

ATS-16-726

NM OIL CONSERVATION
ARTESIA DISTRICT

Form 3160-3
(June 2015)

OCT 19 2016

OCD Artesia

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: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER			UNORTHODOX LOCATION	5. Lease Serial No. NMNM118108
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other				6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone				7. If Unit or CA Agreement, Name and No.
2. Name of Operator CHEVRON USA INC			8. Lease Name and Well No. HH SO 8 P2 - 5H	9. API Well No. 30-015-43935
3a. Address 1616 W. BENDER BLVD HOBBS, NM 88240		3b. Phone No. (include area code) 575-263-0431	10. Field and Pool, or Exploratory WILDCAT, WOLFCAMP 96890	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 255' FNL & 960' FWL At proposed prod. zone 180' FNL & 330' FWL Sec 05			11. Sec., T. R. M. or Blk. and Survey or Area SEC17, T26S, R27E, UL D (SHL)	
14. Distance in miles and direction from nearest town or post office* 12.8 MILES FROM MALAGA, NEW MEXICO SW PCM 3/16/16			12. County or Parish EDDY	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 255' FSL		16. No of acres in lease 1920 ACRES	17. Spacing Unit dedicated to this well 320 ACRES	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 4300 FT SKEEN 2 SW		19. Proposed Depth TD 9563' MD 20,126'	20. BLM/BIA Bond No. in file CA 0329	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3245' GL		22. Approximate date work will start* OCTOBER 2016	23. Estimated duration 30 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 must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature <i>Cindy Herrera-Murillo</i>	Name (Printed/Typed) CINDY HERRERA-MURILLO	Date 02/12/2016
Title PERMITTING SPECIALIST		
Approved by (Signature) <i>/s/George MacDone</i>	Name (Printed/Typed)	Date OCT 11 2016
Title FIELD MANAGER		
Office CARLSBAD FIELD OFFICE		

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

APPROVAL FOR TWO YEARS

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

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

CERTIFICATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Executed this 19th day of JANUARY, 2016

Name: _____

Sean Cheben-Project Manager

Address: 1400 Smith Street

Houston, TX 77002

Room 40125

Office: 713-372-9382

Email: Sean.Cheben@CHEVRON.COM

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

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

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-43935	² Pool Code 96890	³ Pool Name Age Draw's Wildcat, Wolfcamp, East
⁴ Property Code 317043	⁵ Property Name HH SO 8 P2	⁶ Well Number 5H
⁷ OGRID No. 4323	⁸ Operator Name CHEVRON U.S.A. INC.	⁹ Elevation 3245'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	17	26 SOUTH	27 EAST, N.M.P.M.		255'	NORTH	960'	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	5	26 SOUTH	27 EAST, N.M.P.M.		180'	NORTH	330'	WEST	EDDY

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
320			

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>¹⁶</p> <table border="1"> <caption>PROPOSED BOTTOM HOLE LOCATION</caption> <tr> <td>X=</td> <td>535,284</td> <td>NAD 27</td> </tr> <tr> <td>Y=</td> <td>392,263</td> <td></td> </tr> <tr> <td>LAT.</td> <td>32.078395</td> <td></td> </tr> <tr> <td>LONG.</td> <td>104.219414</td> <td></td> </tr> <tr> <td>X=</td> <td>576,468</td> <td>NAD83</td> </tr> <tr> <td>Y=</td> <td>392,320</td> <td></td> </tr> <tr> <td>LAT.</td> <td>32.078516</td> <td></td> </tr> <tr> <td>LONG.</td> <td>104.219909</td> <td></td> </tr> </table> <p>CORNER COORDINATES TABLE (NAD 27)</p> <p>A - Y=392442.33, X=534954.83 B - Y=392444.24, X=536280.85 C - Y=387143.09, X=534935.36 D - Y=387137.83, X=536254.75 E - Y=381810.94, X=534988.20 F - Y=381808.02, X=536317.14 G - Y=380478.27, X=535007.69 H - Y=380475.74, X=536334.89</p> <p>Mid Point Y=387141.77, X=535265.35</p> <table border="1"> <caption>HH SO 8 P2 5H WELL</caption> <tr> <td>X=</td> <td>535,952</td> <td>NAD 27</td> </tr> <tr> <td>Y=</td> <td>381,554</td> <td></td> </tr> <tr> <td>LAT.</td> <td>32.048953</td> <td></td> </tr> <tr> <td>LONG.</td> <td>104.217295</td> <td></td> </tr> <tr> <td>X=</td> <td>577,136</td> <td>NAD83</td> </tr> <tr> <td>Y=</td> <td>381,611</td> <td></td> </tr> <tr> <td>LAT.</td> <td>32.049075</td> <td></td> </tr> <tr> <td>LONG.</td> <td>104.217789</td> <td></td> </tr> <tr> <td colspan="3">ELEVATION +3245' NAVD 88</td> </tr> </table>	X=	535,284	NAD 27	Y=	392,263		LAT.	32.078395		LONG.	104.219414		X=	576,468	NAD83	Y=	392,320		LAT.	32.078516		LONG.	104.219909		X=	535,952	NAD 27	Y=	381,554		LAT.	32.048953		LONG.	104.217295		X=	577,136	NAD83	Y=	381,611		LAT.	32.049075		LONG.	104.217789		ELEVATION +3245' NAVD 88			<p>¹⁷ OPERATOR CERTIFICATION</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 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.</p> <p><i>Cindy Herrera-Murillo</i> 01/18/16 Signature Date</p> <p>Cindy Herrera-Murillo Printed Name</p> <p>Cherreramurillo@chevron.com E-mail Address</p> <p>¹⁸ SURVEYOR CERTIFICATION</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><i>VALS 2016</i> 15-2016 Date of Survey</p> <p><i>VALS 2016</i> 23006 Signature and Seal of Professional Surveyor</p> <p>23006 Certificate Number</p>
X=	535,284	NAD 27																																																		
Y=	392,263																																																			
LAT.	32.078395																																																			
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ELEVATION +3245' NAVD 88																																																				

T
26
S

Whites City Road

Existing Lease
Road

NAD 27 NEW MEXICO EAST ZONE








DIRECTIONS TO LOCATION:

From Hwy 285 (Pecos Hwy) take Whites City Road West for approximately 7.84 miles to an existing lease road. Head Southwesterly on existing lease road for approximately 1.04 miles to the access entrance on the West side of the road.

VICINITY MAP

SCALE: 1" = 3000'

LEGEND

-  Proposed Well
 Proposed Access Road
 Proposed Drillsite
 Existing Road
 Section Line
 Proposed Frac Pond
 Proposed Facility

CHEVRON U.S.A. INC.

HH SO 8 P2 NO. 5H WELL
LOCATED 255' FNL AND 960' FWL
SECTION 17, T26S-R27E
EDDY COUNTY, NEW MEXICO



C.H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com

DRAWN BY: MBD

REVISIONS

PROJ. MGR.: GDG

No.

DATE:

REVISÉD BY:

DATE: 01/07/2016

No

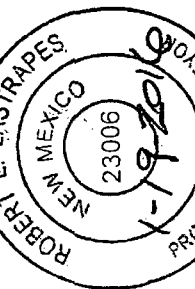
DATE:

REVISÉ BY:

FILENAME: T:\2015\2153438\DWG\HH SO 8 P2 5H_APD.dwg

R 27 E

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Robert L. Lastrapes, Registered Professional
Land Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.



Sec. 8

Bureau of Land Management

T 26 S

S 89°52'10" E 810.78'

End. 2" Iron Pipe w/ Cap
at the NW Corner of
Section 17

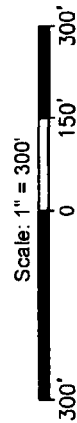
HH SO 8 P2
No. 5H Well
255' FNL, 980' FWL

PROPOSED
PAD
±3.98 Acres

Sec. 17

Bureau of Land Management

(Access Road 1) ± 4289.90', ±2.36 Acres, ±259.99 Rods



C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax 337-232-3299
www.fenstermaker.com



NW PAD CORNER		NE PAD CORNER		HH SO 8 P2 NO. 5H WELL	
X=	535,799	NAD 27	X=	536,129	NAD 27
Y=	381,809		Y=	381,808	
ELEVATION +3241' NAVD 88		ELEVATION +3247' NAVD 88		LAT. 32.048953	
SW PAD CORNER		SE PAD CORNER		LONG. 104.217295	
X=	535,805	NAD 27	X=	536,135	NAD 27
Y=	381,284		Y=	381,284	
ELEVATION +3244' NAVD 88		ELEVATION +3256' NAVD 88		LAT. 32.049075	
				LONG. 104.217789	
				ELEVATION +3245' NAVD 88	

CENTERLINE
PROPOSED
ACCESS ROAD (1)
24' X ±5,444.40'
±3.00 Acres
±329.96 Rods
(SEE PAGE 2)

SURFACE USE PLAT

CHEVRON U.S.A. INC.

PROPOSED PADS, FRAC POND & ACCESS ROADS

HH SO 8 P2 NO. 5H WELL

SECTIONS 9, 16 & 17, T26S-R27E

EDDY COUNTY, NEW MEXICO

PAGE 1 OF 3

REVISIONS

DRAWN BY: LJG

REVISOR BY: MBD

DATE: 1/7/2016

PROJ. MGR: GDG

DATE: 12/22/2015

DATE: 1/19/2016

DATE: 1/19/2016

DATE: 1/19/2016

DATE: 1/19/2016

FILENAME: T:\2015\12153438\DWG\HH SO 8 P2 5H_SUP.dwg

R 27 E

Centerline Proposed Access Roads		
COURSE	BEARING	DISTANCE
A1	S 89° 49' 39" E	398.61"
A2	S 79° 37' 12" E	1478.11'
A3	S 82° 59' 20" E	620.58'
A4	S 89° 50' 47" E	798.19'
A5	S 66° 53' 45" E	988.32'
A6	S 77° 07' 17" E	6.09'
A7	S 77° 07' 39" E	1154.50'
B1	S 00° 54' 03" E	67.85'
B2	N 89° 01' 22" E	1448.01'
B3	S 84° 54' 27" E	215.40'

SEE PAGE 1

Fnd. 2" Iron Pipe
w/ Cap at the
NW Corner of
Section 17

Elev.
3247.4

Elev.
3253.3

Elev.
3239.8

Elev.
3252.0

Elev.
3273.9

Elev.
3296.2

Sec. 8

Bureau of Land Management

Sec. 9

Bureau of Land Management

Sec. 16

Bureau of Land Management

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.

I, Robert L. Lastrapes, Registered Professional
Land Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.

Robert L. Lastrapes
Registration No. 23006



Scale: 1" = 1000'



C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com

NW FRAC POND CORNER	NE FRAC POND CORNER	NW FACILITY CORNER	NE FACILITY CORNER
X= 541,594 NAD 27 Y= 383,209	X= 542,244 NAD 27 Y= 383,220	X= 540,782 NAD 27 Y= 383,045	X= 541,482 NAD 27 Y= 383,057
ELEVATION +3264' NAVD 88	ELEVATION +3270' NAVD 88	ELEVATION +3263' NAVD 88	ELEVATION +3265' NAVD 88
SW FRAC POND CORNER	SE FRAC POND CORNER	SW FACILITY CORNER	SE FACILITY CORNER
X= 541,605 NAD 27 Y= 382,559	X= 542,255 NAD 27 Y= 382,570	X= 540,790 NAD 27 Y= 382,545	X= 541,490 NAD 27 Y= 382,557
ELEVATION +3278' NAVD 88	ELEVATION +3289' NAVD 88	ELEVATION +3274' NAVD 88	ELEVATION +3276' NAVD 88

CENTERLINE
PROPOSED
ACCESS ROAD (3)
24' X ±55.83'
±0.03 Acres
±3.38 Rods 650'

Proposed
Frac Pond
±9.70 Acres

Proposed
Facility
±8.03 Acres

CENTERLINE
PROPOSED
ACCESS ROAD (2)
24' X ±1731.26'
±0.95 Acres
±104.92 Rods

CENTERLINE
PROPOSED
ACCESS ROAD (1)
24' X ±5444.40'
±3.00 Acres
±329.96 Rods

Centerline
Proposed
Access Road
24' X ±1154.50', ±0.64 Acres
±69.97 Rods

SURFACE USE PLAT

CHEVRON U.S.A. INC.

PROPOSED PADS, FRAC POND & ACCESS ROADS

HH SO 8 P2 NO. 5H WELL

SECTIONS 9, 16 & 17, T26S-R27E

EDDY COUNTY, NEW MEXICO

PAGE 2 OF 3

REVISIONS	
DRAWN BY: LJG	REVISIONS
PROJ. MGR.: GDG	No. 1 DATE: 1/7/2016 REVISED BY: MBD
DATE: 12/22/2015	No. DATE: REVISED BY:
FILENAME: T:\2015\152153438\DWG\HH SO 8 P2 5H_SUP.dwg	

DISCLAIMER: At this time, C.H. Fenstermaker & Associates, L.L.C. has not performed nor was asked to perform any type of engineering, hydrological modeling, flood plain, or "No Rise" certification analyses, including but not limited to determining whether the project will impact flood hazards in connection with federal/FEMA, state, and/or local laws, ordinances and regulations. Accordingly, Fenstermaker makes no warranty or representation of any kind as to the foregoing issues, and persons or entities using this information shall do so at their own risk.

NOTE:

Please be advised, that while reasonable efforts are made to locate and verify pipelines and anomalies using our standard pipeline locating equipment, it is impossible to be 100 % effective. As such, we advise using caution when performing work as there is a possibility that pipelines and other hazards, such as fiber optic cables, PVC pipelines, etc. may exist undetected on site.

NOTE:

Many states maintain information centers that establish links between those who dig (excavators) and those who own and operate underground facilities (operators). It is advisable and in most states, law, for the contractor to contact the center for assistance in locating and marking underground utilities. For guidance, New Mexico One Call, www.nmonocall.org

FOR THE EXCLUSIVE USE OF

CHEVRON U.S.A. INC.

I, Robert L. Lastrapes, Registered Professional
Land Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.



C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com



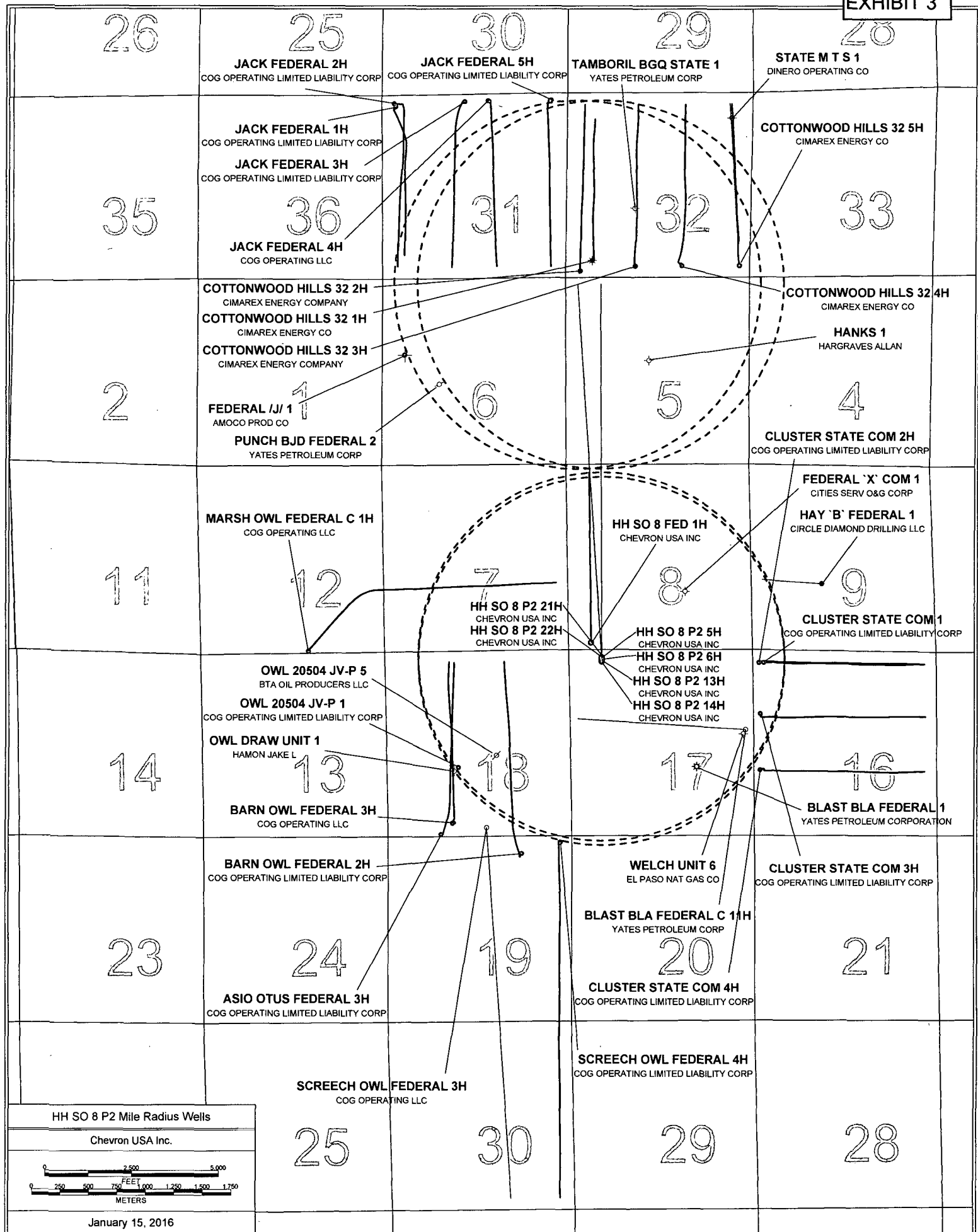
SURFACE USE PLAT

CHEVRON U.S.A. INC.

PROPOSED PADS, FRAC POND & ACCESS ROADS
HH SO 8 P2 NO. 5H WELL
SECTIONS 9, 16 & 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

PAGE 3 OF 3

DRAWN BY: LJG		REVISIONS	
PROJ. MGR.: GDG	No. 1	DATE: 1/7/2016	REVISED BY: MBD
DATE: 12/22/2015	No.	DATE:	REVISED BY:
FILENAME: T:\2015\153438\DWG\HH SO 8 P2 5H_SUP.dwg			



1. **FORMATION TOPS**

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA TVD	KBTVD	MD
Castille		505	
Lamar		2395	
Bell		2310	
Cherry		3208	
Brushy		4450	
Bone Spring/Avalon		6299	
First Bone Spring Sand		6888	
First Bone Spring Shale		6914	
Second Bone Spring Sand		7621	
Harkey Sand		8123	
Third Bone Spring Sand		8617	
Wolfcamp A		9342	
Wolfcamp C		9563	
Lateral TVD Wolfcamp C		9563	20126.47'

2. **ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS**

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Deepest Expected Base of Fresh Water		450
Water	Castille	505
Water	Cherry Canyon	3208
Oil/Gas	Brushy Canyon	4450
Oil/Gas	Bone Spring Limestone	6888
Oil/Gas	First Bone Spring Shale	6914
Oil/Gas	Second Bone Spring Sand	7621
Oil/Gas	Harkey Sand	8123
Oil/Gas	Wolfcamp A	9342
Oil/Gas	Wolfcamp C	9563

All shows of fresh water and minerals will be reported and protected.

3. **BOP EQUIPMENT**

PLEASE REFERENCE MDP

*10 M BOP after surface casing
Batch Drilling*

4. CASING PROGRAM

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	450'	17-1/2"	13-3/8"	54.5 #	K-55	STC	New
Intermediate	0'	9,015'	12-1/4"	9-5/8"	40.0 #	L-80	TXP	New
Production	0'	20,126'	8-1/2"	5-1/2"	20.0 #	P-110	TXP	New

SF Calculations based on the following "Worst Case" casing design:

Surface Casing: 450'

Intermediate Casing: 9015'

Production Casing: 20126.47' MD/9,563' TVD (10,000' VS @ 89.7 deg inc)

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	1.82	5.11	3.97	2.31
Intermediate	1.45	1.32	1.78	1.84
Production	1.26	1.5	2.43	1.35

Min SF is the smallest of a group of safety factors that include the following considerations:

	Surf	Int	Prod
Burst Design			
Pressure Test- Surface, Int, Prod Csg P external: Water P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Water P internal: Dry Gas from Next Csg Point	X		
Frac at Shoe, Gas to Surf- Int Csg P external: Water P internal: Dry Gas, 15 ppg Frac Gradient		X	
Stimulation (Frac) Pressures- Prod Csg P external: Water P internal: Max inj pressure w/ heaviest injected fluid			X
Tubing leak- Prod Csg (packer at KOP) P external: Water P internal: Leak just below surf, 8.7 ppg packer fluid			X
Collapse Design			
Full Evacuation P external: Water gradient in cement, mud above TOC P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: water	X	X	X
Tension Design			

100k lb overpull	X	X	X
------------------	---	---	---

ONSHORE ORDER NO. 1
Chevron
HayHurst SO 8 P 2 #5H
Eddy County, NM

CONFIDENTIAL -- TIGHT HOLE
DRILLING PLAN
PAGE: 3

5. CEMENTING PROGRAM

Slurry	Type	Cement Top	Cement Bottom	Weight	Yield	%Excess	Sacks	Water
Surface				(ppg)	(sx/cu ft)	Open Hole		gal/sk
Tail	Class C	0'	450'	14.8	1.33	50	356	6.37
Intermediate								
Stage 2 Lead	50:50 Poz: Class C + Antifoam, Extender, Salt, Retarder	0'	1,100'	11.9	2.43	50	213	14.21
Stage 2 Tail	Class C + Antifoam, Retarder, Viscosifier	1,100'	2,100'	14.8	1.33	0	235	6.37
DV TOOL		2,100'						
Stage 1 Lead	50:50 Poz: Class H + Extender, Antifoam, Retarder, Salt, Viscosifier	2,100'	8,015'	11.9	2.43	100	1524	13.76
Stage 1 Tail	Class H + Retarder, Extender, Dispersant	8,015'	9,015'	15.6	1.21	50	389	5.54
Production								
Lead	50:50 Poz: Class H + Extender, Antifoam, Dispersant, Retarder	7,015'	8,015'	14.5	1.21	100	430	5.54
Tail	Class H + Viscosifier, Antifoam, Dispersant, Fluid Loss, Retarder, Expanding Agent	8,015'	20,126'	15.6	1.2	50	3465	5.30

ONSHORE ORDER NO. 1
Chevron
HayHurst SO 8 P 2 #5H
Eddy County, NM

CONFIDENTIAL -- TIGHT HOLE
DRILLING PLAN
PAGE: 4

6. MUD PROGRAM

From	To	Type	Weight	F. Vis	Filtrate
0'	450'	Spud Mud	8.3 - 8.7	32 - 34	NC - NC
450'	9015'	OBM	9.0 - 9.5	50 - 70	5.0 - 10
9015'	20,126'	OBM	10.0 - 13.5	50 - 70	5.0 - 10

7. TESTING, LOGGING, AND CORING

TYPE	Logs	Interval	Timing	Vendor
Mudlogs	2 man mudlog	Int Csg to TD	Drillout of Int Csg	TBD
LWD	MWD Gamma	Int. and Prod. Hole	While Drilling	TBD

8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

PLEASE REFERENCE MDP



Chevron HH SO 8 P2 5H Rev0 CJG 12Jan16 Proposal Geodetic Report

(Non-Def Plan)

Report Date: January 12, 2016 - 01:21 PM
Client: Chevron
Field: NM Eddy County (NAD 27)
Structure / Slot: Chevron HH SO 8 P2 Pad / Chevron HH SO 8 P2 5H
Well: HH SO 8 P2 5H
Borehole: Original Borehole
UW / API#: Unknown / Unknown
Survey Name: Chevron HH SO 8 P2 5H Rev0 CJG 12Jan16
Survey Date: January 08, 2016
Tort / AHD / DDI / ERD Ratio: 102.483 ° / 11410.558 ft / 6.389 / 1.187
Coordinate Reference System: NAD27 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 2' 56.23357", W 104° 13' 2.26377"
Location Grid N/E Y/X: N 381554.000 RUS, E 535952.000 RUS
CRS Grid Convergence Angle: 0.0616 °
Grid Scale Factor: 0.99991057
Version / Patch: 2.8.572.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 356.431 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3278.000 ft above MSL
Seabed / Ground Elevation: 3245.000 ft above MSL
Magnetic Declination: 7.555 °
Total Gravity Field Strength: 998.4306mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48139.121 nT
Magnetic Dip Angle: 59.775 °
Declination Date: January 08, 2016
Magnetic Declination Model: HDGM 2015
North Reference: Grid North
Grid Convergence Used: 0.0616 °
Total Corr Mag North->Grid: 7.4939 °
North: Well Head
Local Coord Referenced To:

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	0.00	0.00	264.00	0.00	0.00	0.00	0.00	N/A	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	100.00	0.00	264.00	100.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	200.00	0.00	264.00	200.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	300.00	0.00	264.00	300.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	400.00	0.00	264.00	400.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	500.00	0.00	264.00	500.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	600.00	0.00	264.00	600.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	700.00	0.00	264.00	700.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	800.00	0.00	264.00	800.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	900.00	0.00	264.00	900.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	1000.00	0.00	264.00	1000.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	1100.00	0.00	264.00	1100.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	1200.00	0.00	264.00	1200.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	1300.00	0.00	264.00	1300.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	1400.00	0.00	264.00	1400.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	1500.00	0.00	264.00	1500.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	1600.00	0.00	264.00	1600.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	1700.00	0.00	264.00	1700.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	1800.00	0.00	264.00	1800.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	1900.00	0.00	264.00	1900.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	2000.00	0.00	264.00	2000.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	2100.00	0.00	264.00	2100.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	2200.00	0.00	264.00	2200.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
Build @ 2° DLS	2250.00	0.00	264.00	2250.00	0.00	0.00	0.00	0.00	381554.00	535952.00	N 32 2 56.23 W 104 13	2.26
	2300.00	1.00	264.00	2300.00	-0.02	-0.05	-0.43	2.00	381553.95	535951.57	N 32 2 56.23 W 104 13	2.27
	2400.00	3.00	264.00	2399.93	-0.17	-0.41	-3.90	2.00	381553.59	535948.10	N 32 2 56.23 W 104 13	2.31
	2500.00	5.00	264.00	2499.68	-0.46	-1.14	-10.84	2.00	381552.86	535941.16	N 32 2 56.22 W 104 13	2.39
	2550.00	6.00	264.00	2549.45	-0.67	-1.64	-15.61	2.00	381552.36	535936.39	N 32 2 56.22 W 104 13	2.45
	2600.00	6.00	264.00	2599.18	-0.89	-2.19	-20.81	0.00	381551.81	535931.20	N 32 2 56.21 W 104 13	2.51
	2700.00	6.00	264.00	2698.63	-1.33	-3.28	-31.20	0.00	381550.72	535920.80	N 32 2 56.20 W 104 13	2.63
	2800.00	6.00	264.00	2798.08	-1.77	-4.37	-41.60	0.00	381549.63	535910.41	N 32 2 56.19 W 104 13	2.75
	2900.00	6.00	264.00	2897.53	-2.22	-5.46	-51.99	0.00	381548.54	535900.01	N 32 2 56.18 W 104 13	2.87
	3000.00	6.00	264.00	2896.99	-2.66	-6.56	-62.39	0.00	381547.44	535889.62	N 32 2 56.17 W 104 13	2.99
	3100.00	6.00	264.00	3096.44	-3.10	-7.65	-72.78	0.00	381546.35	535879.22	N 32 2 56.16 W 104 13	3.11
	3200.00	6.00	264.00	3195.89	-3.55	-8.74	-83.18	0.00	381545.26	535868.83	N 32 2 56.15 W 104 13	3.23
	3300.00	6.00	264.00	3295.34	-3.99	-9.84	-93.57	0.00	381544.17	535858.43	N 32 2 56.14 W 104 13	3.35
	3400.00	6.00	264.00	3394.80	-4.43	-10.93	-103.97	0.00	381543.07	535848.04	N 32 2 56.13 W 104 13	3.47
	3500.00	6.00	264.00	3494.25	-4.88	-12.02	-114.37	0.00	381541.98	535837.64	N 32 2 56.12 W 104 13	3.59
	3600.00	6.00	264.00	3593.70	-5.32	-13.11	-124.76	0.00	381540.89	535827.25	N 32 2 56.11 W 104 13	3.71
	3700.00	6.00	264.00	3693.15	-5.76	-14.21	-135.16	0.00	381539.80	535816.86	N 32 2 56.09 W 104 13	3.83
	3800.00	6.00	264.00	3792.60	-6.21	-15.30	-145.55	0.00	381538.70	535806.46	N 32 2 56.08 W 104 13	3.96
	3900.00	6.00	264.00	3892.06	-6.65	-16.39	-155.95	0.00	381537.61	535796.07	N 32 2 56.07 W 104 13	4.08
	4000.00	6.00	264.00	3991.51	-7.09	-17.48	-166.34	0.00	381536.52	535785.67	N 32 2 56.06 W 104 13	4.20
	4100.00	6.00	264.00	4090.96	-7.54	-18.58	-176.74	0.00	381535.43	535775.28	N 32 2 56.05 W 104 13	4.32
	4200.00	6.00	264.00	4190.41	-7.98	-19.67	-187.13	0.00	381534.33	535764.88	N 32 2 56.04 W 104 13	4.44
	4300.00	6.00	264.00	4289.87	-8.42	-20.76	-197.53	0.00	381533.24	535754.49	N 32 2 56.03 W 104 13	4.56
	4400.00	6.00	264.00	4389.32	-8.87	-21.85	-207.93	0.00	381532.15	535744.09	N 32 2 56.02 W 104 13	4.68
	4500.00	6.00	264.00	4488.77	-9.31	-22.95	-218.32	0.00	381531.06	535733.70	N 32 2 56.01 W 104 13	4.80
	4600.00	6.00	264.00	4588.22	-9.75	-24.04	-228.72	0.00	381529.96	535723.30	N 32 2 56.00 W 104 13	4.92
	4700.00	6.00	264.00	4687.67	-10.20	-25.13	-239.11	0.00	381528.87	535712.91	N 32 2 55.99 W 104 13	5.04
	4800.00	6.00	264.00	4787.13	-10.64	-26.22	-249.51	0.00	381527.78	535702.51	N 32 2 55.98 W 104 13	5.16
	4900.00	6.00	264.00	4886.58	-11.08	-27.32	-259.90	0.00	381526.69	535692.12	N 32 2 55.97 W 104 13	5.28
	5000.00	6.00	264.00	4986.03	-11.53	-28.41	-270.30	0.00	381525.59	535681.73	N 32 2 55.96 W 104 13	5.40
	5100.00	6.00	264.00	5085.48	-11.97	-29.50	-280.70	0.00	381524.50	535671.33	N 32 2 55.94 W 104 13	5.53
	5200.00	6.00	264.00	5184.94	-12.41	-30.59	-291.09	0.00	381523.41	535660.94	N 32 2 55.93 W 104 13	5.65
	5300.00	6.00	264.00	5284.39	-12.86	-31.69	-301.49	0.00	381522.32	535650.54	N 32 2 55.92 W 104 13	5.77
	5400.00	6.00	264.00	5383.84	-13.30	-32.78	-311.88	0.00	381521.22	535640.15	N 32 2 55.91 W 104 13	5.89
	5500.00	6.00	264.00	5483.29	-13.74	-33.87	-322.28	0.00	381520.13	535629.75	N 32 2 55.90 W 104 13	6.01
	5600.00	6.00	264.00	5582.74	-14.19	-34.97	-332.67	0.00	381519.04	535619.36	N 32 2 55.89 W 104 13	6.13
	5700.00	6.00	264.00	5682.20	-14.63	-36.06	-343.07	0.00	381517.95	535608.96	N 32 2 55.88 W 104 13	6.25
	5800.00	6.00	264.00	5781.65	-15.07	-37.15	-353.46	0.00	381516.85	535598.57	N 32 2 55.87 W 104 13	6.37
	5900.00	6.00	264.00	5881.10	-15.52	-38.24	-363.86	0.00	381515.76	535588.17	N 32 2 55.86 W 104 13	6.49
	6000.00	6.00	264.00	5980.55	-15.96	-39.34	-374.26	0.00	381514.67	535577.78	N 32 2 55.85 W 104 13	6.61
	6100.00	6.00	264.00	6080.00	-16.40	-40.43	-384.65	0.00	381513.58	535567.38	N 32 2 55.84 W 104 13	6.73
	6200.00	6.00	264.00	6179.46	-16.85	-41.52	-395.05	0.00	381512.48	535556.99	N 32 2 55.83 W 104 13	6.85

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 ° ' ")
	6300.00	6.00	264.00	6278.91	-17.29	-42.61	-405.44	0.00	381511.39	535546.60	N 32 2 55.82 W 104 13	6.97
	6400.00	6.00	264.00	6378.36	-17.73	-43.71	-415.84	0.00	381510.30	535536.20	N 32 2 55.81 W 104 13	7.10
	6500.00	6.00	264.00	6477.81	-18.18	-44.80	-426.23	0.00	381509.21	535525.81	N 32 2 55.79 W 104 13	7.22
	6600.00	6.00	264.00	6577.27	-18.62	-45.89	-436.63	0.00	381508.11	535515.41	N 32 2 55.78 W 104 13	7.34
	6700.00	6.00	264.00	6676.72	-19.06	-46.98	-447.02	0.00	381507.02	535505.02	N 32 2 55.77 W 104 13	7.46
	6800.00	6.00	264.00	6776.17	-19.51	-48.08	-457.42	0.00	381505.93	535494.62	N 32 2 55.76 W 104 13	7.58
	6900.00	6.00	264.00	6875.62	-19.95	-49.17	-467.82	0.00	381504.84	535484.23	N 32 2 55.75 W 104 13	7.70
	7000.00	6.00	264.00	6975.07	-20.39	-50.26	-478.21	0.00	381503.74	535473.83	N 32 2 55.74 W 104 13	7.82
	7100.00	6.00	264.00	7074.53	-20.84	-51.35	-488.61	0.00	381502.65	535463.44	N 32 2 55.73 W 104 13	7.94
	7200.00	6.00	264.00	7173.98	-21.28	-52.45	-499.00	0.00	381501.56	535453.04	N 32 2 55.72 W 104 13	8.06
	7300.00	6.00	264.00	7273.43	-21.72	-53.54	-509.40	0.00	381500.47	535442.65	N 32 2 55.71 W 104 13	8.18
	7400.00	6.00	264.00	7372.88	-22.17	-54.63	-519.79	0.00	381499.37	535432.25	N 32 2 55.70 W 104 13	8.30
	7500.00	6.00	264.00	7472.34	-22.61	-55.73	-530.19	0.00	381498.28	535421.86	N 32 2 55.69 W 104 13	8.42
	7600.00	6.00	264.00	7571.79	-23.05	-56.82	-540.58	0.00	381497.19	535411.46	N 32 2 55.68 W 104 13	8.55
	7700.00	6.00	264.00	7671.24	-23.50	-57.91	-550.98	0.00	381496.09	535401.07	N 32 2 55.67 W 104 13	8.67
	7800.00	6.00	264.00	7770.69	-23.94	-59.00	-561.38	0.00	381495.00	535390.68	N 32 2 55.66 W 104 13	8.79
	7900.00	6.00	264.00	7870.14	-24.38	-60.10	-571.77	0.00	381493.91	535380.28	N 32 2 55.64 W 104 13	8.91
	8000.00	6.00	264.00	7969.60	-24.83	-61.19	-582.17	0.00	381492.82	535369.89	N 32 2 55.63 W 104 13	9.03
	8100.00	6.00	264.00	8069.05	-25.27	-62.28	-592.56	0.00	381491.72	535359.49	N 32 2 55.62 W 104 13	9.15
	8200.00	6.00	264.00	8168.50	-25.71	-63.37	-602.96	0.00	381490.63	535349.10	N 32 2 55.61 W 104 13	9.27
Drop @ 2° DLS	8300.00	6.00	264.00	8267.95	-26.16	-64.47	-613.35	0.00	381489.54	535338.70	N 32 2 55.60 W 104 13	9.39
	8315.00	6.00	264.00	8282.87	-26.22	-64.63	-614.91	0.00	381489.38	535337.14	N 32 2 55.60 W 104 13	9.41
	8400.00	4.30	264.00	8367.52	-26.55	-65.43	-622.50	2.00	381488.58	535329.56	N 32 2 55.59 W 104 13	9.50
	8500.00	2.30	264.00	8467.35	-26.79	-66.03	-628.23	2.00	381487.98	535323.83	N 32 2 55.59 W 104 13	9.56
	8600.00	0.30	264.00	8567.32	-26.89	-66.27	-630.48	2.00	381487.74	535321.58	N 32 2 55.58 W 104 13	9.59
Hold to KOP	8615.00	0.00	264.00	8582.32	-26.89	-66.27	-630.52	2.00	381487.74	535321.54	N 32 2 55.58 W 104 13	9.59
	8700.00	0.00	264.00	8667.32	-26.89	-66.27	-630.52	0.00	381487.74	535321.54	N 32 2 55.58 W 104 13	9.59
	8800.00	0.00	264.00	8767.32	-26.89	-66.27	-630.52	0.00	381487.74	535321.54	N 32 2 55.58 W 104 13	9.59
	8900.00	0.00	264.00	8867.32	-26.89	-66.27	-630.52	0.00	381487.74	535321.54	N 32 2 55.58 W 104 13	9.59
	9000.00	0.00	264.00	8967.32	-26.89	-66.27	-630.52	0.00	381487.74	535321.54	N 32 2 55.58 W 104 13	9.59
Build @ 10° DLS	9022.73	0.00	264.00	8990.05	-26.89	-66.27	-630.52	0.00	381487.74	535321.54	N 32 2 55.58 W 104 13	9.59
	9100.00	7.73	359.43	9067.09	-21.69	-61.07	-630.52	10.00	381492.94	535321.49	N 32 2 55.64 W 104 13	9.59
	9200.00	17.73	359.43	9164.51	0.28	-39.07	-630.79	10.00	381514.94	535321.27	N 32 2 55.85 W 104 13	9.59
	9300.00	27.73	359.43	9256.63	38.61	-0.48	-631.17	10.00	381553.52	535320.88	N 32 2 56.24 W 104 13	9.60
	9400.00	37.73	359.43	9340.64	92.73	53.51	-631.71	10.00	381607.51	535320.35	N 32 2 56.77 W 104 13	9.60
	9500.00	47.73	359.43	9414.01	160.41	121.27	-632.38	10.00	381675.26	535319.67	N 32 2 57.44 W 104 13	9.61
	9600.00	57.73	359.43	9474.50	239.77	200.74	-633.17	10.00	381754.73	535318.88	N 32 2 58.23 W 104 13	9.62
	9700.00	67.73	359.43	9520.26	328.42	289.51	-634.06	10.00	381843.48	535318.00	N 32 2 59.11 W 104 13	9.63
	9800.00	77.73	359.43	9549.91	423.66	384.87	-635.00	10.00	381938.84	535317.05	N 32 3 0.05 W 104 13	9.64
	9900.00	87.73	359.43	9562.56	522.59	483.94	-635.99	10.00	382037.89	535316.07	N 32 3 1.03 W 104 13	9.65
Landing Point	9919.73	89.70	359.43	9563.00	542.29	503.66	-636.18	10.00	382057.62	535315.87	N 32 3 1.22 W 104 13	9.65
	10000.00	89.70	359.43	9563.42	622.45	583.93	-636.98	0.00	382137.87	535315.08	N 32 3 2.02 W 104 13	9.66
	10100.00	89.70	359.43	9563.94	722.31	683.92	-637.98	0.00	382237.86	535314.08	N 32 3 3.01 W 104 13	9.67
	10200.00	89.70	359.43	9564.47	822.17	783.91	-638.97	0.00	382337.84	535313.09	N 32 3 4.00 W 104 13	9.68
	10300.00	89.70	359.43	9564.99	922.04	883.91	-639.96	0.00	382437.83	535312.10	N 32 3 4.99 W 104 13	9.69
	10400.00	89.70	359.43	9565.51	1021.90	983.90	-640.96	0.00	382537.81	535311.10	N 32 3 5.98 W 104 13	9.70
	10500.00	89.70	359.43	9566.04	1121.76	1083.90	-641.95	0.00	382637.80	535310.11	N 32 3 6.97 W 104 13	9.71
	10600.00	89.70	359.43	9566.56	1221.62	1183.89	-642.94	0.00	382737.78	535309.11	N 32 3 7.96 W 104 13	9.72
	10700.00	89.70	359.43	9567.08	1321.48	1283.88	-643.94	0.00	382837.77	535308.12	N 32 3 8.95 W 104 13	9.73
	10800.00	89.70	359.43	9567.60	1421.34	1383.88	-644.93	0.00	382937.75	535307.13	N 32 3 9.93 W 104 13	9.74
	10900.00	89.70	359.43	9568.13	1521.20	1483.87	-645.93	0.00	383037.73	535306.13	N 32 3 10.92 W 104 13	9.75
	11000.00	89.70	359.43	9568.65	1621.07	1583.86	-646.92	0.00	383137.72	535305.14	N 32 3 11.91 W 104 13	9.76
	11100.00	89.70	359.43	9569.17	1720.93	1683.86	-647.91	0.00	383237.70	535304.15	N 32 3 12.90 W 104 13	9.77
	11200.00	89.70	359.43	9569.70	1820.79	1783.85	-648.91	0.00	383337.69	535303.15	N 32 3 13.89 W 104 13	9.78
	11300.00	89.70	359.43	9570.22	1920.65	1883.84	-649.90	0.00	383437.67	535302.16	N 32 3 14.88 W 104 13	9.79
	11400.00	89.70	359.43	9570.74	2020.51	1983.84	-650.89	0.00	383537.66	535301.17	N 32 3 15.87 W 104 13	9.80
	11500.00	89.70	359.43	9571.27	2120.37	2083.83	-651.89	0.00	383637.64	535300.17	N 32 3 16.86 W 104 13	9.81
	11600.00	89.70	359.43	9571.79	2220.24	2183.83	-652.88	0.00	383737.63	535299.18	N 32 3 17.85 W 104 13	9.82
	11700.00	89.70	359.43	9572.31	2320.10	2283.82	-653.87	0.00	383837.61	535298.19	N 32 3 18.84 W 104 13	9.83
	11800.00	89.70	359.43	9572.84	2419.96	2383.81	-654.87	0.00	383937.60	535297.19	N 32 3 19.83 W 104 13	9.84
	11900.00	89.70	359.43	9573.36	2519.82	2483.81	-655.86	0.00	384037.58	535296.20	N 32 3 20.82 W 104 13	9.85
	12000.00	89.70	359.43	9573.88	2619.68	2583.80	-656.86	0.00	384137.56	535295.20	N 32 3 21.81 W 104 13	9.86
	12100.00	89.70	359.43	9574.41	2719.54	2683.79	-657.85	0.00	384237.55	535294.21	N 32 3 22.80 W 104 13	9.87
	12200.00	89.70	359.43	9574.93	2819.41	2783.79	-658.84	0.00	384337.53	535293.22	N 32 3 23.79 W 104 13	9.88
	12300.00	89.70	359.43	9575.45	2919.27	2883.78	-659.84	0.00	384437.52	535292.22	N 32 3 24.78 W 104 13	9.89
	12400.00	89.70	359.43	9575.97	3019.13	2983.78	-660.83	0.00	384537.50	535291.23	N 32 3 25.77 W 104 13	9.90
	12500.00	89.70	359.43	9576.50	3118.99	3083.77	-661.82	0.00	384637.49	535290.24	N 32 3 26.76 W 104 13	9.92
	12600.00	89.70	359.43	9577.02	3218.85	3183.76	-662.82	0.00	384737.47	535289.24	N 32 3 27.75 W 104 13	9.93
	12700.00	89.70	359.43	9577.54	3318.71	3283.76	-663.81	0.00	384837.46	535288.25	N 32 3 28.74 W 104 13	9.94
	12800.00	89.70	359.43	9578.07	3418.57	3383.75	-664.81	0.00	384937.44	535287.26	N 32 3 29.73 W 104 13	9.95
	12900.00	89.70	359.43	9578.59	3518.44	3483.74	-665.80	0.00	385037.43	535286.26	N 32 3 30.71 W 104 13	9.96
	13000.00	89.70	359.43	9579.11	3618.30	3583.74	-666.79	0.00	385137.41	535285.27	N 32 3 31.70 W 104 13	9.97
	13100.00	89.70	359.43	9579.64	3718.16	3683.73	-667.79	0.00	385237.39	535284.27	N 32 3 32.69 W 104 13	9.98
	13200.00	89.70	359.43	9580.16	3818.02	3783.73	-668.78	0.00	385337.38	535283.28	N 32 3 33.68 W 104 13	9.99
	13300.00	89.70	359.43	9580.68	3917.88	3883.72	-669.77	0.00	385437.36	535282.29	N 32 3 34.67 W 104 13	10.00
	13400.00	89.70	359.43	9581.21	4017.74	3983.71	-670.77	0.00	385537.35	535281.29	N 32 3 35.66 W 104 13	10.01
	13500.00	89.70	359.43	9581.73	4117.61	4083.71	-671.76	0.00	385637.33	535280.30	N 32 3 36.65 W 104 13	10.

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 ° ' '')
Chevron HH SO 8 P2 5H - MidPoint Hold to TD	14700.00	89.70	359.43	9588.01	5315.95	5283.63	-683.69	0.00	386837.15	535268.38	N 32 3 48.53	W 104 13 10.14
	14800.00	89.70	359.43	9588.53	5415.81	5383.62	-684.68	0.00	386937.13	535267.38	N 32 3 49.52	W 104 13 10.15
	14900.00	89.70	359.43	9589.05	5515.67	5483.62	-685.67	0.00	387037.12	535266.39	N 32 3 50.51	W 104 13 10.16
	15000.00	89.70	359.43	9589.58	5615.53	5583.61	-686.67	0.00	387137.10	535265.40	N 32 3 51.49	W 104 13 10.17
	15004.67	89.70	359.43	9589.60	5620.19	5588.28	-686.71	0.00	387141.77	535265.35	N 32 3 51.54	W 104 13 10.17
	15043.72	89.70	0.21	9589.80	5659.17	5627.33	-686.83	2.00	387180.81	535265.23	N 32 3 51.93	W 104 13 10.17
	15100.00	89.70	0.21	9590.10	5715.33	5683.61	-686.63	0.00	387237.09	535265.44	N 32 3 52.48	W 104 13 10.17
	15200.00	89.70	0.21	9590.62	5815.11	5783.61	-686.26	0.00	387337.08	535265.81	N 32 3 53.47	W 104 13 10.17
	15300.00	89.70	0.21	9591.15	5914.89	5883.61	-685.89	0.00	387437.07	535266.17	N 32 3 54.46	W 104 13 10.16
	15400.00	89.70	0.21	9591.67	6014.67	5983.60	-685.52	0.00	387537.06	535266.54	N 32 3 55.45	W 104 13 10.15
	15500.00	89.70	0.21	9592.19	6114.45	6083.60	-685.15	0.00	387637.04	535266.91	N 32 3 56.44	W 104 13 10.15
	15600.00	89.70	0.21	9592.72	6214.24	6183.60	-684.78	0.00	387737.03	535267.28	N 32 3 57.43	W 104 13 10.14
	15700.00	89.70	0.21	9593.24	6314.02	6283.60	-684.41	0.00	387837.02	535267.65	N 32 3 58.42	W 104 13 10.14
	15800.00	89.70	0.21	9593.76	6413.80	6383.59	-684.04	0.00	387937.01	535268.02	N 32 3 59.41	W 104 13 10.13
	15900.00	89.70	0.21	9594.29	6513.58	6483.59	-683.67	0.00	388037.00	535268.39	N 32 4 0.40	W 104 13 10.13
	16000.00	89.70	0.21	9594.81	6613.36	6583.59	-683.30	0.00	388136.99	535268.76	N 32 4 1.39	W 104 13 10.12
	16100.00	89.70	0.21	9595.33	6713.14	6683.59	-682.93	0.00	388236.98	535269.13	N 32 4 2.38	W 104 13 10.12
	16200.00	89.70	0.21	9595.86	6812.92	6783.59	-682.56	0.00	388336.97	535269.50	N 32 4 3.37	W 104 13 10.11
	16300.00	89.70	0.21	9596.38	6912.70	6883.58	-682.19	0.00	388436.96	535269.87	N 32 4 4.36	W 104 13 10.11
	16400.00	89.70	0.21	9596.90	7012.48	6983.58	-681.83	0.00	388536.94	535270.24	N 32 4 5.35	W 104 13 10.10
	16500.00	89.70	0.21	9597.42	7112.26	7083.58	-681.46	0.00	388636.93	535270.61	N 32 4 6.34	W 104 13 10.09
	16600.00	89.70	0.21	9597.95	7212.05	7183.58	-681.09	0.00	388736.92	535270.98	N 32 4 7.33	W 104 13 10.09
	16700.00	89.70	0.21	9598.47	7311.83	7283.58	-680.72	0.00	388836.91	535271.35	N 32 4 8.32	W 104 13 10.08
	16800.00	89.70	0.21	9598.99	7411.61	7383.57	-680.35	0.00	388936.90	535271.71	N 32 4 9.31	W 104 13 10.08
	16900.00	89.70	0.21	9599.51	7511.39	7483.57	-679.98	0.00	389036.89	535272.08	N 32 4 10.30	W 104 13 10.07
	17000.00	89.70	0.21	9600.04	7611.17	7583.57	-679.61	0.00	389136.88	535272.45	N 32 4 11.29	W 104 13 10.07
	17100.00	89.70	0.21	9600.56	7710.95	7683.57	-679.24	0.00	389236.87	535272.82	N 32 4 12.28	W 104 13 10.06
	17200.00	89.70	0.21	9601.08	7810.73	7783.57	-678.87	0.00	389336.85	535273.19	N 32 4 13.26	W 104 13 10.06
	17300.00	89.70	0.21	9601.60	7910.51	7883.56	-678.50	0.00	389436.84	535273.56	N 32 4 14.25	W 104 13 10.05
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	17500.00	89.70	0.21	9602.65	8110.07	8083.56	-677.76	0.00	389636.82	535274.30	N 32 4 16.23	W 104 13 10.04
	17600.00	89.70	0.21	9603.17	8209.86	8183.56	-677.39	0.00	389736.81	535274.67	N 32 4 17.22	W 104 13 10.03
	17700.00	89.70	0.21	9603.69	8309.64	8283.56	-677.02	0.00	389836.80	535275.04	N 32 4 18.21	W 104 13 10.03
	17800.00	89.70	0.21	9604.22	8409.42	8383.55	-676.65	0.00	389936.79	535275.41	N 32 4 19.20	W 104 13 10.02
	17900.00	89.70	0.21	9604.74	8509.20	8483.55	-676.28	0.00	390036.78	535275.78	N 32 4 20.19	W 104 13 10.02
	18000.00	89.70	0.21	9605.26	8608.98	8583.55	-675.92	0.00	390136.76	535276.15	N 32 4 21.18	W 104 13 10.01
	18100.00	89.70	0.21	9605.78	8708.76	8683.55	-675.55	0.00	390236.75	535276.52	N 32 4 22.17	W 104 13 10.01
	18200.00	89.70	0.21	9606.30	8808.54	8783.55	-675.18	0.00	390336.74	535276.89	N 32 4 23.16	W 104 13 10.00
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	18400.00	89.70	0.21	9607.35	9008.10	8983.54	-674.44	0.00	390536.72	535277.62	N 32 4 25.14	W 104 13 9.99
	18500.00	89.70	0.21	9607.87	9107.88	9083.54	-674.07	0.00	390636.71	535277.99	N 32 4 26.13	W 104 13 9.98
	18600.00	89.70	0.21	9608.39	9207.67	9183.54	-673.70	0.00	390736.70	535278.36	N 32 4 27.12	W 104 13 9.98
	18700.00	89.70	0.21	9608.91	9307.45	9283.54	-673.33	0.00	390836.69	535278.73	N 32 4 28.11	W 104 13 9.97
	18800.00	89.70	0.21	9609.44	9407.23	9383.53	-672.96	0.00	390936.68	535279.10	N 32 4 29.10	W 104 13 9.97
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	19200.00	89.70	0.21	9611.52	9806.35	9783.53	-671.48	0.00	391336.63	535280.58	N 32 4 33.06	W 104 13 9.95
	19300.00	89.70	0.21	9612.04	9906.13	9883.52	-671.11	0.00	391436.62	535280.95	N 32 4 34.05	W 104 13 9.94
	19400.00	89.70	0.21	9612.56	10005.91	9983.52	-670.74	0.00	391536.61	535281.32	N 32 4 35.03	W 104 13 9.93
	19500.00	89.70	0.21	9613.09	10105.69	10083.52	-670.38	0.00	391636.60	535281.69	N 32 4 36.02	W 104 13 9.93
	19600.00	89.70	0.21	9613.61	10205.48	10183.52	-670.01	0.00	391736.59	535282.06	N 32 4 37.01	W 104 13 9.92
	19700.00	89.70	0.21	9614.13	10305.26	10283.52	-669.64	0.00	391836.57	535282.42	N 32 4 38.00	W 104 13 9.92
	19800.00	89.70	0.21	9614.65	10405.04	10383.51	-669.27	0.00	391936.56	535282.79	N 32 4 38.99	W 104 13 9.91
	19900.00	89.70	0.21	9615.17	10504.82	10483.51	-668.90	0.00	392036.55	535283.16	N 32 4 39.98	W 104 13 9.91
	20000.00	89.70	0.21	9615.69	10604.60	10583.51	-668.53	0.00	392136.54	535283.53	N 32 4 40.97	W 104 13 9.90
	20100.00	89.70	0.21	9616.21	10704.38	10683.51	-668.16	0.00	392236.53	535283.90	N 32 4 41.96	W 104 13 9.90
Chevron HH SO 8 P2 5H - PBHL	20126.47	89.70	0.21	9616.35	10730.79	10709.98	-668.06	0.00	392263.00	535284.00	N 32 4 42.22	W 104 13 9.89

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	33.000	1/100.000	30.000	30.000	SLB_MWD-STD-Depth Only	Original Borehole / Chevron HH SO 8 P2 5H Rev0 CJG 12Jan16
	1	33.000	20126.473	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Chevron HH SO 8 P2 5H Rev0 CJG 12Jan16

Generic Hayhurst Development Pad Layout - Phase 1

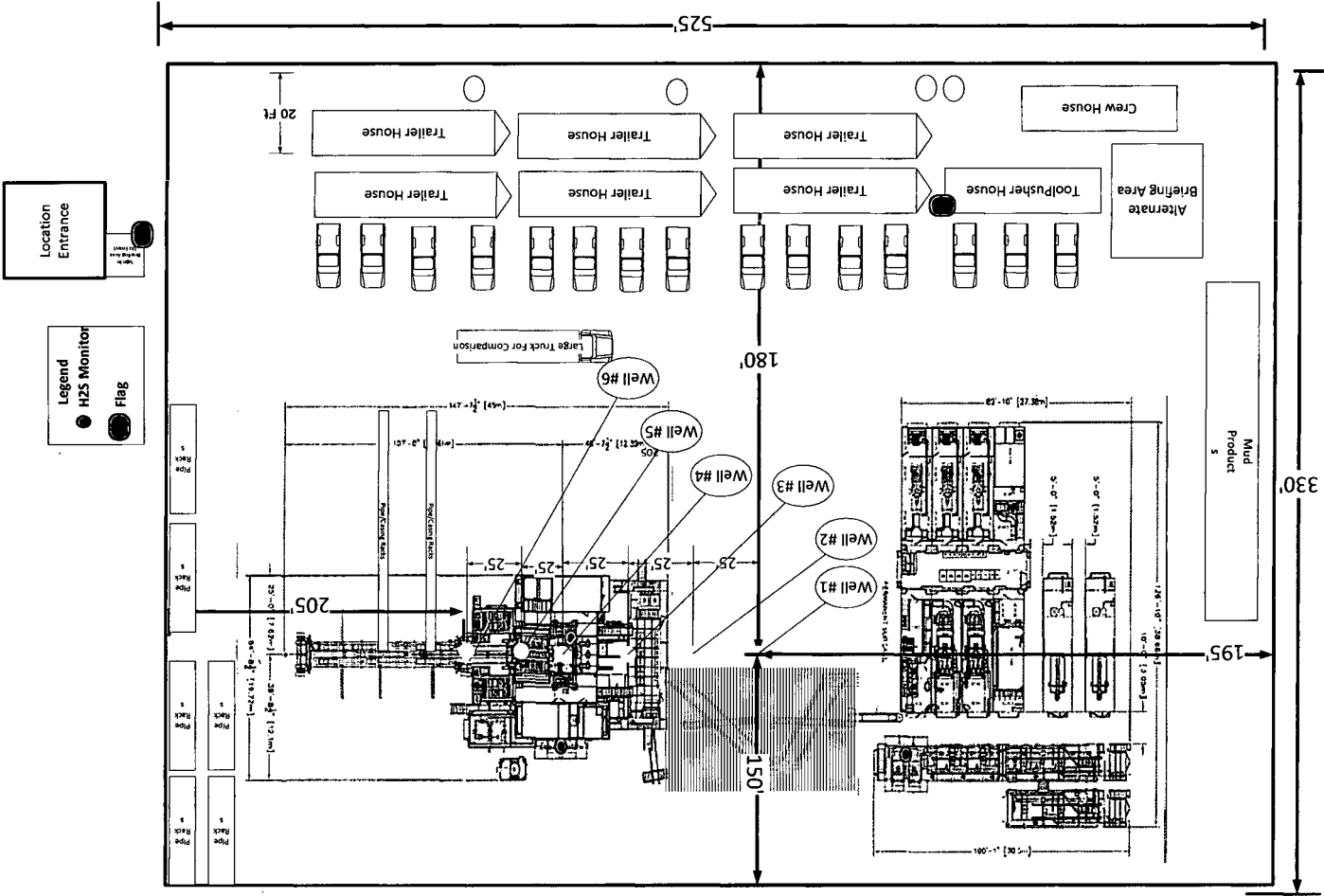
- H2S Monitor Locations

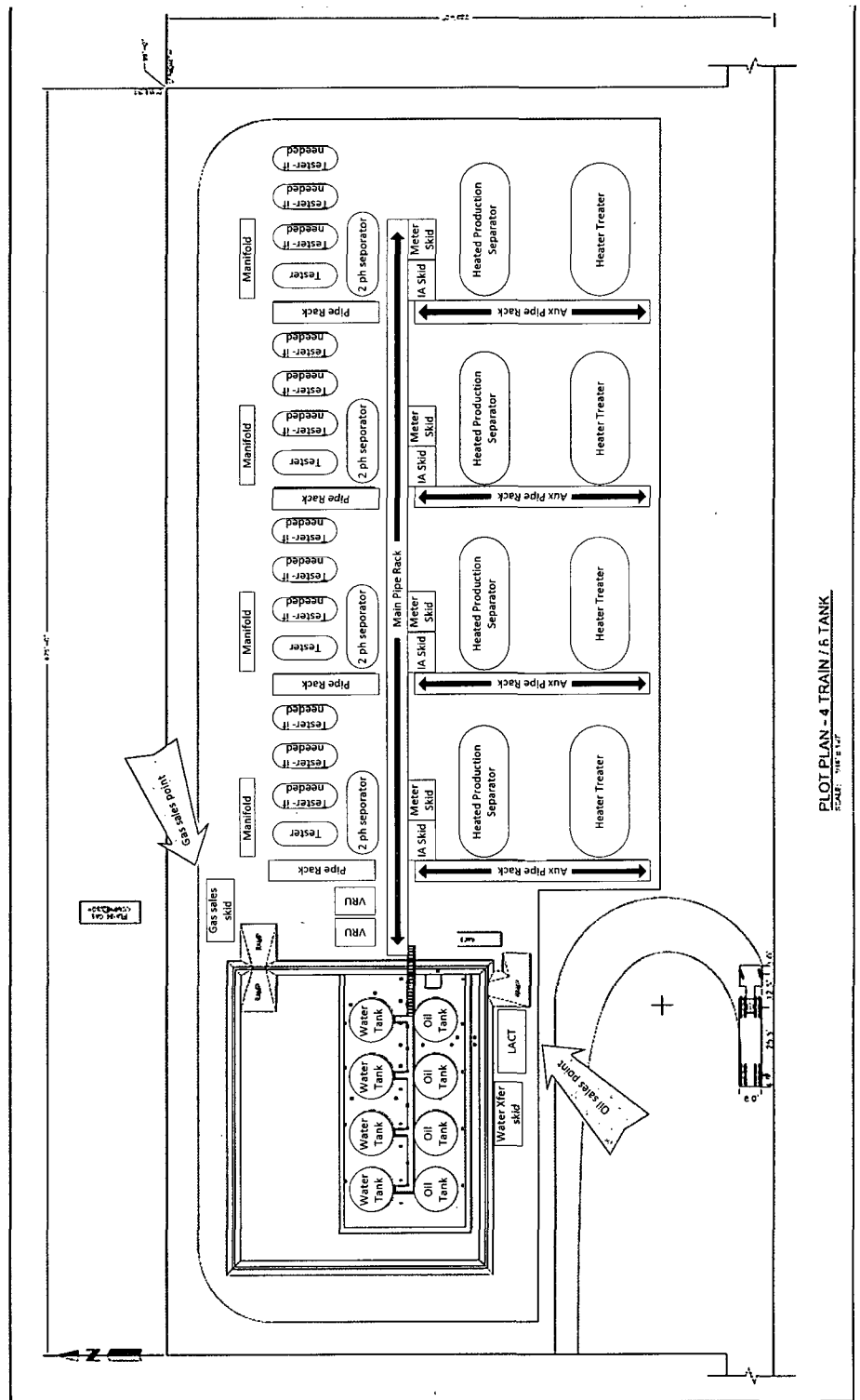
 - Bop/Collar
 - Rig Floor
 - Shaker Skid
 - Bell Nipple
- Flag Locations

 - Sign-In Shack
 - Rig Floor
 - Dog House
- 10 Minute Escape Packs

 - 1 at Rig
 - 1 at Trip Tank
 - 1 at Accumulator
 - 4 at Rig Floor
- 45 Minute Escape Packs

 - 2 at Briefing Area
 - 2 at Alternate Briefing Area

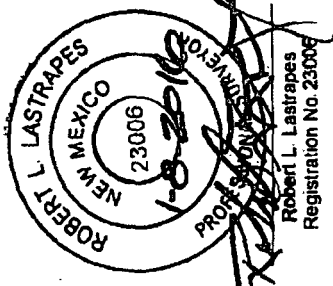




PLOT PLAN - 4 TRAIN / 5 TANK
SCALE: 1" = 10'

R 27 E

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Robert L. Lastrapes, Registered Professional
Land Surveyor, do hereby state this plat is true
and correct to the best of my knowledge



Sec. 8

Bureau of Land Management

EROSION CONTROL
(STRAW WATTLES)

S 88°52'10" E 810.78'

Fnd. 2" Iron Pipe w/ Cap
at the NW Corner of
Section 17

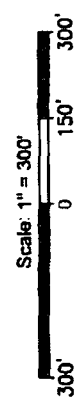
HH SO 8 P2
No. 5H Well
255' FNL, 960' FWL

PROPOSED
PAD
±3.98 Acres

Sec. 17

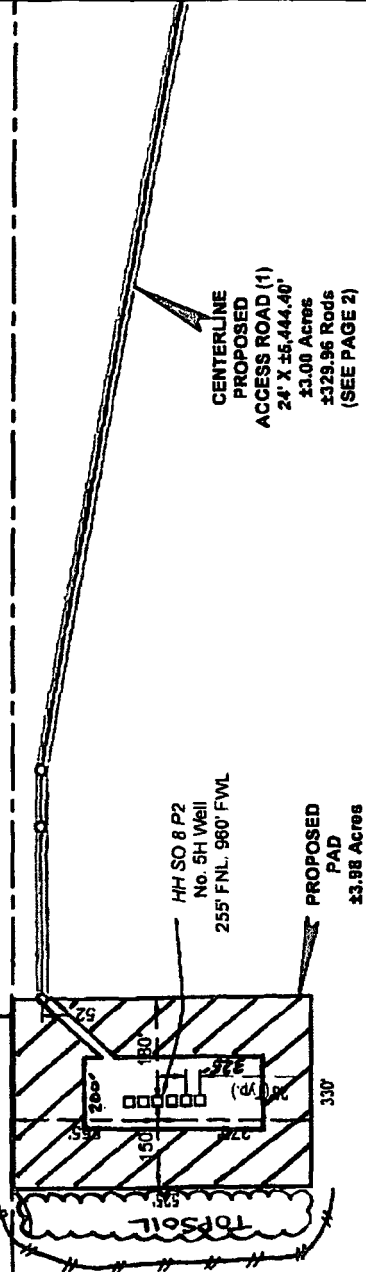
Bureau of Land Management

(Access Road 1) ± 4289 90' ±2.36 Acres ±259.99 Rods



C H Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com

NW PAD CORNER		NE PAD CORNER		HH SO 8 P2 NO. 5H WELL	
X=	535,799 NAD 27	X=	535,129 NAD 27	X=	535,952 NAD 27
Y=	381,809	Y=	381,808	Y=	381,554
ELEVATION +3241' NAVD 88		ELEVATION +3247' NAVD 88		LAT. 32.048953	
SW PAD CORNER		SE PAD CORNER		LONG. 104.217295	
X=	535,805 NAD 27	X=	536,135 NAD 27	X=	577,138 NAD83
Y=	381,284	Y=	381,284	Y=	381,611
ELEVATION +3244' NAVD 88		ELEVATION +3256' NAVD 88		LAT. 32.048075	
				LONG. 104.217769	
				ELEVATION +3245' NAVD 88	



INTERIM RECLAMATION

SURFACE USE PLAT

CHEVRON U.S.A. INC.

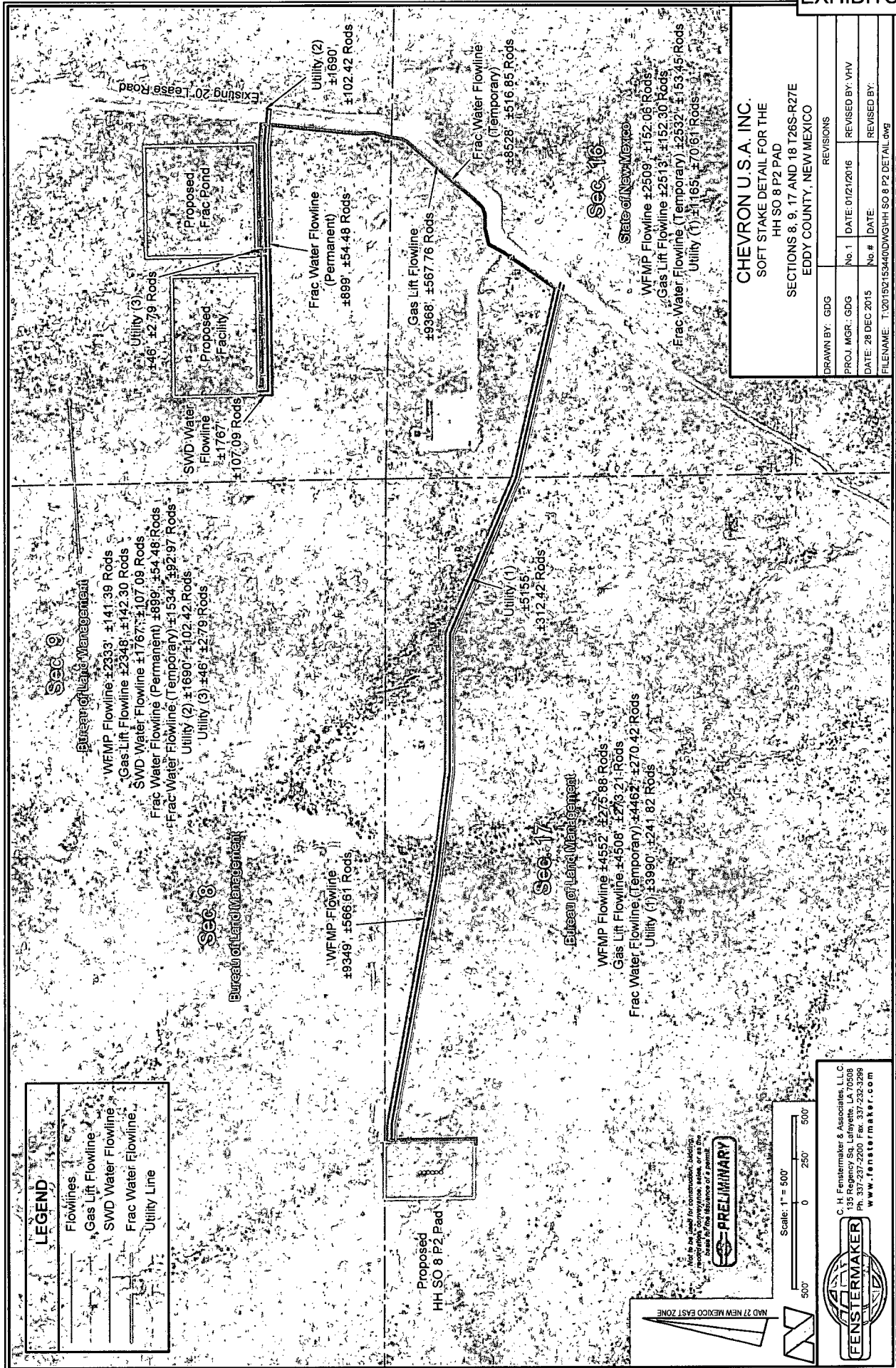
PROPOSED PADS, FRAC POND & ACCESS ROADS

HH SO 8 P2

SECTIONS 9, 16 & 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

PAGE 1 OF 3

DRAWN BY: LIG		REVISIONS	
PROJ. MGR.: GDG	No. 1	DATE: 1/7/2016	REVISED BY: MBD
DATE: 12/22/2015	No.	DATE:	REVISED BY:
FILENAME: T:\2015\2153438\DWG\HH SO 8 P2 5H_SUP.dwg			



CHEVRON U.S.A. INC.

SOFT STAKE DETAIL FOR THE
HH SO 8 P2 PAD

SECTIONS 8, 9, 17 AND 18 T2S-R27E
EDDY COUNTY, NEW MEXICO

DRAWN BY: GDG		REVISIONS	
PROJ. MGR.: GDG	No. 1	DATE: 01/21/2016	REVISOR: VHV
DATE: 28 DEC 2015	No. #	DATE:	REVISOR BY:
FILENAME: T:\2015\153440\DWG\HH SO 8 P2 DETAIL.dwg			

C. H. Fenstermaker & Associates, L.L.C.
133 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com



CHEVRON U.S.A. Inc

HH SO 8 P2 5H

NMNM 118108

SECTION 17, T26S-R27E (Off Lease SHL) SECTION 5, T26S, R27E

SHL 255' FNL & 960' FWL BHL 180' FNL & 330' FWL

APD Surface Use Plan of Operations

This Surface Use Plan of Operations has been designed to be reviewed in conjunction with Hayhurst Development Area (HDA) Master Development Plan

HDA Master Development Plan Reference Table

The contents referenced below apply to all HDA APD's

Existing Roads	Exhibit 1, MDP SUPO Page 1
Construction Materials	MDP SUPO Page 6
Methods for Handling Waste	MDP SUPO Page 6
Reclamation Objectives	MDP SUPO Page 6-8
Final Surface Reclamation	MDP SUPO Page 6-8

Driving Directions

- Driving Directions – From Malaga, New Mexico. The location is approximately 11.5 miles from the nearest town, which is Malaga, New Mexico. From Malaga, proceed South on Highway 285 approximately 11.5 miles and turn right (West) onto White City Rd and go approximately 7.5 miles on White City Road until the road reaches an intersection with a permanent sign reading “Chevron Access”. Turn left onto this and travel 1 mile, then right and travel for another .5 miles to the well location.

New or Reconstructed Access Roads – (Exhibit 2, MDP SUPO Pg. 1)

- There will be 7172' of new road construction for this proposal.
- Ditches: See Exhibit 2 (To be submitted at later date)
- Culverts: See Exhibit 2 (To be submitted at later date)
- Road Cuts: See Exhibit 2 (To be submitted at later date)

Location of Existing Wells (Exhibit 3)

- 1-Mile radius map is attached

CHEVRON U.S.A. Inc

HH SO 8 P2 5H

NMNM 118108

SECTION 17, T26S-R27E (Off Lease SHL) SECTION 5, T26S, R27E
SHL 255' FNL & 960' FWL BHL 180' FNL & 330' FWL

Location of Existing and/or Proposed Production Facilities (Exhibit 4, MDP SUP Pg. 2)

- Facilities: Proposed production facilities located in the SW corner of Sec. 9, T26S-R27E where oil and gas sales will take place.
 - The proposed facility and frac pond is in Sec. 9, T26S-R27E
 - Gas purchaser pipeline is in place at the tank battery.
 - Open top tanks or open containments will be netted.
 - Open vent exhaust stacks will be modified to prevent birds or bats from entering, discourage perching, roosting, and nesting.
 - Facilities will have a secondary containment 1.5 times the holding capacity of largest storage tank.
 - All above ground structures will be painted non-reflective shale green for blending with surrounding environment.
 - The permanent water disposal system will be determined prior to construction of any water transfer pipeline. Until permanent water takeaway is available, produced water will be hauled off location in trucks.

Notification will be provided to BLM upon site selection and survey – plats (including SWD well information) will be provided.
- Pipelines: See Detail – Exhibit 5
 - Pipelines Include:
 - 9,349' of Flowlines carrying production (buried)
 - 9,368' Gas Lift Line carrying pressurized gas (buried)
 - 1,767' SWD Line carrying produced water (buried)
 - 899' Permanent Frac water line carrying fresh water (buried)
 - 8528' Temporary Water line carrying fresh water (surface)
 - A ROW will be applied for through the State and BLM.
 - All construction activity will be confined to the approved ROW.
 - Pipeline will run parallel to the road and will stay within approved ROW.
- Power lines\Utility lines: 6,891' of new power lines

Location and Types of Water Supply (Exhibit 5, MDP SUP Pg. 5)

- Proposed pond in Section 9, T26S-R27E will be utilized for fresh water.
- Fresh water will be obtained from a private water source.

Construction Materials (MDP SUP Pg. 6)

- Location-specific caliche sources will be provided in post-application supplement

CHEVRON U.S.A. Inc

HH SO 8 P2 5H

NMNM 118108

SECTION 17, T26S-R27E (Off Lease SHL) SECTION 5, T26S, R27E
SHL 255' FNL & 960' FWL BHL 180' FNL & 330' FWL

Well Site Layout (Exhibit 6)

- Surveyor Plat (Exhibit 6a)
 - Exterior well pad dimensions are 525' x 330'
 - Interior well pad dimensions from point of entry (well head) of the well are N-255', S-270', E-180', W-150'. Total disturbance area needed for construction of well pad will be approximately 4 acres
 - Topsoil placement is on the west where interim reclamation is planned to be completed upon completion of well and evaluation of best management practices.
 - Cut and fill: will be minimal.
- Rig Layout (Exhibit 6b)

Plans for Surface Reclamation (Exhibit 6, MDP SUPA Pg. 8)

Interim Reclamation Procedures

- Reclaimed pad size: 200' x 325'
- See Exhibit for reclaimed pad layout, topsoil location & erosion control features

Surface Ownership

- BLM Surface
 - Surface Tenant – Phillip Stell 12.8 SW PUM
- **Nearest Post Office:** Malaga Post Office; ~~11.4~~ 12.8 Miles north 3-10-16

Other Information

- On-site performed by BLM NRS: Paul Murphy ~~11/4/2015~~ 12-8-15
- Cultural report attached: Yes Participating Agreement attached: N/A

CHEVRON U.S.A. Inc

HH SO 8 P2 5H

NMNM 118108

SECTION 17, T26S-R27E (Off Lease SHL) SECTION 5, T26S, R27E
SHL 255' FNL & 960' FWL BHL 180' FNL & 330' FWL

Chevron Representatives

Primary point of contact:

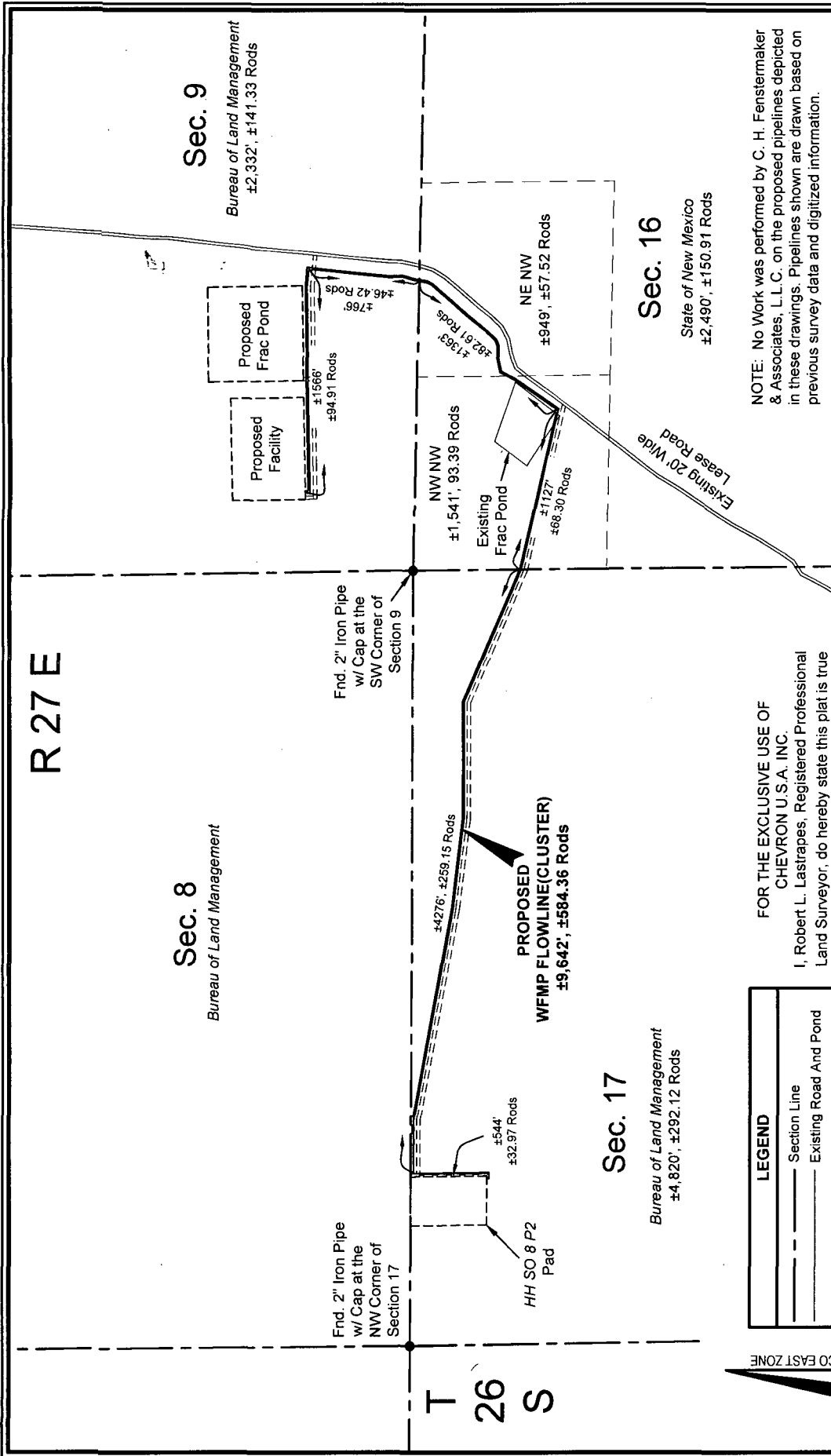
Jennifer Van Curen

Jennifer.VanCuren@arcadis-us.com

M- 432-270-8753

Chevron Functional Contacts

Project Manager Name: Sean Cheben Address: 1400 Smith Street Houston, TX 77002 Phone: (432) 664-6809 Email: Sean.Cheben@chevron.com	Drilling Engineer Name: Roderick Milligan Address: 1400 Smith Street Houston, TX 77002 Phone: (281) 413-9794 Email: RoderickMilligan@chevron.com
Surface Land Representative Name: Kevin Dickerson Address: 15 Smith Road Midland Texas 79705 Phone: (432) 687-7104 Email: Kevin.Dickerson@chevron.com	Facility Lead Name: Tyler Weaver Address: 1400 Smith Street Houston, TX 77002 Phone: (281) 384-8934 Email: tyler.weaver@chevron.com
Geologist Name: Jeff Fabre Address: 1400 Smith Street Houston, TX 77002 Phone: (713) 372-0523 Email: JeffreyFabre@chevron.com	Regulatory Specialist Cindy Herrera-Murillo Address: 1616 W. Bender Blvd, Hobbs, NM 88240 Office: (575) 263-0431 Email: CHerreraMurillo@chevron.com



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LEGEND	
---	Section Line
---	Existing Road And Pond
---	Proposed WFMP Flowline
---	Proposed Access Road, Frac Pump, Tank Battery, Compressor Station & Pad
●	Found Occupation

SURFACE USE PLAT

CHEVRON U.S.A. INC.
PROPOSED WFMP FLOWLINE (CLUSTER)
HH SO 8 P2

SECTIONS 9, 16 & 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

PAGE 1 OF 2

REVISIONS	
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DATE: 02/11/2016	DATE:
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Scale: 1" = 1000'



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PROPOSED WFMP FLOWLINE(CLUSTER)
HH SO 8 P2

SECTIONS 9, 16 & 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

PAGE 2 OF 2

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R 27 E

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Sec. 8

Bureau of Land Management

Sec. 9

Bureau of Land Management
±2,348', ±142.30 Rods

Fnd. 2" Iron Pipe
w/ Cap at the
NW Corner of
Section 17

Fnd. 2" Iron Pipe
w/ Cap at the
SW Corner of
Section 9

T 26 S

PROPOSED
GAS LIFT FLOWLINE
±9,661', ±585.51 Rods

HH SO 8 P2
Pad

Sec. 17

Bureau of Land Management
±4,800', ±290.91 Rods

Sec. 16

State of New Mexico
±2,513', ±152.30 Rods

Existing 20' Wide
Lease Road

NAD 27 NEW MEXICO EAST ZONE

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LEGEND	
---	Section Line
---	Existing Road And Pond
---	Proposed Gas Lift Flowline
---	Proposed Access Road, Frac Pump, Tank Battery, Compressor Station & Pad
●	Found Occupation

Scale: 1" = 1000'
1000' 0 500' 1000'

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SURFACE USE PLAT

CHEVRON U.S.A. INC.

PROPOSED GAS LIFT FLOWLINE

HH SO 8 P2

SECTIONS 9, 16 & 17, T26S-R27E

EDDY COUNTY, NEW MEXICO

PAGE 1 OF 2

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REVISIONS

PROJ. MGR.: GDG No. DATE: REVISED BY:

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SURFACE USE PLAT

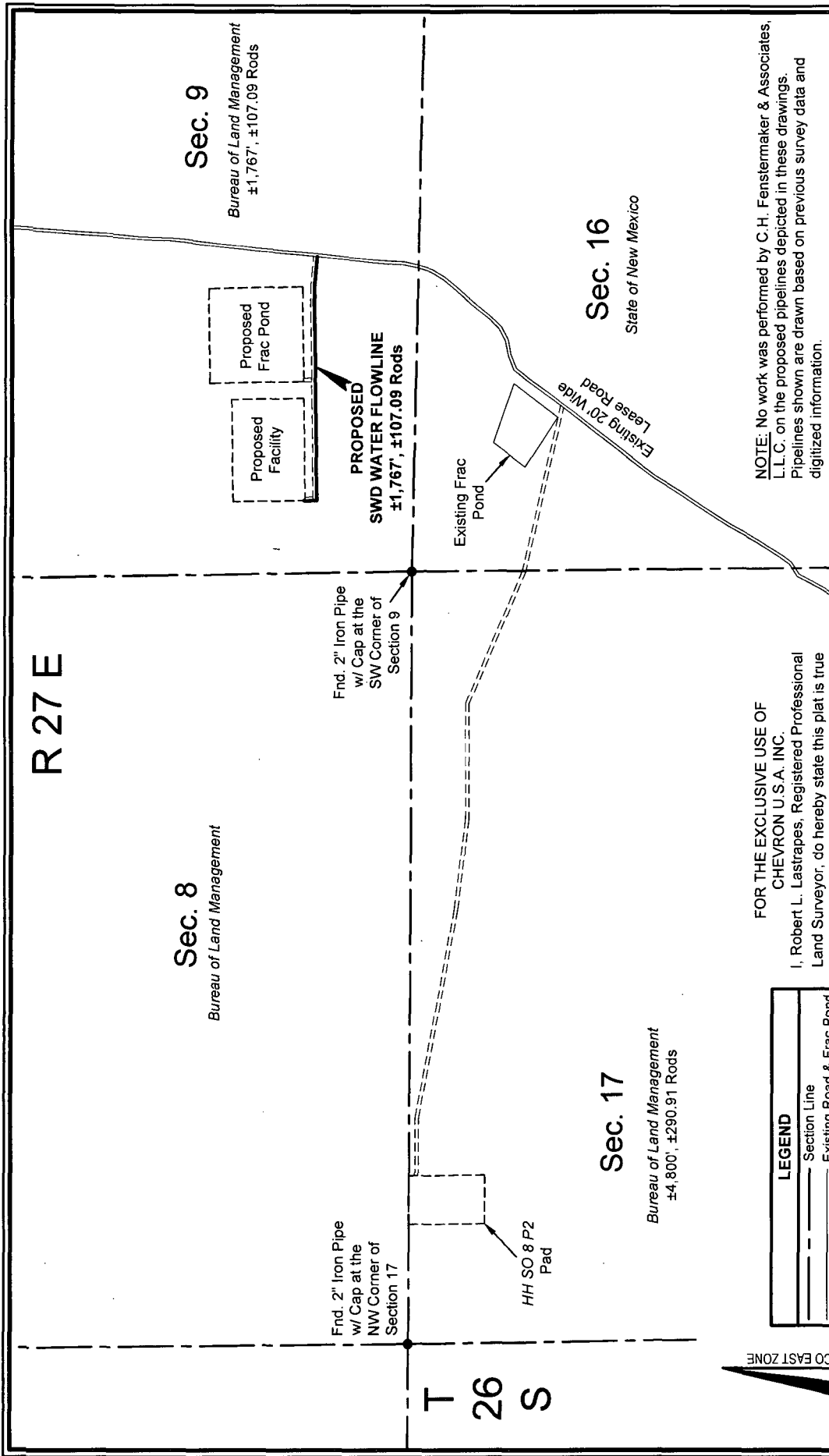
CHEVRON U.S.A. INC.
PROPOSED GAS LIFT FLOWLINE
HH SO 8 P2
SECTIONS 9, 16 & 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

PAGE 2 OF 2

REVISIONS

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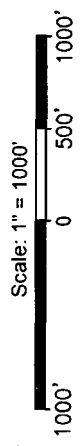
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LEGEND	
Section Line	---
Existing Road & Frac Pond	---
Proposed SWD Water Flowline	---
Proposed Access Road, Frac Pump, Tank Battery, Compressor Station & Pad	---
Found Occupation	●



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SURFACE USE PLAT

CHEVRON U.S.A. INC.

PROPOSED SWD WATER FLOWLINE

HH SO 8 P2

SECTION 9, T26S-R27E

EDDY COUNTY, NEW MEXICO

PAGE 1 OF 2

REVISIONS	
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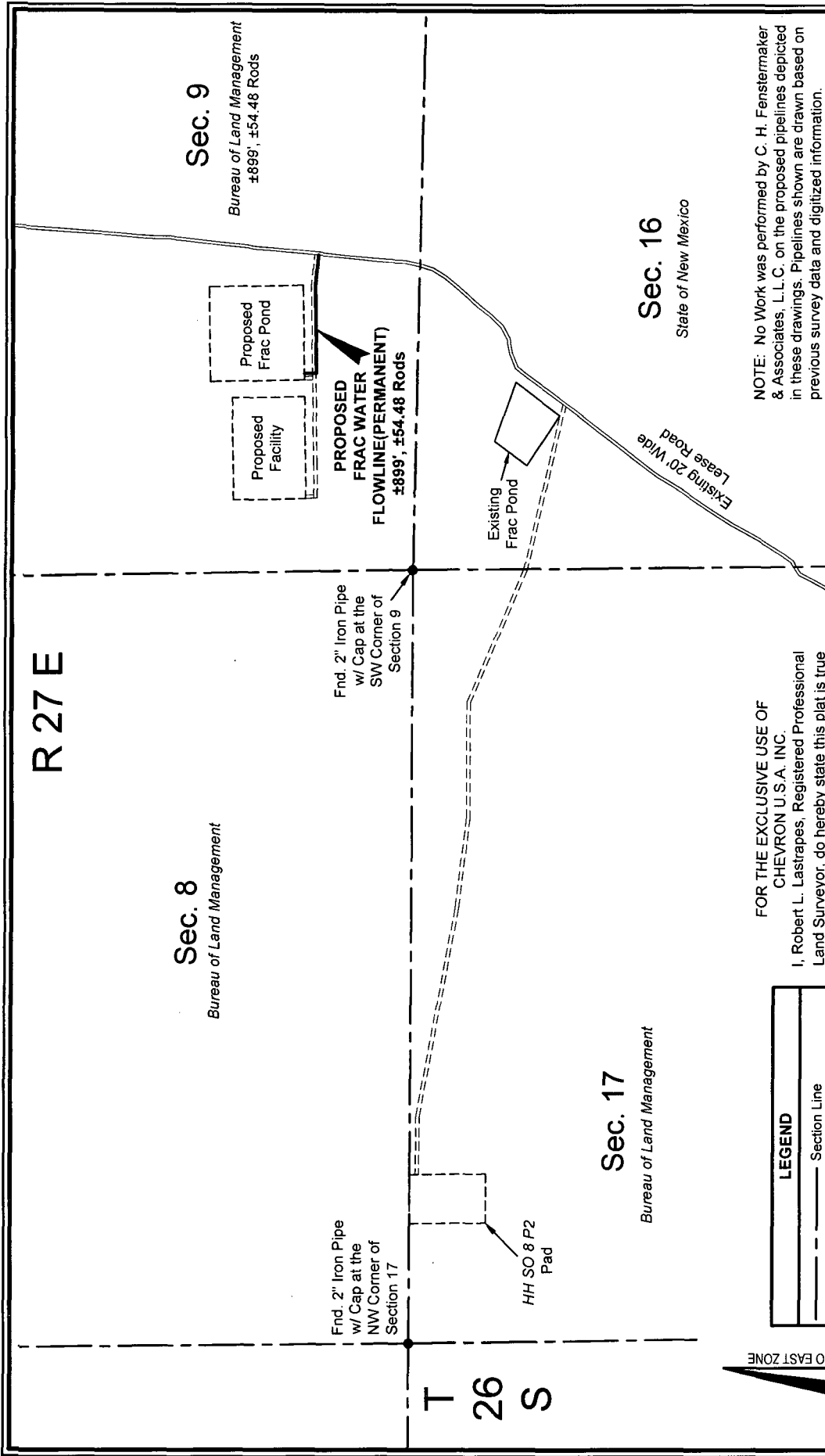
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PROPOSED SWD WATER FLOWLINE
HH SO 8 P2
SECTION 9, T26S-R27E
EDDY COUNTY, NEW MEXICO

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REVISIONS

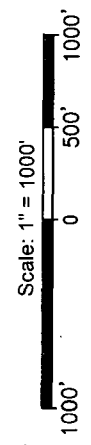
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LEGEND	
Section Line	---
Existing Road	---
Proposed Frac Water Flowline(Permanent)	---
Proposed Access Road	---
Frac Pump, Tank Battery, Compressor Station & Pad	●
Found Occupation	●



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SURFACE USE PLAT

CHEVRON U.S.A. INC.
PROPOSED FRAC WATER FLOWLINE(PERMANENT)
HH SO 8 P2

SECTION 9, T26S-R27E
EDDY COUNTY, NEW MEXICO
PAGE 1 OF 2

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SURFACE USE PLAT

CHEVRON U.S.A. INC.
PROPOSED FRAC WATER FLOWLINE(PERMANENT)
HH SO 8 P2
SECTION 9, T26S-R27E
EDDY COUNTY, NEW MEXICO

PAGE 2 OF 2

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R 27 E

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Sec. 8

Bureau of Land Management

Sec. 9

Bureau of Land Management
±1,534', ±92.97 Rods

Sec. 17

Bureau of Land Management
±4,754', ±288.12 Rods

Sec. 16

State of New Mexico
±2,532', ±153.45 Rods

Fnd. 2" Iron Pipe
w/ Cap at the
NW Corner of
Section 17

Fnd. 2" Iron Pipe
w/ Cap at the
SW Corner of
Section 9

PROPOSED
FRAC WATER
FLOWLINE(TEMPORARY)
±8,820', ±534.55 Rods

NW NW
±1,548', 93.82 Rods

NE NW
±984', ±59.64 Rods

Existing
Frac Pond

±7109'
±67.21 Rods

±473'
±28.67 Rods

±46.85 Rods

±773'

±761'

±46.12 Rods

±1423'

±46.24 Rods

Existing 20' Wide
Lease Road

NAD 27 NEW MEXICO EAST ZONE

LEGEND	
Section Line	---
Existing Road And Pond	---
Proposed Frac Water Flowline(Temporary)	---
Proposed Access Road, Frac Pump, Tank Battery, Compressor Station & Pad	---
Found Occupation	●

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HH SO 8 P2

SECTIONS 9, 16 & 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

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SURFACE USE PLAT

CHEVRON U.S.A. INC.

PROPOSED FRAC WATER FLOWLINE (TEMPORARY)

HH SO 8 P2

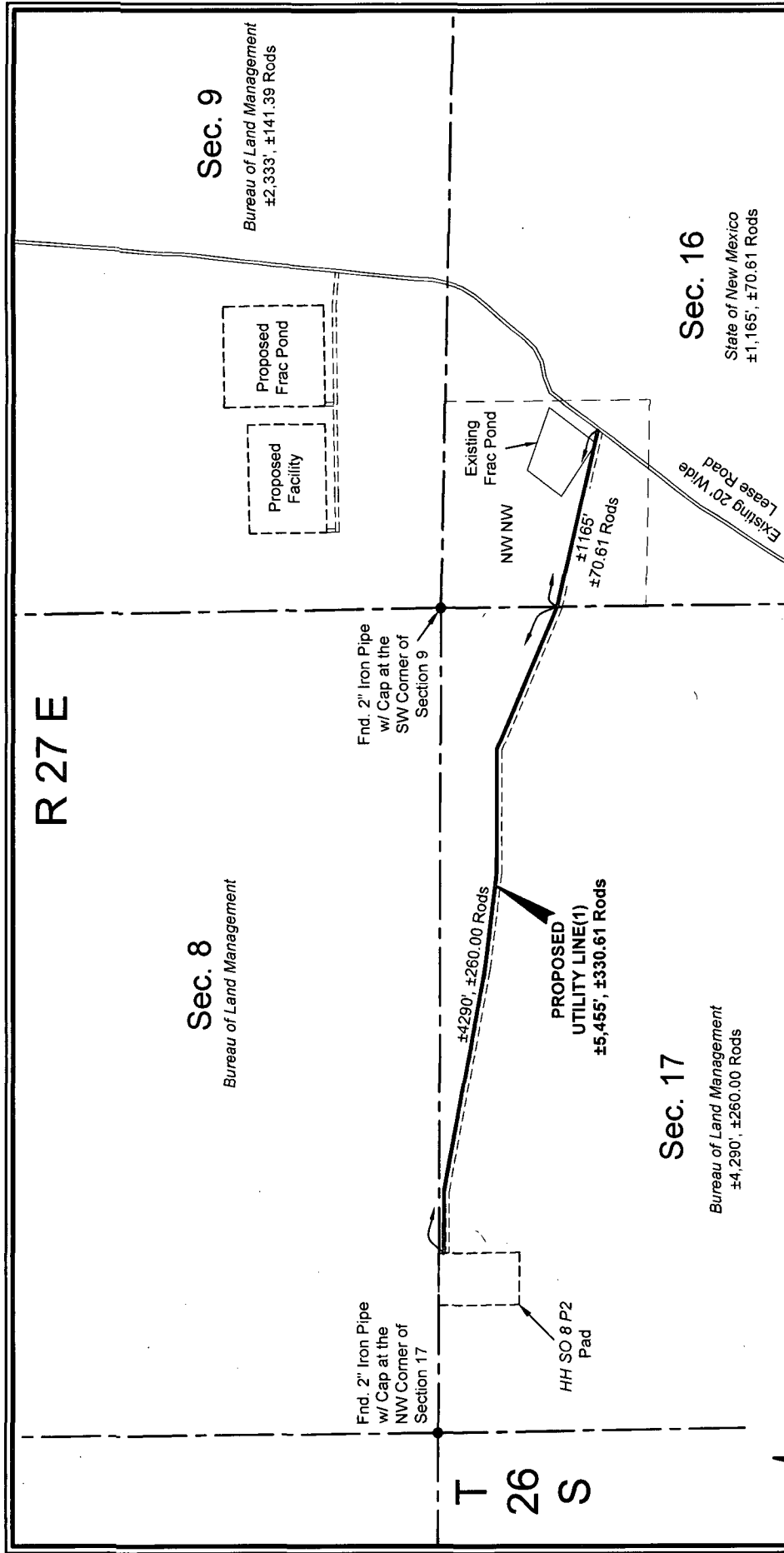
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EDDY COUNTY, NEW MEXICO

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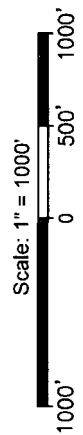
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LEGEND	
Section Line	—
Section Break	- - -
Existing Road & Pond	—
Proposed Utility Line(1)	—
Proposed Access Road,	—
Frac Pump, Tank Battery,	—
Compressor Station & Pad	—
Found Occupation	●





FENSTERMAKER

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CHEVRON U.S.A. INC.

PROPOSED UTILITY LINE(1)

HH SO 8 P2

SECTIONS 16 & 17, T26S-R27E

EDDY COUNTY, NEW MEXICO

PAGE 1 OF 2

REVISIONS

DRAWN BY:	BOR	No.	DATE:	REVISOR BY:
PROJ. MGR.:	GDG			
DATE:	02/11/2016	No.	DATE:	REVISOR BY:
FILENAME: T:\2015\2153440\DWG\Utility 1_SUP.dwg				

DISCLAIMER: At this time, C.H. Fenstermaker & Associates, L.L.C. has not performed nor was asked to perform any type of engineering, hydrological modeling, flood plain, or "No Rise" certification analyses, including but not limited to determining whether the project will impact flood hazards in connection with Federal/FEMA, state, and/or local laws, ordinances and regulations. Accordingly, Fenstermaker makes no warranty or representation of any kind as to the foregoing issues, and persons or entities using this information shall do so at their own risk.

NOTE:

1. Please be advised, that while reasonable efforts are made to locate and verify pipelines and anomalies using our standard pipeline locating equipment, it is impossible to be 100 % effective. As such, we advise using caution when performing work as there is a possibility that pipelines and other hazards, such as fiber optic cables, PVC pipelines, etc. may exist undetected on site.
2. Many states maintain information centers that establish links between those who dig (excavators) and those who own and operate underground facilities (operators). It is advisable and in most states, law, for the contractor to contact the center for assistance in locating and marking underground utilities. For guidance, New Mexico One Call: www.nmonecall.org
3. No Work was performed by C. H. Fenstermaker & Associates, L.L.C. on the proposed pipelines depicted in these drawings. Pipelines shown are drawn based on previous survey data and digitized information.

**FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.**

I, Robert L. Lastrapes, Registered Professional
Land Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.

Not to be used for construction, bidding,
recordation, conveyance, sales, or as the
basis for the issuance of a permit.



Robert L. Lastrapes
Registration No. 23006

C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com



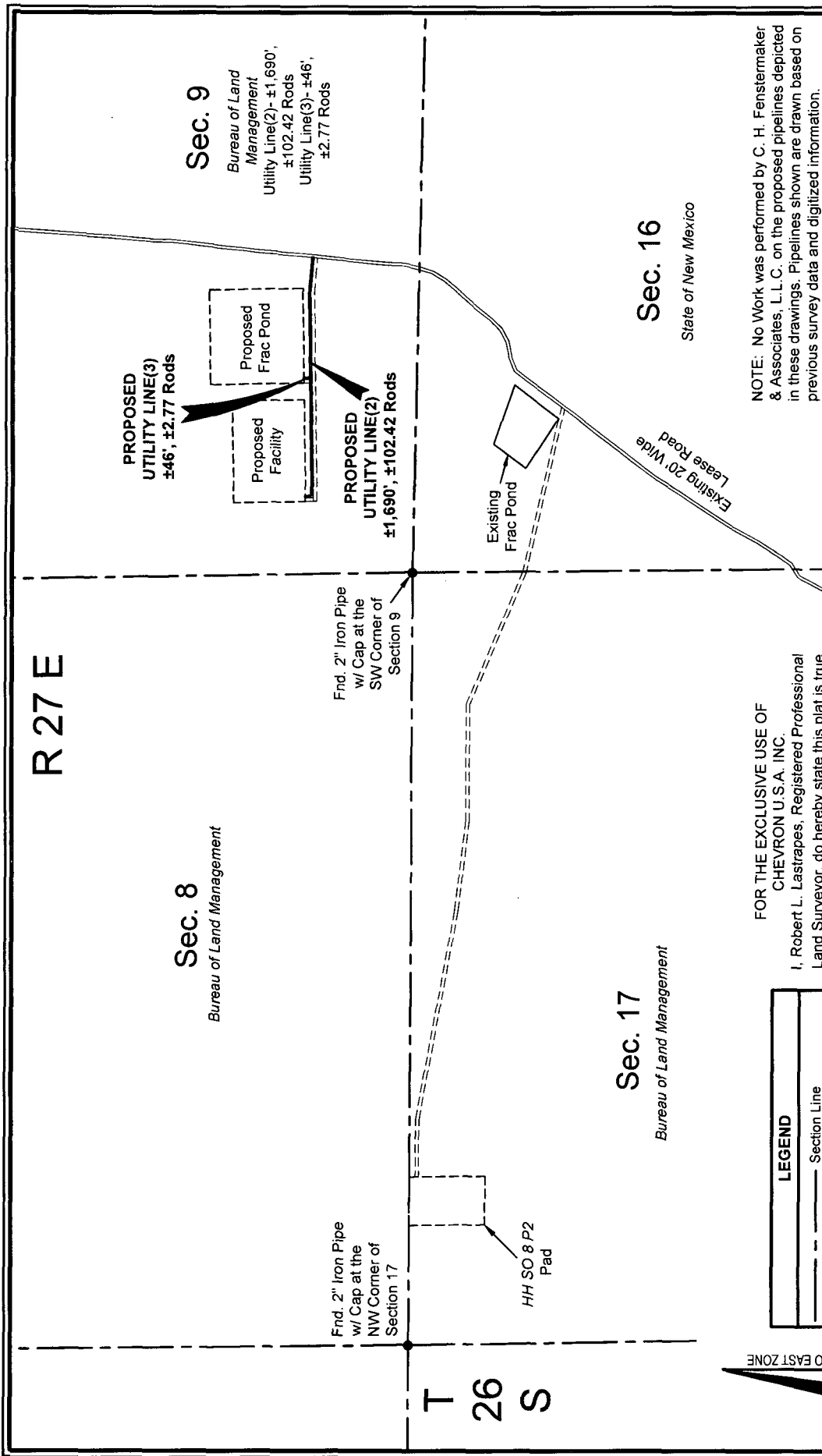
SURFACE USE PLAT

CHEVRON U.S.A. INC.
PROPOSED UTILITY LINE(1)
HH SO 8 P2
SECTIONS 16 & 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

PAGE 2 OF 2

REVISIONS

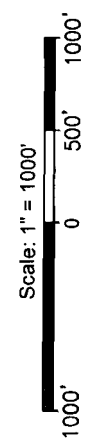
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LEGEND	
Section Line	Existing Road & Pond
Proposed Utility Line(2 & 3)	Proposed Access Road,
Frac Pump, Tank Battery,	Compressor Station & Pad
Found Occupation	



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Robert L. Lastrapes
Registration No. 23006

SURFACE USE PLAT

CHEVRON U.S.A. INC.
PROPOSED UTILITY LINE(2 & 3)
HH SO 8 P2

SECTION 9, T26S-R27E
EDDY COUNTY, NEW MEXICO

REVISIONS			
DRAWN BY: BOR	No.	DATE:	REVISED BY:
PROJ. MGR.: GDG	No.	DATE:	REVISED BY:
DATE: 02/11/2016	No.	DATE:	REVISED BY:
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SURFACE USE PLAT

CHEVRON U.S.A. INC.

PROPOSED UTILITY LINE(2 & 3)

HH SO 8 P2

SECTION 9, T26S-R27E

EDDY COUNTY, NEW MEXICO

PAGE 2 OF 2

REVISIONS

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REVISED BY:

DATE:

PROJ. MGR: GDG

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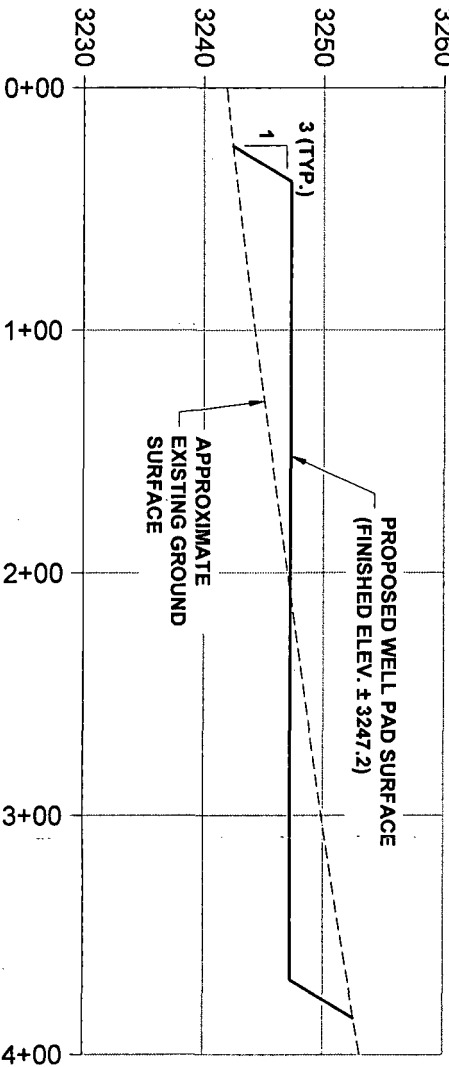
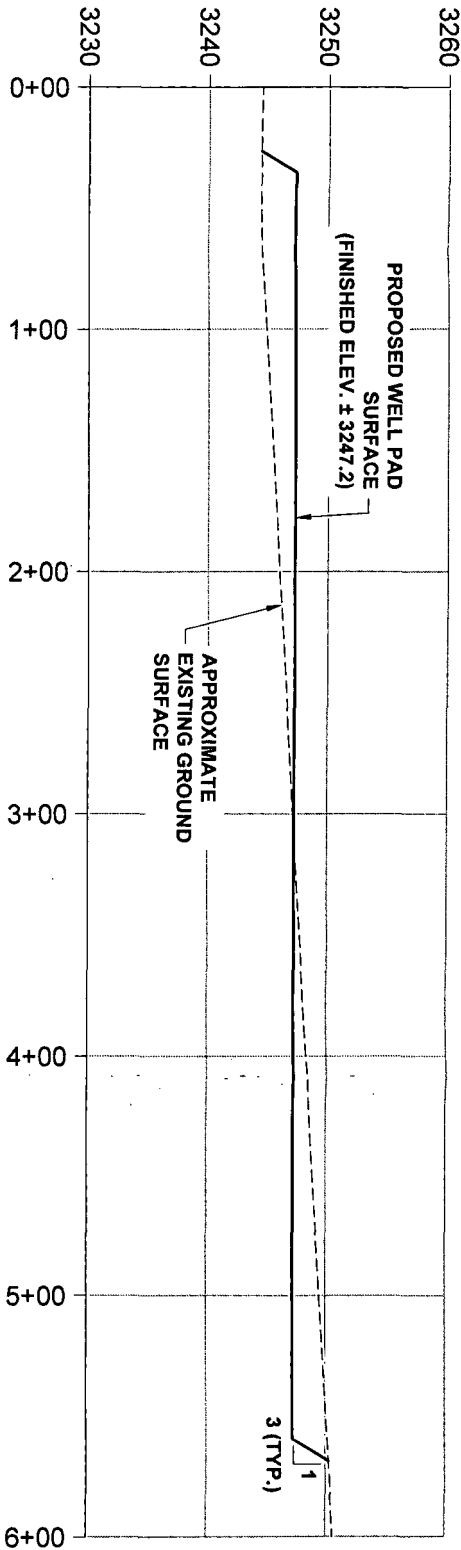
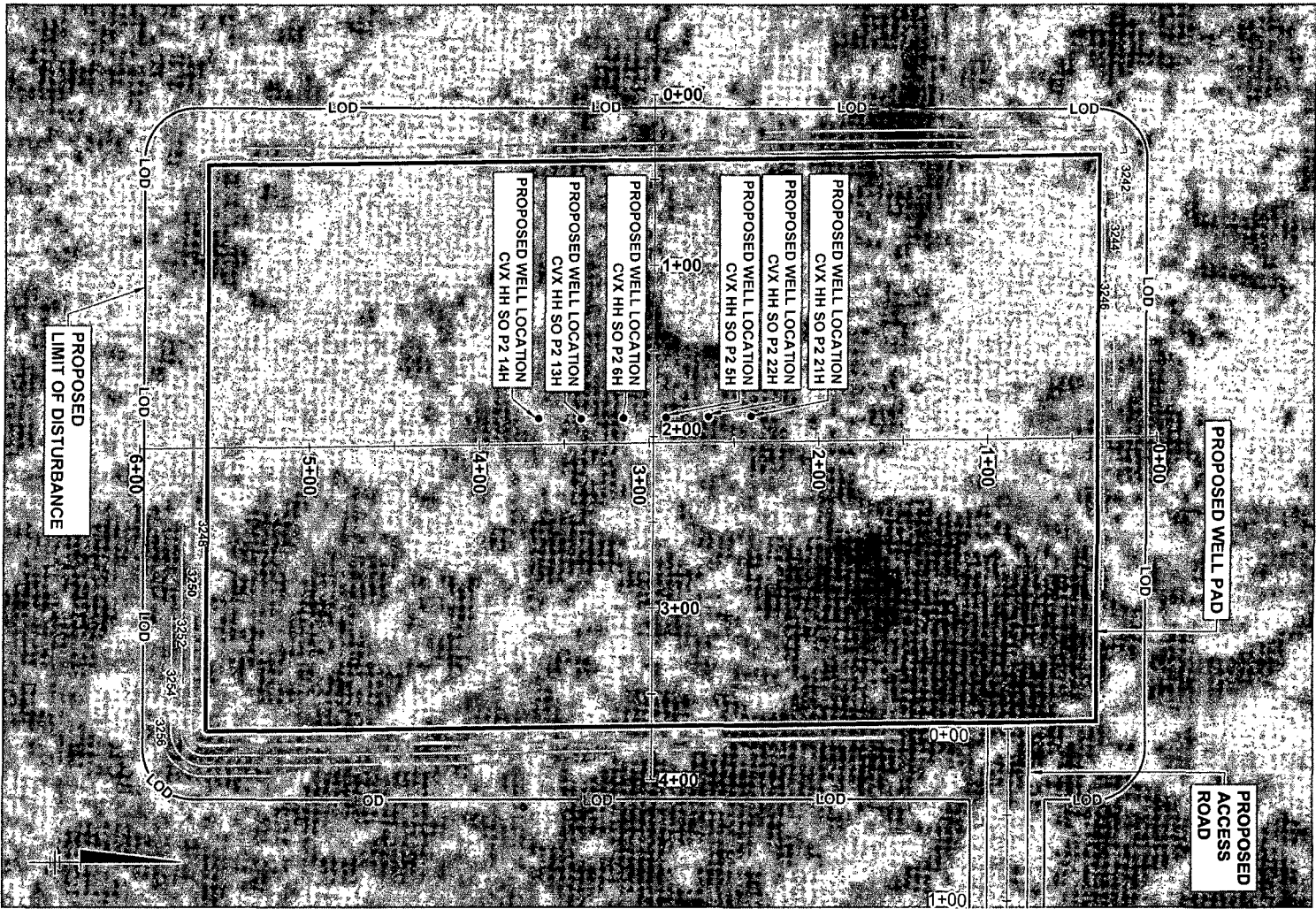
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DATE: 02/11/2016

No.

FILENAME: T:\2015\2153440\DWG\Utility 2 and 3_SUP.dwg

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ACCESS ROAD DISTURBANCE AREA: 5.5 ACRES

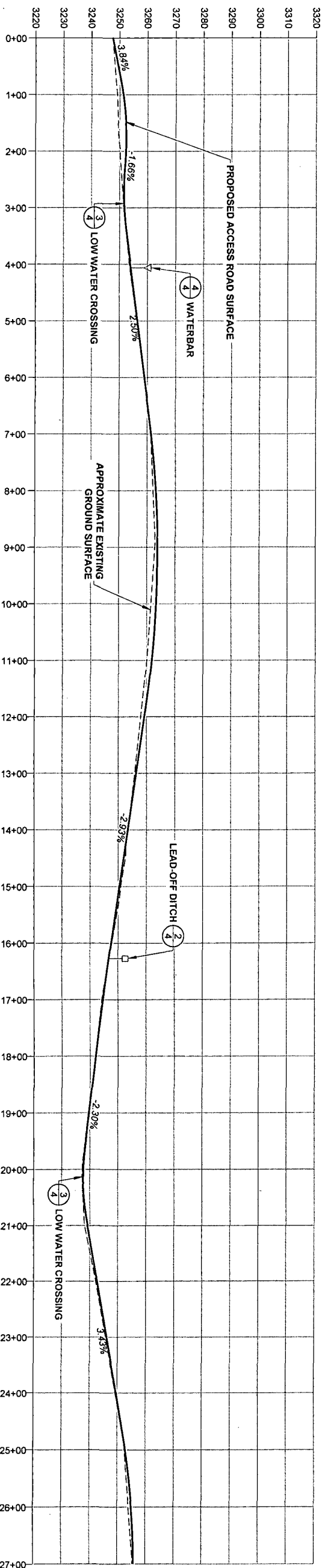
Professional Engineer's Name	HUGH B. ROBOOTHAM
Professional Engineer's No.	9933
Drawn	Project Mgr.



CUT-AND-FILL SITE LAYOUT AND CROSS-SECTIONS

CHEVRON • EDDY COUNTY, NEW MEXICO
HH SO 08 P2


ARCADIS Project No.
60CHEVRO-ENDDO
Date
MARCH 2016
ARCADIS
1004 North Big Spring Street,
Suite 300
Midland, TX
Tel. 432.697.5400



APPROXIMATE NET CUT VOLUME: 2,618 CY
APPROXIMATE NET FILL VOLUME: 2,590 CY
APPROXIMATE ACCESS ROAD DISTURBANCE AREA: 10.9 ACRES

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Pad 2 AR.tif
Pad2_Facilities.tif
primary_BW.gif

Professional Engineer's Name HUGH B. ROBOTHAM					
Professional Engineer's No. 9833					
State _____ Date Signed _____ Project Mgr. _____					
No.	Date	Revisions	By	Cld	Disg'd by
THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REPRODUCED OR COPIED WITHOUT PERMISSION OF SAID ENTITY.					
This drawing represents one inch on the original drawing.					
USE TO VERIFY REPRODUCTION SCALE					

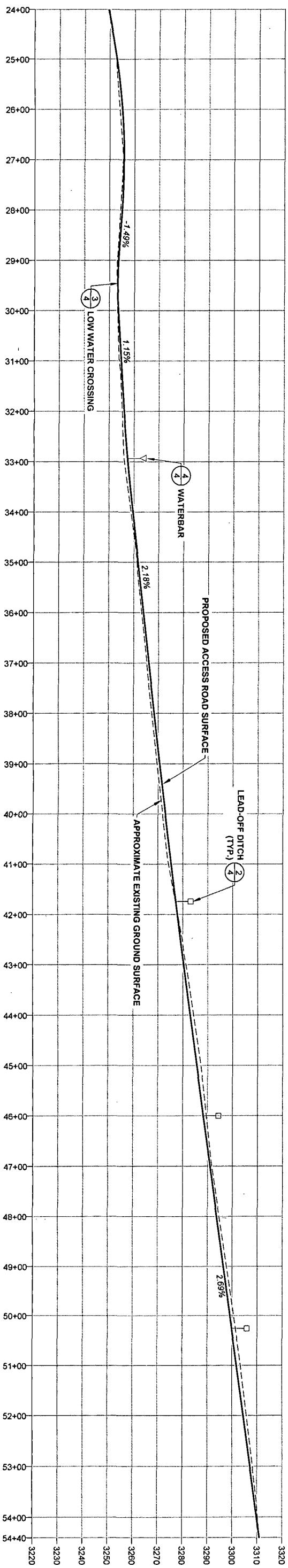
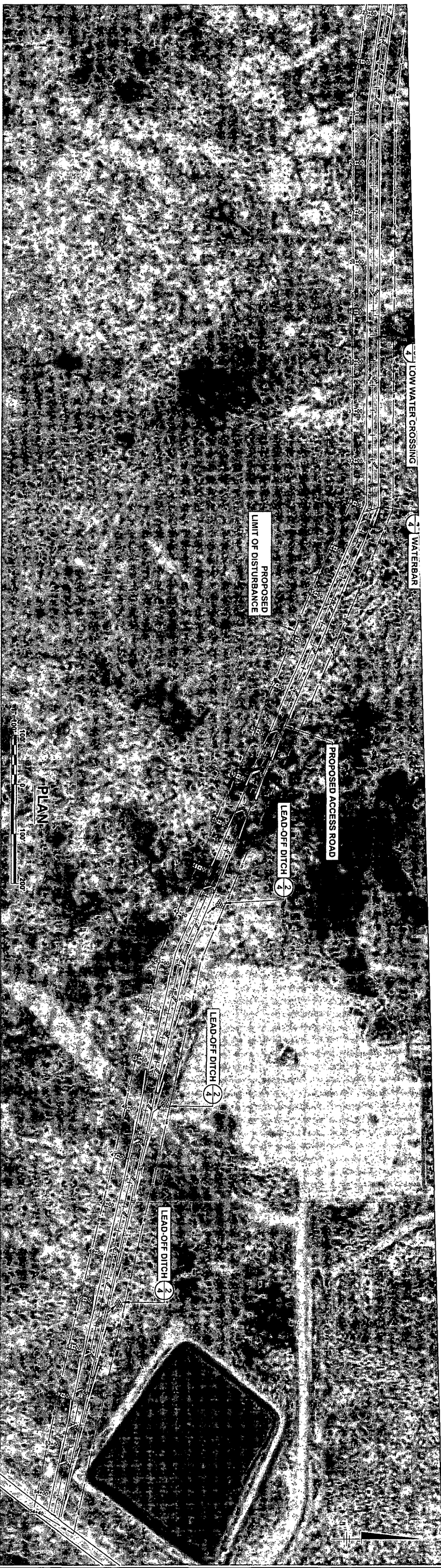
 ARCADIS	Design & Engineering for nature and built assets
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ACCESS ROAD CUT-AND-FILL SITE LAYOUT AND CROSS-SECTIONS

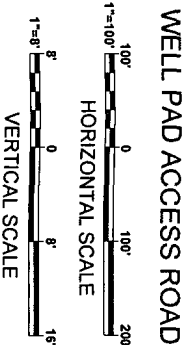
CHEVRON • EDDY COUNTY, NEW MEXICO
H1 SO 08 P2

ARCADIS Project No. 80CHEVRO END0
Date MARCH 2016

ARCADIS



APPROXIMATE NET CUT VOLUME: 2,618 CY
APPROXIMATE NET FILL VOLUME: 2,590 CY
APPROXIMATE ACCESS ROAD DISTURBANCE AREA: 10.9 ACRES



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No.	Date	Revisions	By
			CHK
			State
			Drawn by
			Checked by
			ALS
Professional Engineer's Name		HUGH B. ROBOTHAM	
Professional Engineer's No.		9953	
Date		March 2016	
Project No.		HH SO 08 P2	
Project Name		ACCESS ROAD CUT-AND-FILL SITE LAYOUT AND CROSS-SECTIONS	
Project Location		Eddy County, New Mexico	
Project Manager		ALEXIS SIDARI	
Project Engineer		ALEXIS SIDARI	
Project Designer		ALEXIS SIDARI	
Project Checker		ALEXIS SIDARI	
Project Approver		ALEXIS SIDARI	
Project Auditor		ALEXIS SIDARI	
Project Recorder		ALEXIS SIDARI	
Project Plotter		ALEXIS SIDARI	
Project Printer		ALEXIS SIDARI	
Project Distributor		ALEXIS SIDARI	
Project Archiver		ALEXIS SIDARI	
Project Destroyer		ALEXIS SIDARI	



ARCADIS U.S., INC.

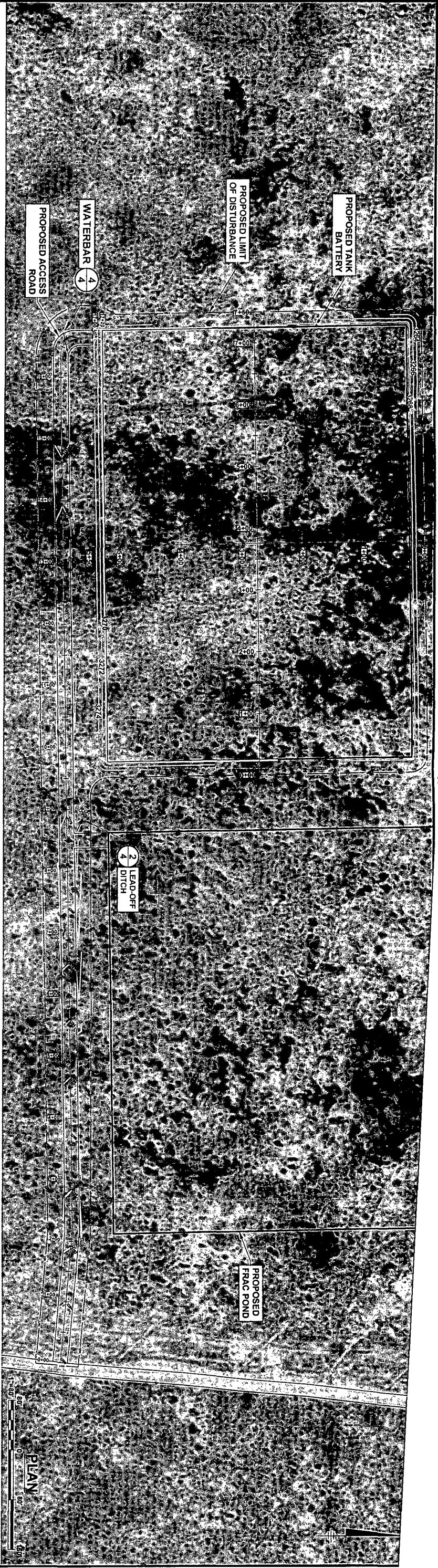
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CHEVRON • EDDY COUNTY, NEW MEXICO
HH SO 08 P2

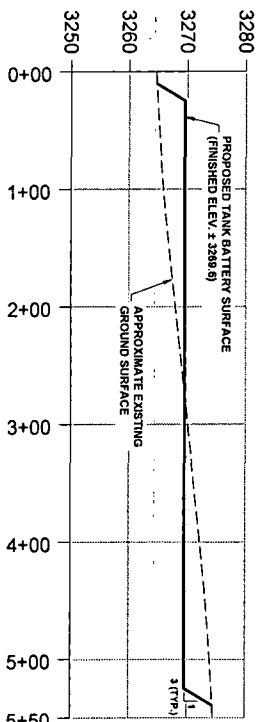
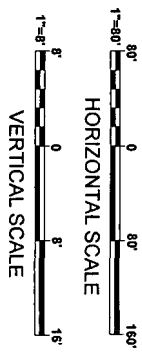
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Date: MARCH 2016
ARCADIS 1004 North Big Spring Street, Suite 300, Midland, TX 79701
Tel: 432.687.5400

3

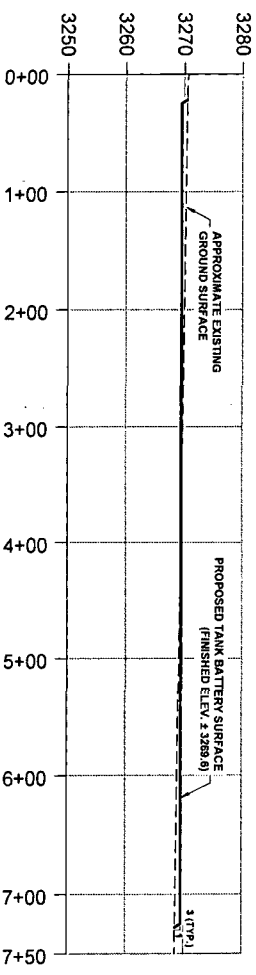
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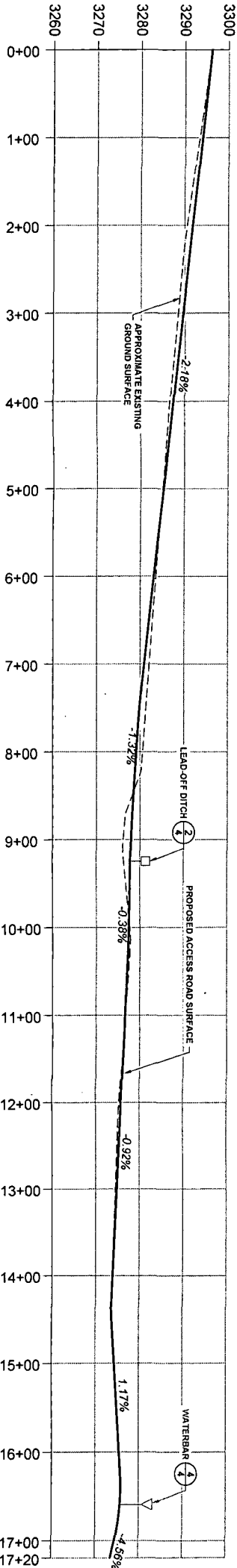
APPROXIMATE NET CUT VOLUME: 19,114 CY
APPROXIMATE NET FILL VOLUME: 19,145 CY
APPROXIMATE TANK BATTERY CONSTRUCTION
DISTURBANCE AREA: 9.5 ACRES
ACCESS ROAD DISTURBANCE AREA: 3.0 ACRES



NORTH - SOUTH CROSS-SECTION



EAST - WEST CROSS-SECTION



TANK BATTERY ACCESS ROAD

Professional Engineer's Name	HUGH B. ROBOTHAM
Professional Engineer's No.	9933
State	State
Date Signed	
Project Mgr.	



FACILITIES CUT-AND-FILL SITE LAYOUT AND
CROSS-SECTIONS

CHEVRON • EDDY COUNTY, NEW MEXICO
HH SO 08 P2

ARCADIS Project No.
00CHEVRO END0

Date
MARCH 2016

ARCADIS
10000 N. Big Spring Street,
Suite 300
Midland, TX
Tel. 432.687.5400

4

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Chevron USA Inc.
LEASE NO.:	NMNM-118108
WELL NAME & NO.:	HH SO 8 P2 5H
SURFACE HOLE FOOTAGE:	0255' FNL & 0960' FWL
BOTTOM HOLE FOOTAGE	0180' FNL & 0330' FWL Sec. 05, T. 26 S., R 27 E.
LOCATION:	Section 17, T. 26 S., R 27 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Raptor Nest
 - Avian Protection
 - Cave/Karst
 - VRM
 - Cultural
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - Cement Requirements
 - High Cave/Karst
 - Logging Requirements
 - Waste Material and Fluids
- ☒ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☐ **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)

Avian Protection

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

Raptor Nest Mitigation

- A BLM Wildlife Biologist must be contacted by the operator prior to construction activities to determine if the raptor nest is active.
- Raptor nests on special, natural habitat features, such as trees, large brush, cliff faces and escarpments, will be protected by not allowing surface disturbance within up to 200 meters of nests or by delaying activity for up to 90 days, or a combination of both. Exceptions to this requirement for raptor nests will be considered if the nests expected to be disturbed are inactive, the proposed activity is of short duration (e.g. habitat enhancement projects, fences, pipelines), and will not result in continuing activity in proximity to the nest.
- Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Visual Resource Management (VRM)

- Above-ground structures including meter housing that are not subject to safety requirements are painted a flat non-reflective paint color, Shale Green from the BLM Standard Environmental Color Chart (CC-001: June 2008)
- Chevron would use minimal light necessary for site safety, security, and operations.
- Light should be directed downward or only where needed.
- Low-pressure sodium lamps, such as yellow LED lighting (3,000 Kelvin or less) or equivalent, would be used to reduce sky glow and wildlife impacts.
- Properly shielded and mounted light fixtures would be used to reduce sky glow from upward pointing light, as well as trespass from light falling outside of desired area of illumination. Full cutoff shielding would be used during production.

Cave and Karst

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

Cave/Karst Surface Mitigation

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

Construction:

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

No Blasting:

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

Pad Berming:

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

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

Tank Battery Liners and Berms:

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

Leak Detection System:

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

Automatic Shut-off Systems:

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

Cave/Karst Subsurface Mitigation

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

Rotary Drilling with Fresh Water:

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

Directional Drilling:

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

Lost Circulation:

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

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

Abandonment Cementing:

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

Pressure Testing:

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

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS**Road Width**

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

Surfacing

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

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

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

Crowning

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

Ditching

Ditching shall be required on both sides of the road.

Turnouts

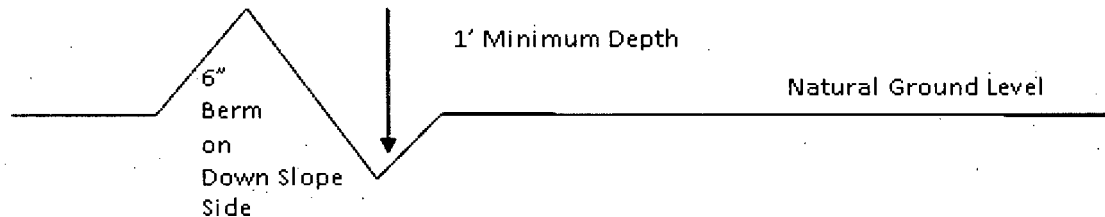
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Cattleguards

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguards that are in place and are utilized during lease operations.

Fence Requirement

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

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

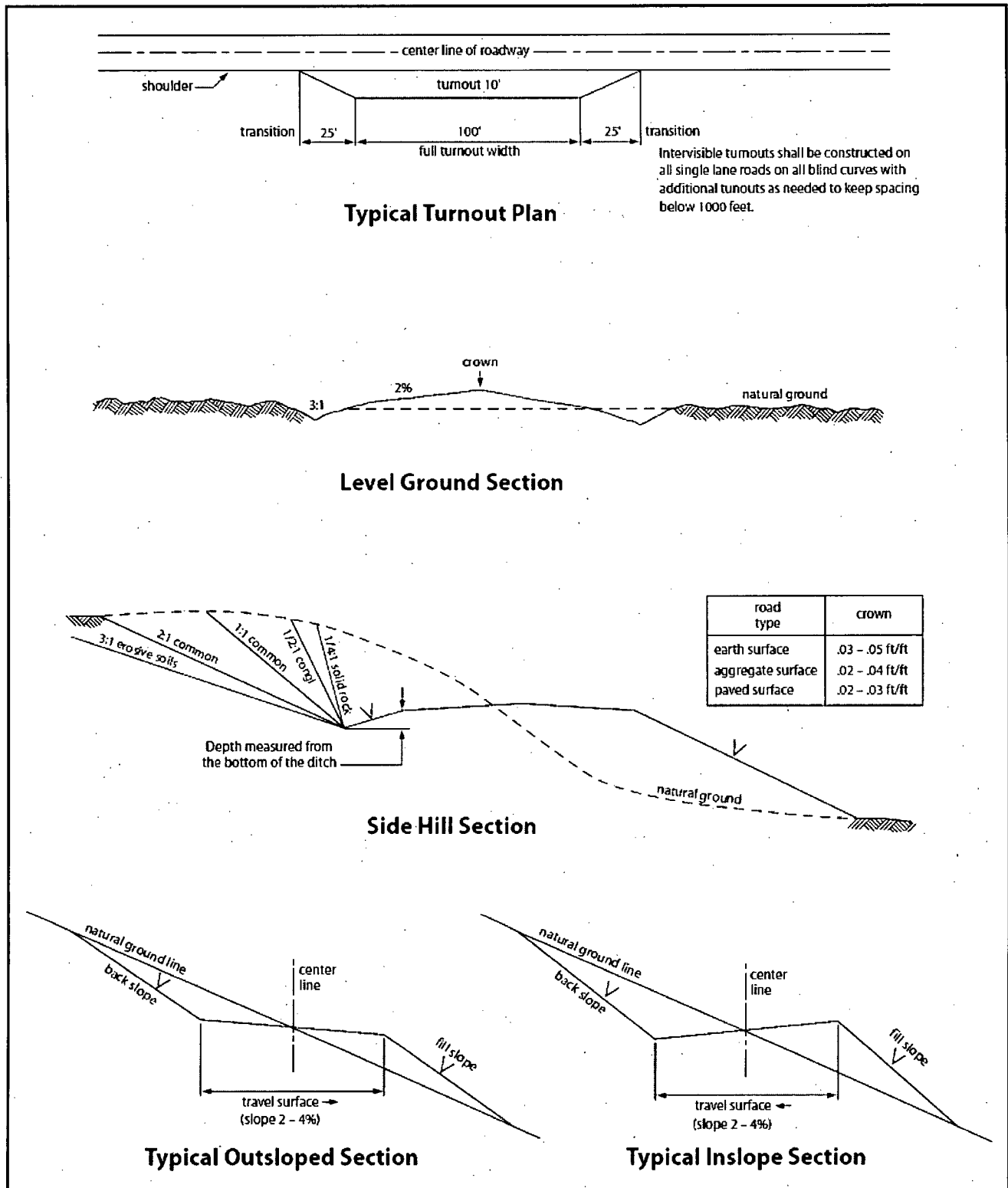


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

☒ **Eddy County**

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

1. **Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. **The operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other wells.**
4. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
5. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

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

volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

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

Wait on cement (WOC) for Water Basin:

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

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

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

High Cave/Karst

Possibility of water flows in the Castillo and Salado.

Possibility of lost circulation in the Delaware.

Abnormal Pressures may be encountered when penetrating the 3rd Bone Spring Sandstone and all subsequent formations.

A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH. IF THE PRIMARY CEMENT JOB ON THE SURFACE CASING DOES NOT CIRCULATE, THEN THE NEXT TWO CASING STRINGS MUST BE CEMENTED TO SURFACE.

1. The 13-3/8 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. **If salt is encountered, set casing at least 25 feet above the salt.**
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**

- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Formation below the 13-3/8" shoe to be tested according to Onshore Order

2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

- 2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

Operator has proposed DV tool at depth of 2100', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

- a. First stage to DV tool:
 - ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.
- b. Second stage above DV tool:
 - ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst. Excess calculates to 22% - Additional cement may be required.**

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

- 3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - ☒ Cement as proposed by operator. 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 53.
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M) psi. 10M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.** BOP/BOPE shall be tested after nipple up according to Onshore Order #2.
3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer.**
 - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
 - d. The results of the test shall be reported to the appropriate BLM office.
 - e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
 - f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
 - g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of

the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

E. DRILL STEM TEST

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

F. WASTE MATERIAL AND FLUIDS

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

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

JAM 072516

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

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

Exclosure Netting (Open-top Tanks)

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

Chemical and Fuel Secondary Containment and Exclosure Screening

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

Open-Vent Exhaust Stack Enclosures

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

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement

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

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

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

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

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.)

Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

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

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

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
 - The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)
8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.
9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.
11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.
12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.
- | | |
|---|--|
| <input type="checkbox"/> seed mixture 1 | <input type="checkbox"/> seed mixture 3 |
| <input type="checkbox"/> seed mixture 2 | <input checked="" type="checkbox"/> seed mixture 4 |
| <input type="checkbox"/> seed mixture 2/LPC | <input type="checkbox"/> Aplomado Falcon Mixture |
13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

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

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. 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 associated roads, 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.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.

- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

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

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

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.
5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The

holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

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

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

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

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

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

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.

- Fill in any holes from the poles removed.

IX. INTERIM RECLAMATION

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

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

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

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

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

X. FINAL ABANDONMENT & RECLAMATION

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

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

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

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

Mixture 4, for Gypsum Sites

The holder shall seed all the 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>
Alkli Sacaton (<i>Sporobolus airoides</i>)	1.5
DWS~ Four-wing saltbush (<i>Atriplex canescens</i>)	8.0

~DWS: DeWinged Seed

*Pounds of pure live seed:

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