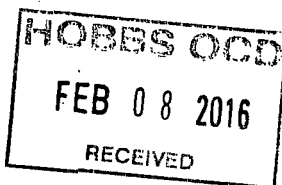


OCD Hobbs



ATS-16-278

FORM APPROVED
OMB No. 1004-0137
Expires January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work ☒ DRILL ☐ REENTER		5. Lease Serial No. SHLABHL: NMLC0063586
1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion ☒ Hydraulic Fracturing ☒ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator Cimarex Energy Co. OF COLORADO (162683)		8. Lease Name and Well No. (37971) Southern California 29 Federal 19H
3a. Address 202 S. Cheyenne Ave., Ste 1000, Tulsa, OK 74103	3b. Phone No. (include area code) 918-585-1100	9. API Well No. 30-025-43070
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At Surface 1390 FSL & 308 FWL At proposed prod. Zone 1310 FSL & 330 FEL Bone Spring		10. Field and Pool, or Exploratory (41460) Wichita, Bone Spring, SOUTH
14. Distance in miles and direction from nearest town or post office* Carlsbad, NM is +/- 29.0 miles southwesterly		11. Sec., T. R. M. or Blk. and Survey or Area 29, 19S, 32E
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any) 308	16. No of acres in lease NMLC0063586=640.00 acres	17. Spacing Unit dedicated to this well 200.00 320
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 590' to the Southern California 29 Federal 17	19. Proposed Depth Pilot Hole TD: N/A 13,725 MD 9,300 TVD	20. BLM/BIA Bond No. in file NMB001187: NMB001188
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3546 GR	22. Approximate date work will start* 2/1/16	23. Estimated duration 35 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- | | |
|---|---|
| 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 BLM. |

25. Signature Aricka Easterling	Name (Printed/Typed) Aricka Easterling	Date 12/15/15
Title Regulatory Compliance		
Approved By (Signature) Steve Coffey	Name (Printed/Typed) CARLSBAD FIELD OFFICE	Date FEB - 4 2016
Title FIELD MANAGER		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Capitan Controlled Water Basin

Ka
2/10/16

SEE ATTACHED FOR
CONDITIONS OF APPROVAL
FEB 11 2016

1. Geological Formations

TVD of target 9,300

Pilot Hole TD N/A

MD at TD 13,725

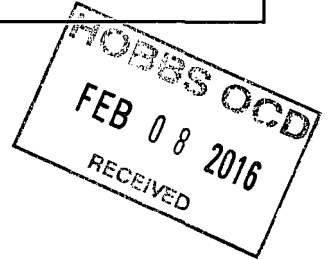
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
OSE Groundwater	625	N/A	
Rustler	859	N/A	
Tansill	2455	N/A	
Yates	2570	N/A	
Capitan	2961	N/A	
Delaware Sands	4400	N/A	
Bone Spring	7200	Hydrocarbons	
1st Bss	8400	Hydrocarbons	
2nd BSS	9050	Hydrocarbons	
2nd Bone Spring Ss	9275	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
26	0	950 900	20"	94.00	J-55	BT&C	1.26	5.12	16.57
17 1/2	0	2700 2555	13-3/8"	54.50	J-55	BT&C	1.47	2.02	6.13
12 1/4	0	4200 3250	9-5/8"	40.00	J-55	BT&C	1.29	1.98	3.62
8 3/4	0	8666	5-1/2"	17.00	L-80	LT&C	1.52	1.87	2.14
8 3/4	8666	13725	5-1/2"	17.00	L-80	BT&C	1.41	1.74	36.83
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h



	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	N

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	1265	14.80	1.34	9.15	9.5	Tail: Class C + LCM
Intermediate	1123	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	332	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate 2 - Stage #2	562	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
						DV/ECP Tool 2705'
Intermediate 2 - Stage #1	195	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	251	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
						DV/ECP Tool 5410'
Production	748	11.90	2.40	13.80	30	Lead: 35:65 (poz:H) + Salt + Sodium Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder
	1082	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

DV tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0	25
Intermediate	0	42
Intermediate 2 - Stage #1	2705	37
Production	2700	14

See
COA

4. Pressure Control Equipment

A variance is requested for the use of a diverter on the surface casing. See attached for schematic.					
BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
17 1/2	13 5/8	2M	Annular	X	50% of working pressure
			Blind Ram		2M
			Pipe Ram		
			Double Ram	X	
			Other		
12 1/4	13 5/8	2M	Annular	X	50% of working pressure
			Blind Ram		2M
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	X	
			Other		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.	
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
N	Are anchors required by manufacturer?

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 900' 950	FW Spud Mud	8.30 - 8.80	28	N/C
900' to 2555' 2700	Brine Water	9.70 - 10.20	30-32	N/C
2555' to 4350' 4200	Fresh Water	8.30 - 8.80	28	N/C
4350' to 13725'	FW/Cut Brine	8.70 - 9.20	30-32	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
---	-----------------------------

6. Logging and Testing Procedures

Logging, Coring and Testing	
X	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No logs are planned based on well control or offset log information.
	Drill stem test?
	Coring?

Additional Logs Planned	Interval
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7. Drilling Conditions

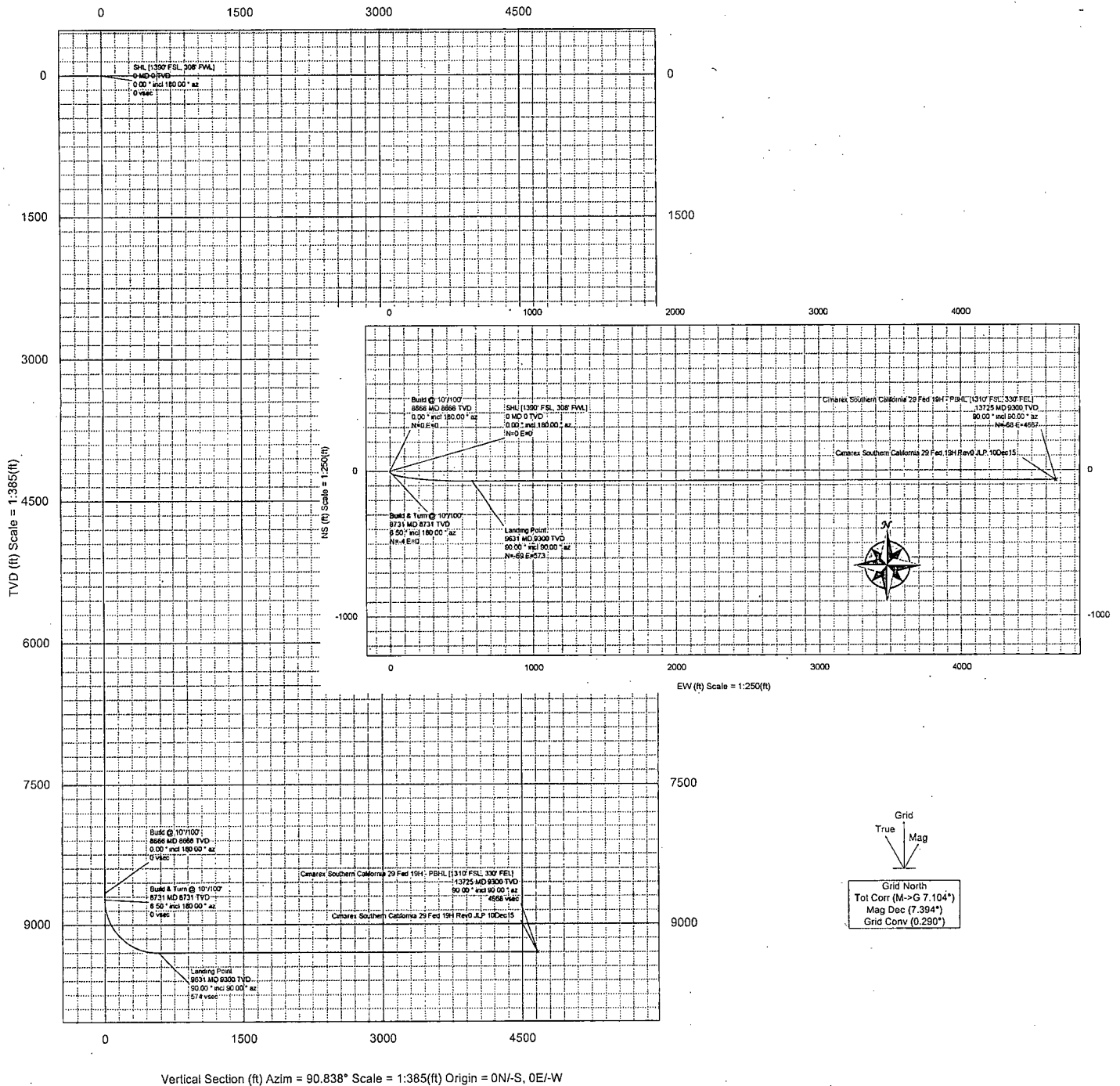
Condition	
BH Pressure at deepest TVD	4449 psi
Abnormal Temperature	No

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

X	H ₂ S is present
X	H ₂ S plan is attached

8. Other Facets of Operation

Borehole:	Well:	Field:	Structure:
Original Borehole	Southern California 29 Fed 19H	NM Lea County (NAD 83)	TBD
Gravity & Magnetic Parameters			
Model: HDGM 2015	Dip: 60.619°	Date: 10-Dec-2015	Surface Location
MagDec: 7.394°	FS: 48578.644nT	Gravity FS: 998.506mgm (9.80665 Based)	NAD83 New Mexico State Plane, Eastern Zone, US Feet
		Lat: N 32 37 40.86	Northings: 592821.481TUS
		Lon: W 103 47 45.46	Easting: 708772.121TUS
		Grid Conv: 0.2897°	Miscellaneous
		Scale Fact: 0.99994043	Slot: 19H
		Plan: Rev0 JLP 10Dec15	TVD Ref: Unknown(3546.4ft above MSL)



Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL (1390° FSL, 308° FWL)	0.00	0.00	180.00	0.00	0.00	0.00	0.00	
Build @ 10°/100'	8665.86	0.00	180.00	8665.86	0.00	0.00	0.00	0.00
Build & Turn @ 10°/100'	8730.86	6.50	180.00	8730.72	0.05	-3.68	0.00	10.00
Landing Point	9030.86	90.00	90.00	9300.00	573.90	-68.51	572.96	10.00
Cimarex Southern California 29 Fed 19H - PBHL (1310° FSL, 330° FEL)	13725.25	90.00	90.00	9300.00	4667.85	-68.26	4667.35	0.00

CONTROLLED

Plan ref	Cimarex Southern California 29 Fed 19H - PWB
Drawing ref	JLP 10Dec15
Copy number	of 3
Date	10-Dec-2015
1 Client	
2 Client	
3 Office	
4 Office	
Copy number	for

Cimarex Southern California 29 Fed 19H Rev0 JLP 10Dec15 Proposal

Geodetic Report



(Non-Def Plan)

Report Date: December 10, 2015 - 02:14 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Spot: Cimarex Southern California 29 Fed 19H / Cimarex Southern California 29 Fed 19H
Well: Cimarex Southern California 29 Fed 19H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Southern California 29 Fed 19H Rev0 JLP 10Dec15
Survey Date: December 10, 2015
Tort / AHD / DDI / ERD Ratio: 96.500' / 4682.323 ft / 5.824 / 0.503
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 37' 40.85884", W 103° 47' 45.45957"
Location Grid N/E Y/X: N 592621.490 ftUS, E 706772.120 ftUS
CRS Grid Convergence Angle: 0.2897°
Grid Scale Factor: 0.99994043
Version / Patch: 2.8.572.0

Survey / DLS Computation:
Vertical Section Azimuth: Minimum Curvature / Lubinski
Vertical Section Origin: 90.838° (Grid North)
TVD Reference Datum: 0.000 ft, 0.000 ft
TVD Reference Elevation: Unknown
Seabed / Ground Elevation: 3546.400 ft above MSL
Magnetic Declination: 7.394°
Total Gravity Field Strength: 998.5064mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48578.644 nT
Magnetic Dip Angle: 60.619°
Declination Date: December 10, 2015
Magnetic Declination Model: HDGM 2015
North Reference: Grid North
Grid Convergence Used: 0.2897°
Total Corr Mag North->Grid North: 7.1046°
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 [1390' FSL, 308' FWL]	0.00	0.00	180.00	0.00	0.00	0.00	0.00	N/A	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	100.00	0.00	180.00	100.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	200.00	0.00	180.00	200.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	300.00	0.00	180.00	300.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	400.00	0.00	180.00	400.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	500.00	0.00	180.00	500.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	600.00	0.00	180.00	600.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	700.00	0.00	180.00	700.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	800.00	0.00	180.00	800.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	900.00	0.00	180.00	900.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	1000.00	0.00	180.00	1000.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	1100.00	0.00	180.00	1100.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	1200.00	0.00	180.00	1200.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	1300.00	0.00	180.00	1300.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	1400.00	0.00	180.00	1400.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	1500.00	0.00	180.00	1500.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	1600.00	0.00	180.00	1600.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	1700.00	0.00	180.00	1700.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	1800.00	0.00	180.00	1800.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	1900.00	0.00	180.00	1900.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	2000.00	0.00	180.00	2000.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	2100.00	0.00	180.00	2100.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	2200.00	0.00	180.00	2200.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	2300.00	0.00	180.00	2300.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	2400.00	0.00	180.00	2400.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	2500.00	0.00	180.00	2500.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northng (ftUS)	Eastng (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
Build @ 10°/100'	8500.00	0.00	180.00	8500.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	8600.00	0.00	180.00	8600.00	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	8665.86	0.00	180.00	8665.86	0.00	0.00	0.00	0.00	592621.49	706772.12	N 32 37 40.86	W 103 47 45.46
	8700.00	3.41	180.00	8699.98	0.01	-1.02	0.00	10.00	592620.47	706772.12	N 32 37 40.85	W 103 47 45.46
Build & Turn @ 10°/100'	8730.86	6.50	180.00	8730.72	0.05	-3.68	0.00	10.00	592617.81	706772.12	N 32 37 40.82	W 103 47 45.46
	8800.00	9.48	133.03	8799.25	4.33	-11.49	4.17	10.00	592610.00	706776.29	N 32 37 40.74	W 103 47 45.41
	8900.00	18.09	110.42	8896.34	25.11	-22.55	24.78	10.00	592598.94	706796.90	N 32 37 40.63	W 103 47 45.17
	9000.00	27.63	102.57	8988.40	62.54	-33.04	62.06	10.00	592588.45	706834.17	N 32 37 40.53	W 103 47 44.74
Landing Point	9100.00	37.40	98.57	9072.64	115.47	-42.63	114.86	10.00	592578.86	706886.97	N 32 37 40.43	W 103 47 44.12
	9200.00	47.26	96.04	9146.48	182.30	-51.04	181.57	10.00	592570.45	706953.68	N 32 37 40.34	W 103 47 43.34
	9300.00	57.15	94.21	9207.69	261.00	-58.01	260.18	10.00	592563.48	707032.29	N 32 37 40.27	W 103 47 42.42
	9400.00	67.07	92.76	9254.41	349.18	-63.33	348.29	10.00	592558.17	707120.39	N 32 37 40.21	W 103 47 41.39
	9500.00	77.00	91.50	9285.22	444.16	-66.83	443.23	10.00	592554.66	707215.33	N 32 37 40.18	W 103 47 40.28
	9600.00	86.93	90.35	9299.17	543.06	-68.42	542.11	10.00	592553.08	707314.20	N 32 37 40.15	W 103 47 39.12
	9630.86	90.00	90.00	9300.00	573.90	-68.51	572.96	10.00	592552.98	707345.05	N 32 37 40.15	W 103 47 38.76
	9700.00	90.00	90.00	9300.00	643.03	-68.51	642.10	0.00	592552.99	707414.18	N 32 37 40.15	W 103 47 37.95
	9800.00	90.00	90.00	9300.00	743.02	-68.50	742.10	0.00	592552.99	707514.17	N 32 37 40.14	W 103 47 36.79
	9900.00	90.00	90.00	9300.00	843.01	-68.49	842.10	0.00	592553.01	707614.17	N 32 37 40.14	W 103 47 35.62
	10000.00	90.00	90.00	9300.00	943.00	-68.49	942.10	0.00	592553.01	707714.16	N 32 37 40.13	W 103 47 34.45
	10100.00	90.00	90.00	9300.00	1042.99	-68.48	1042.10	0.00	592553.01	707814.15	N 32 37 40.13	W 103 47 33.28
	10200.00	90.00	90.00	9300.00	1142.98	-68.48	1142.10	0.00	592553.02	707914.15	N 32 37 40.12	W 103 47 32.11
	10300.00	90.00	90.00	9300.00	1242.97	-68.47	1242.10	0.00	592553.02	708014.14	N 32 37 40.12	W 103 47 30.94
	10400.00	90.00	90.00	9300.00	1342.96	-68.46	1342.10	0.00	592553.03	708114.14	N 32 37 40.11	W 103 47 29.77
	10500.00	90.00	90.00	9300.00	1442.94	-68.46	1442.10	0.00	592553.04	708214.13	N 32 37 40.11	W 103 47 28.60
	10600.00	90.00	90.00	9300.00	1542.93	-68.45	1542.10	0.00	592553.04	708314.12	N 32 37 40.10	W 103 47 27.43
	10700.00	90.00	90.00	9300.00	1642.92	-68.45	1642.10	0.00	592553.05	708414.12	N 32 37 40.10	W 103 47 26.26
	10800.00	90.00	90.00	9300.00	1742.91	-68.44	1742.10	0.00	592553.05	708514.11	N 32 37 40.09	W 103 47 25.09
	10900.00	90.00	90.00	9300.00	1842.90	-68.43	1842.10	0.00	592553.06	708614.10	N 32 37 40.09	W 103 47 23.92
	11000.00	90.00	90.00	9300.00	1942.89	-68.43	1942.10	0.00	592553.07	708714.10	N 32 37 40.08	W 103 47 22.76
	11100.00	90.00	90.00	9300.00	2042.88	-68.42	2042.10	0.00	592553.08	708814.09	N 32 37 40.08	W 103 47 21.59
	11200.00	90.00	90.00	9300.00	2142.87	-68.42	2142.10	0.00	592553.08	708914.09	N 32 37 40.07	W 103 47 20.42
	11300.00	90.00	90.00	9300.00	2242.86	-68.41	2242.10	0.00	592553.08	709014.08	N 32 37 40.07	W 103 47 19.25
	11400.00	90.00	90.00	9300.00	2342.85	-68.40	2342.10	0.00	592553.09	709114.07	N 32 37 40.06	W 103 47 18.08
	11500.00	90.00	90.00	9300.00	2442.84	-68.40	2442.10	0.00	592553.10	709214.07	N 32 37 40.06	W 103 47 16.91
	11600.00	90.00	90.00	9300.00	2542.83	-68.39	2542.10	0.00	592553.10	709314.06	N 32 37 40.05	W 103 47 15.74
	11700.00	90.00	90.00	9300.00	2642.82	-68.39	2642.10	0.00	592553.11	709414.06	N 32 37 40.05	W 103 47 14.57
	11800.00	90.00	90.00	9300.00	2742.80	-68.38	2742.10	0.00	592553.12	709514.05	N 32 37 40.04	W 103 47 13.40
	11900.00	90.00	90.00	9300.00	2842.79	-68.37	2842.10	0.00	592553.13	709614.04	N 32 37 40.03	W 103 47 12.23
	12000.00	90.00	90.00	9300.00	2942.78	-68.37	2942.10	0.00	592553.13	709714.04	N 32 37 40.03	W 103 47 11.06
	12100.00	90.00	90.00	9300.00	3042.77	-68.36	3042.10	0.00	592553.13	709814.03	N 32 37 40.03	W 103 47 9.89
	12200.00	90.00	90.00	9300.00	3142.76	-68.36	3142.10	0.00	592553.14	709914.02	N 32 37 40.02	W 103 47 8.72
	12300.00	90.00	90.00	9300.00	3242.75	-68.35	3242.10	0.00	592553.15	710014.02	N 32 37 40.02	W 103 47 7.56
	12400.00	90.00	90.00	9300.00	3342.74	-68.34	3342.10	0.00	592553.15	710114.01	N 32 37 40.01	W 103 47 6.39
	12500.00	90.00	90.00	9300.00	3442.73	-68.34	3442.10	0.00	592553.16	710214.01	N 32 37 40.01	W 103 47 5.22
	12600.00	90.00	90.00	9300.00	3542.72	-68.33	3542.10	0.00	592553.16	710314.00	N 32 37 40.00	W 103 47 4.05
	12700.00	90.00	90.00	9300.00	3642.71	-68.33	3642.10	0.00	592553.17	710413.99	N 32 37 40.00	W 103 47 2.88
	12800.00	90.00	90.00	9300.00	3742.70	-68.32	3742.10	0.00	592553.18	710513.98	N 32 37 39.99	W 103 47 1.71
	12900.00	90.00	90.00	9300.00	3842.69	-68.31	3842.10	0.00	592553.18	710613.98	N 32 37 39.99	W 103 47 0.54
	13000.00	90.00	90.00	9300.00	3942.68	-68.31	3942.10	0.00	592553.19	710713.98	N 32 37 39.98	W 103 46 59.37
	13100.00	90.00	90.00	9300.00	4042.66	-68.30	4042.10	0.00	592553.19	710813.97	N 32 37 39.98	W 103 46 58.20
	13200.00	90.00	90.00	9300.00	4142.65	-68.29	4142.10	0.00	592553.20	710913.96	N 32 37 39.97	W 103 46 57.03
	13300.00	90.00	90.00	9300.00	4242.64	-68.29	4242.10	0.00	592553.21	711013.96	N 32 37 39.97	W 103 46 55.86
	13400.00	90.00	90.00	9300.00	4342.63	-68.28	4342.10	0.00	592553.21	711113.95	N 32 37 39.96	W 103 46 54.69
	13500.00	90.00	90.00	9300.00	4442.62	-68.28	4442.10	0.00	592553.22	711213.94	N 32 37 39.96	W 103 46 53.52
	13600.00	90.00	90.00	9300.00	4542.61	-68.27	4542.10	0.00	592553.22	711313.94	N 32 37 39.95	W 103 46 52.36
	13700.00	90.00	90.00	9300.00	4642.60	-68.26	4642.10	0.00	592553.23	711413.93	N 32 37 39.95	W 103 46 51.19

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 ° ' ")
Cimarex Southern California 29 Fed 19H - PBHL [1310' FSL, 330' FEL]	13725.25	90.00	90.00	9300.00	4667.85	-68.26	4667.35	0.00	592553.23	711439.18	N 32 37 39.95 W	103 46 50.89

Survey Type:

Non-Def Plan

Survey Error Model:
Survey Program:

ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

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	13725.250	1/100.000	30.000	30.000	SLB_UNKNOWN	Original Borehole / Cimarex Southern California 29 Fed 19H