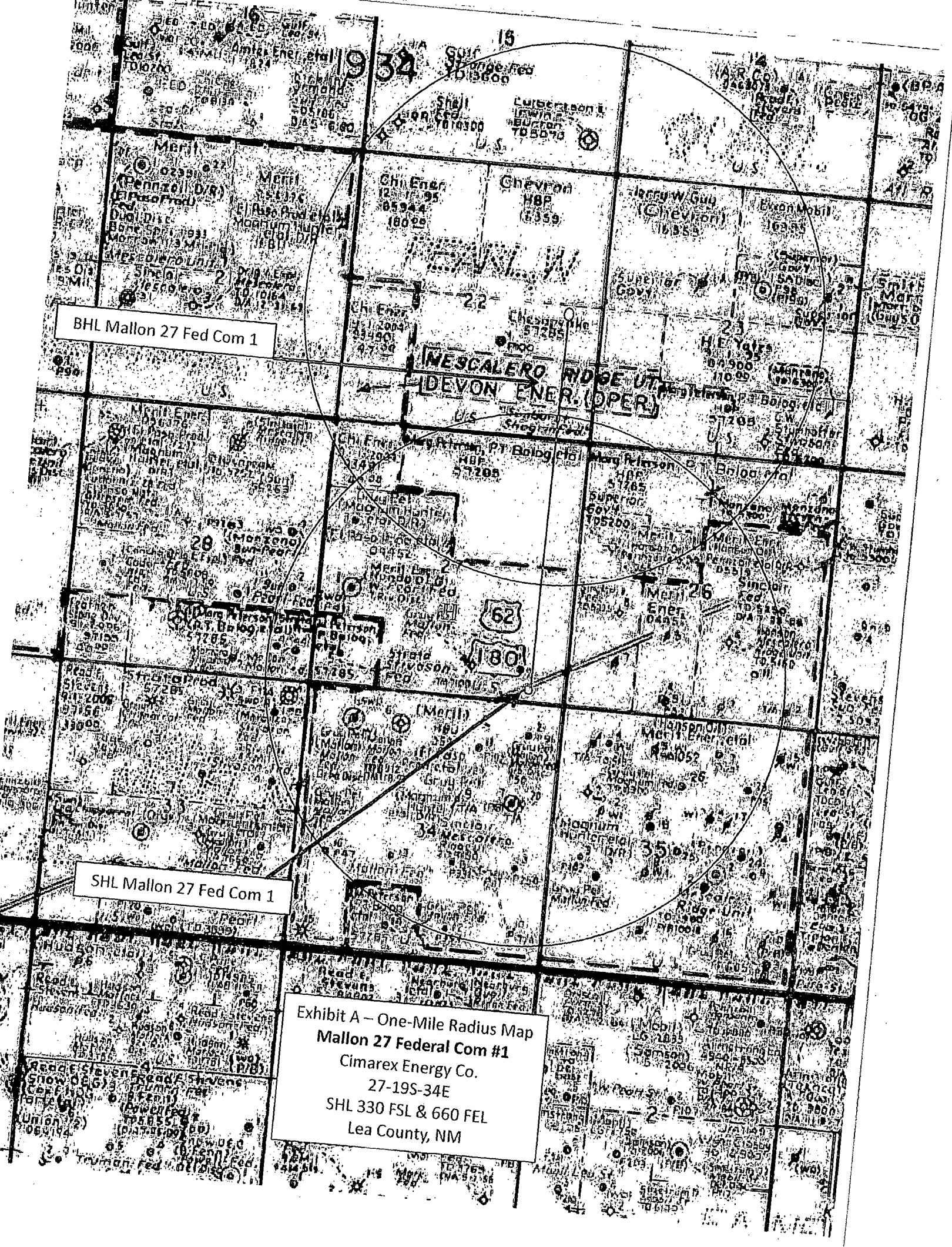
Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	16000.00	90.00	359.46	10860.00	5344.69	5344.69	-50.34	0.00	597329.15	785031.86	N 32 38 22.60	W 103 32 29.97
	16100.00	90.00	359.46	10860.00	5444.68	5444.68	-51.28	0.00	597429.15	785030.92	N 32 38 23.59	W 103 32 29.97
	16200.00	90.00	359.46	10860.00	5544.68	5544.68	-52.22	0.00	597529.14	785029.98	N 32 38 24.58	W 103 32 29.97
	16300.00	90.00	359.46	10860.00	5644.67	5644.67	-53.16	0.00	597629.13	785029.04	N 32 38 25.56	W 103 32 29.97
	16400.00	90.00	359.46	10860.00	5744.67	5744.67	-54.10	0.00	597729.13	785028.10	N 32 38 26.55	W 103 32 29.98
	16500.00	90.00	359.46	10860.00	5844.67	5844.67	-55.05	0.00	597829.12	785027.15	N 32 38 27.54	W 103 32 29.98
	16600.00	90.00	359.46	10860.00	5944.66	5944.66	-55.99	0.00	597929.11	785026.21	N 32 38 28.53	W 103 32 29.98
	16700.00	90.00	359.46	10860.00	6044.66	6044.66	-56.93	0.00	598029.11	785025.27	N 32 38 29.52	W 103 32 29.98
	16800.00	90.00	359.46	10860.00	6144.65	6144.65	-57.87	0.00	598129.10	785024.33	N 32 38 30.51	W 103 32 29.99
	16900.00	90.00	359.46	10860.00	6244.65	6244.65	-58.81	0.00	598229.09	785023.39	N 32 38 31.50	W 103 32 29.99
	17000.00	90.00	359.46	10860.00	6344.64	6344.64	-59.76	0.00	598329.09	785022.45	N 32 38 32.49	W 103 32 29.99
	17100.00	90.00	359.46	10860.00	6444.64	6444.64	-60.70	0.00	598429.08	785021.50	N 32 38 33.48	W 103 32 29.99
	17200.00	90.00	359.46	10860.00	6544.63	6544.63	-61.64	0.00	598529.07	785020.56	N 32 38 34.47	W 103 32 30.00
	17300.00	90.00	359.46	10860.00	6644.63	6644.63	-62.58	0.00	598629.06	785019.62	N 32 38 35.46	W 103 32 30.00
	17400.00	90.00	359.46	10860.00	6744.63	6744.63	-63.52	0.00	598729.06	785018.68	N 32 38 36.45	W 103 32 30.00
	17500.00	90.00	359.46	10860.00	6844.62	6844.62	-64.46	0.00	598829.05	785017.74	N 32 38 37.44	W 103 32 30.00
	17600.00	90.00	359.46	10860.00	6944.62	6944.62	-65.41	0.00	598929.04	785016.80	N 32 38 38.43	W 103 32 30.00
	17700.00	90.00	359.46	10860.00	7044.61	7044.61	-66.35	0.00	599029.04	785015.85	N 32 38 39.42	W 103 32 30.01
	17800.00	90.00	359.46	10860.00	7144.61	7144.61	-67.29	0.00	599129.03	785014.91	N 32 38 40.41	W 103 32 30.01
	17900.00	90.00	359.46	10860.00	7244.60	7244.60	-68.23	0.00	599229.02	785013.97	N 32 38 41.40	W 103 32 30.01
Cimarex Mallon 27 Federal Com #1H - PBHL	17928.78	90.00	359.46	10860.00	7273.38	7273.38	-68.50	0.00	599257.80	785013.70	N 32 38 41.68	W 103 32 30.01

Survey Type: Non-Def. Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	17928.779	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Mallon Federal Com #1H Rev2



BHL Mallon 27 Fed Com 1

MESCALERO RIDGE UTA
DEVON ENER. (OPER.)

SHL Mallon 27 Fed Com 1

Exhibit A - One-Mile Radius Map
Mallon 27 Federal Com #1
Cimarex Energy Co.
27-19S-34E
SHL 330 FSL & 660 FEL
Lea County, NM