CONFIDENTIAL

NM OIL CONSERVATION
ARTESIA DISTRICT
MAY 16 2016
RECEIVED

AT5-16-399

OCD Artesia

Form 3160-3
(March 2012)

HIGH CAVEKARST

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. BHL: NMNM134862 / SHL: NMNM014768
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone	6. If Indian, Allotee or Tribe Name
2. Name of Operator Devon Energy Production Company, L.P.	7. If Unit or CA Agreement, Name and No.
3a. Address 333 West Sheridan Avenue, Oklahoma City, OK 73102-5010	8. Lease Name and Well No. Cerf 10 Fed Com 20H
3b. Phone No. (include area code) 405-552-6558	9. API Well No. 30-015-43781
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface Unit A, Sec 10-T21S-R27E, 600' FNL 50' FEL PP: 330' FNL 330' FEL At proposed prod. zone Unit B, Sec 9-T21S-R27E, 380' FNL 2310' FEL	10. Field and Pool, or Exploratory Avalon; Bone Spring, East (3713)
	11. Sec., T. R. M. or Blk. and Survey or Area SHL: Sec 10-T21S-R27E BHL: Sec 10-T21S-R27E
14. Distance in miles and direction from nearest town or post office* Approximately 5.73 miles NE of Carlsbad, NM	12. County or Parish Eddy / 13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any) See attached map	16. No. of acres in lease SHL: 280 Acres BHL: 160 Acres / 17. Spacing Unit dedicated to this well 240 Acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. See attached map	19. Proposed Depth 14,588' MD / 7235' TVD / 20. BLM/BIA Bond No. on file CO-1104; NBM-000801
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3238' GL	22. Approximate date work will start* 11/15/2016 / 23. Estimated duration 45 Days

UNORTHODOX LOCATION

closed loop system

PADDED WITH THE CERF 10 FED COM 19H

24. Attachments

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

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

25. Signature Linda Good	Name (Printed/Typed) Linda Good	Date 12/3/2015
Title Regulatory Compliance Specialist		
Approved by (Signature) /Cody Layton	Name (Printed/Typed)	Date MAY 10 2016
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

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

APPROVAL FOR TWO YEARS

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

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

NM OIL CONSERVATION
ARTESIA DISTRICT
MAY 16 2016
RECEIVED

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
11885 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
11885 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to apprpriate

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-43781	3713	Avalon; Bone Spring, East

Property Code	Property Name	Well Number
39695	CERF 10 FEDERAL COM	20H

OGRID No.	Operator Name	Elevation
6137	DEVON ENERGRY PRODUCTION CO. LP.	3238.0'

Surface Location

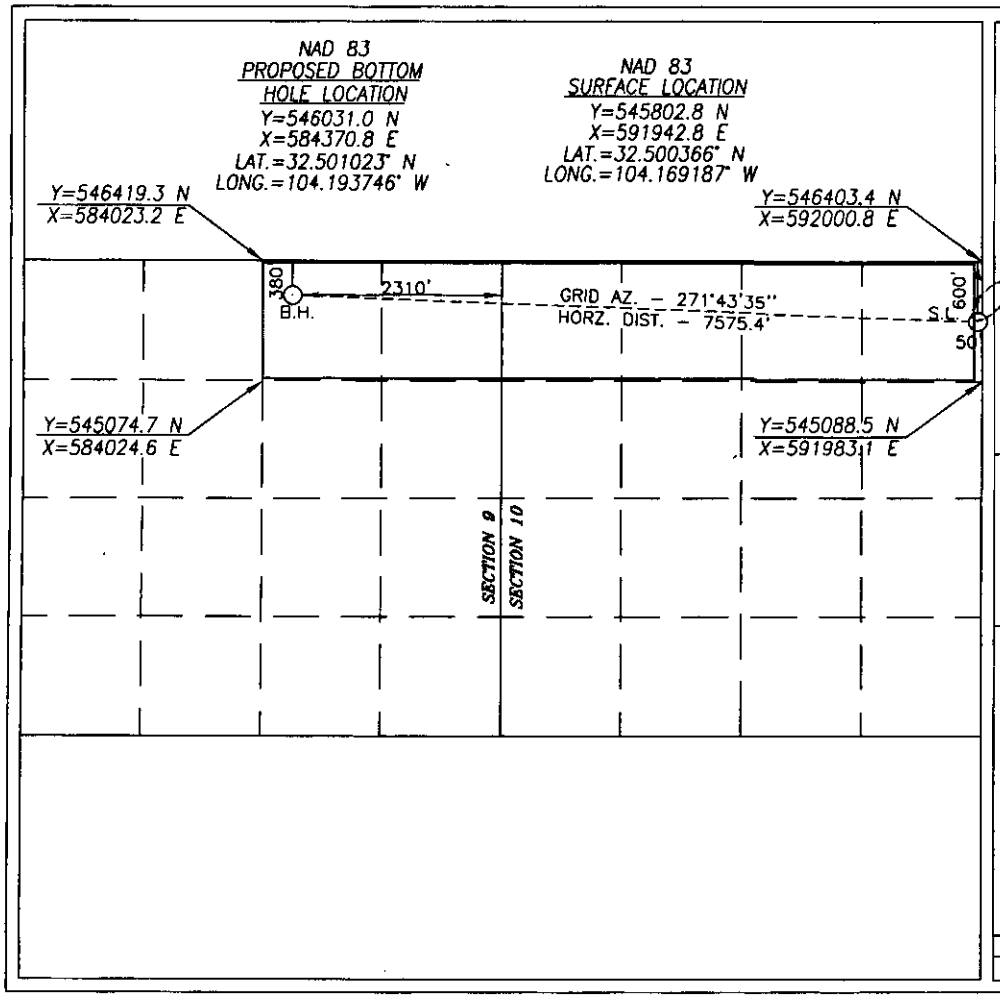
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	10	21-S	27-E		600	NORTH	50	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	9	21-S	27-E		380	NORTH	2310	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
240.00			

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



OPERATOR CERTIFICATION

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Linda Good 12/3/2015
Signature Date

Linda Good
Printed Name

linda.good@dvn.com
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

JUNE 18, 2015
Date of Survey

Signature & Seal of Professional Surveyor

CHAD L. HARCROW
NEW MEXICO
17777
LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 7/7/15

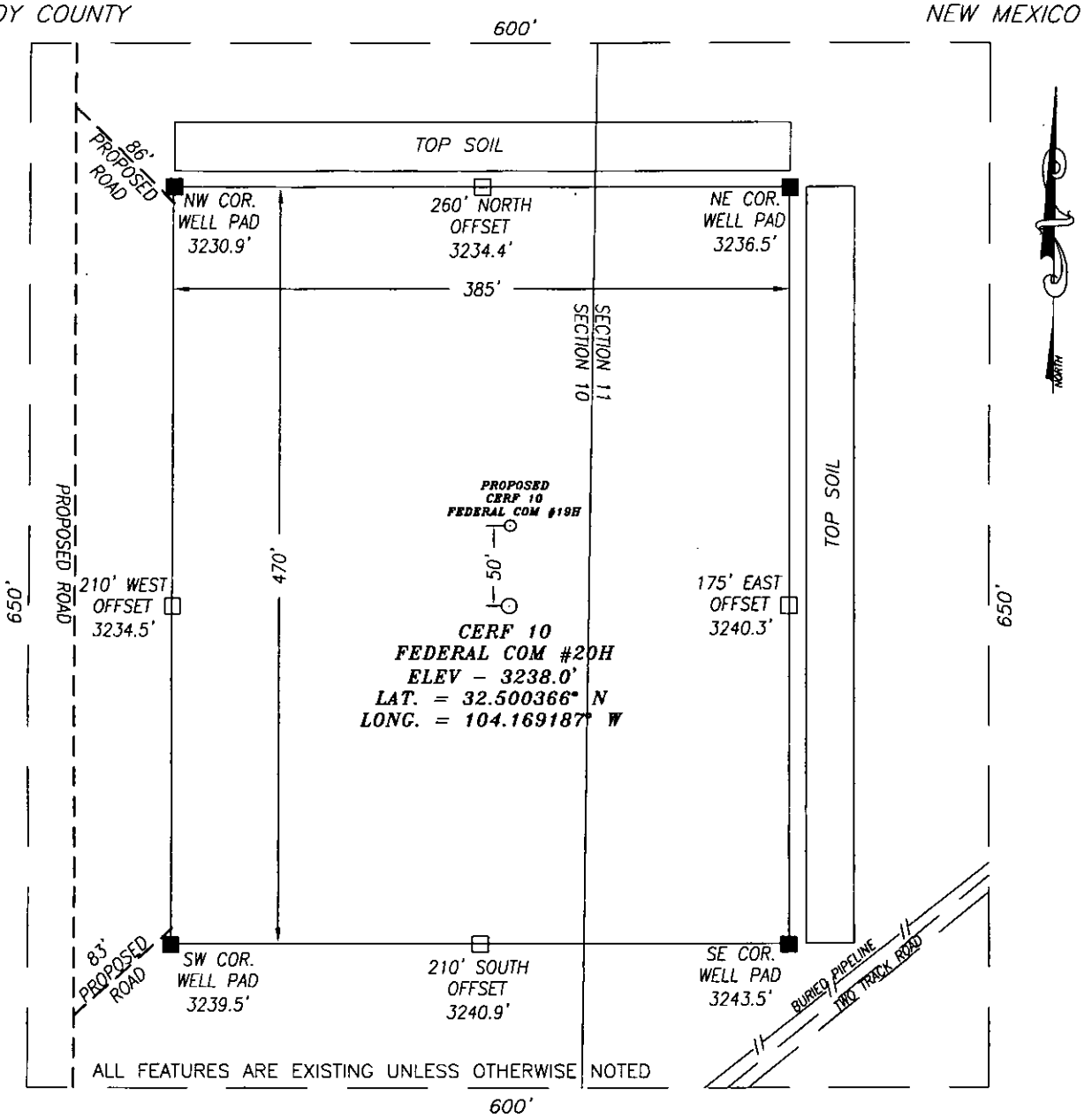
Certificate No. CHAD HARCROW 17777

W.O. # 15-784 DRAWN BY: AF

SITE MAP

SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,

EDDY COUNTY NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF RAINS ROAD AND ILLINOIS CAMP ROAD (CR 206) GO EASTNORTHEAST ON RAINS ROAD FOR APPROX. 2.4 MILES PASSING ANGEL RANCH RD.; THEN TURN LEFT (NORTHEAST) ONTO A CALICHE RD. AND GO APPROX. 1.3 MILES TO A 'Y' INTERSECTION; THEN TURN RIGHT (EAST) AND GO APPROX. 0.5 MILES; THEN TURN RIGHT (SOUTHEAST) AND GO APPROX 0.6 MILES; THEN TURN RIGHT (WEST) AND GO APPROX. .4 MILES TO PROPOSED ROAD ON THE LEFT (SOUTH); PROPOSED WELL IS APPROX. 0.2 MILES SOUTH.

100 0 100 200 Feet

Scale: 1"=100'

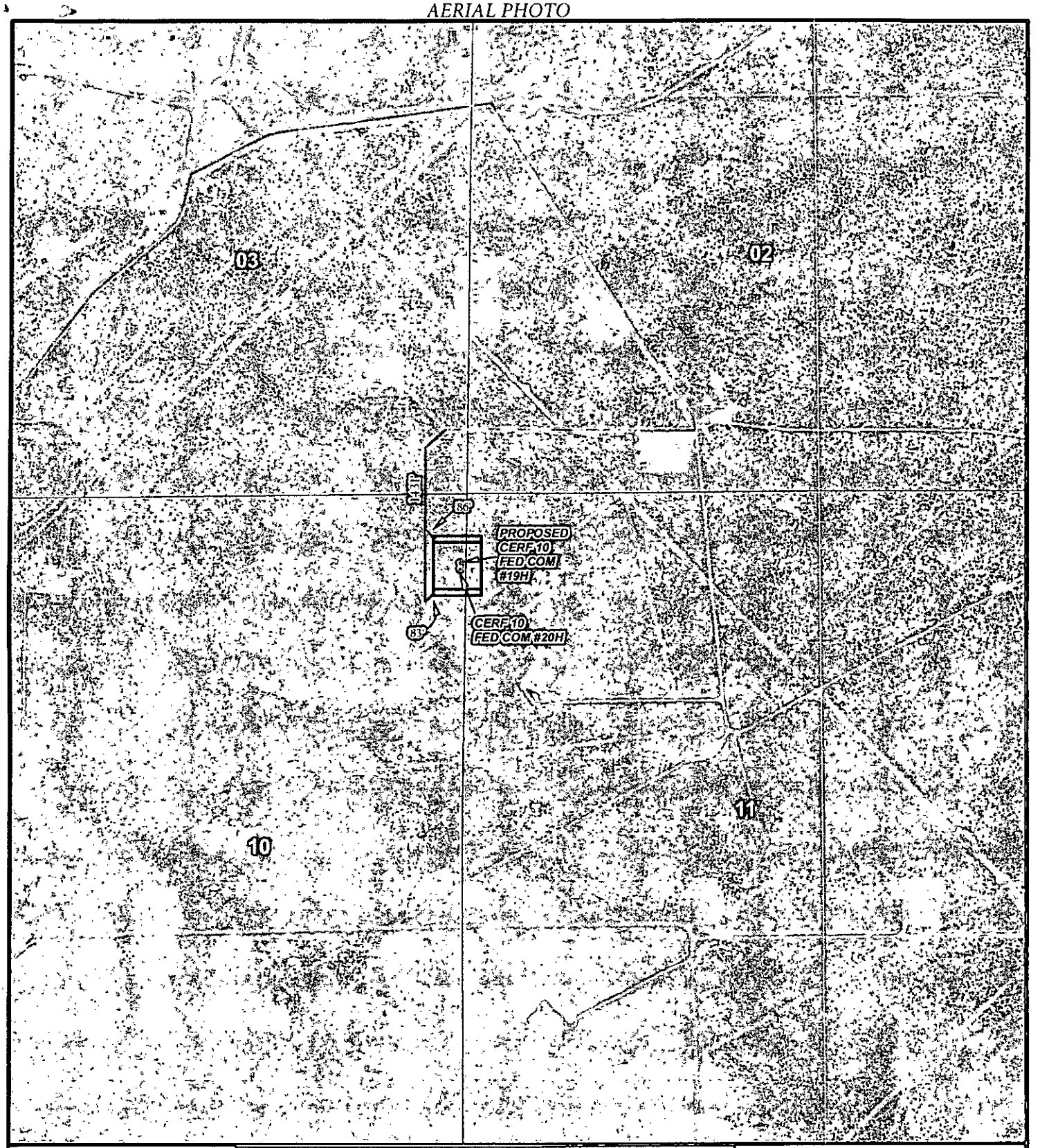
HARCROW SURVEYING, LLC
2314 W. MAIN ST. ARTESIA, N.M. 88210
PH: (575) 746-2158 FAX: (575) 746-2158
e.harcrow@harcrowsurveying.com

DEVON ENERGY PRODUCTION CO., L.P.

CERF 10 FEDERAL COM #20H WELL LOCATED 600 FEET FROM THE NORTH LINE AND 50 FEET FROM THE EAST LINE OF SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

SURVEY DATE: JUNE 18, 2015		PAGE: 2 OF 6
DRAFTING DATE: JUNE 30, 2015		
APPROVED BY: CH	DRAWN BY: AF	FILE: 15-784

AERIAL PHOTO



LEGEND

- WELL
- WELLPAD
- EXISTING ROAD
- PROPOSED ROAD

CERF 10 FED COM #20H

SEC: 10	TWP:21 S.	RGE:27 E.
STATE: NEW MEXICO	COUNTY: EDDY	ELEVATION:3238.0'
W.O. # 15-784	LEASE: CERF 10 FED COM	600' FNL & 50' FEL
		SURVEY: N.M.P.M

0 2,500 FEET

0 0.05 0.1 0.2 Miles

1 IN = 1,000 FT

LOCATION MAP IMAGERY ROAD 07/01/2015 AP

N

devon

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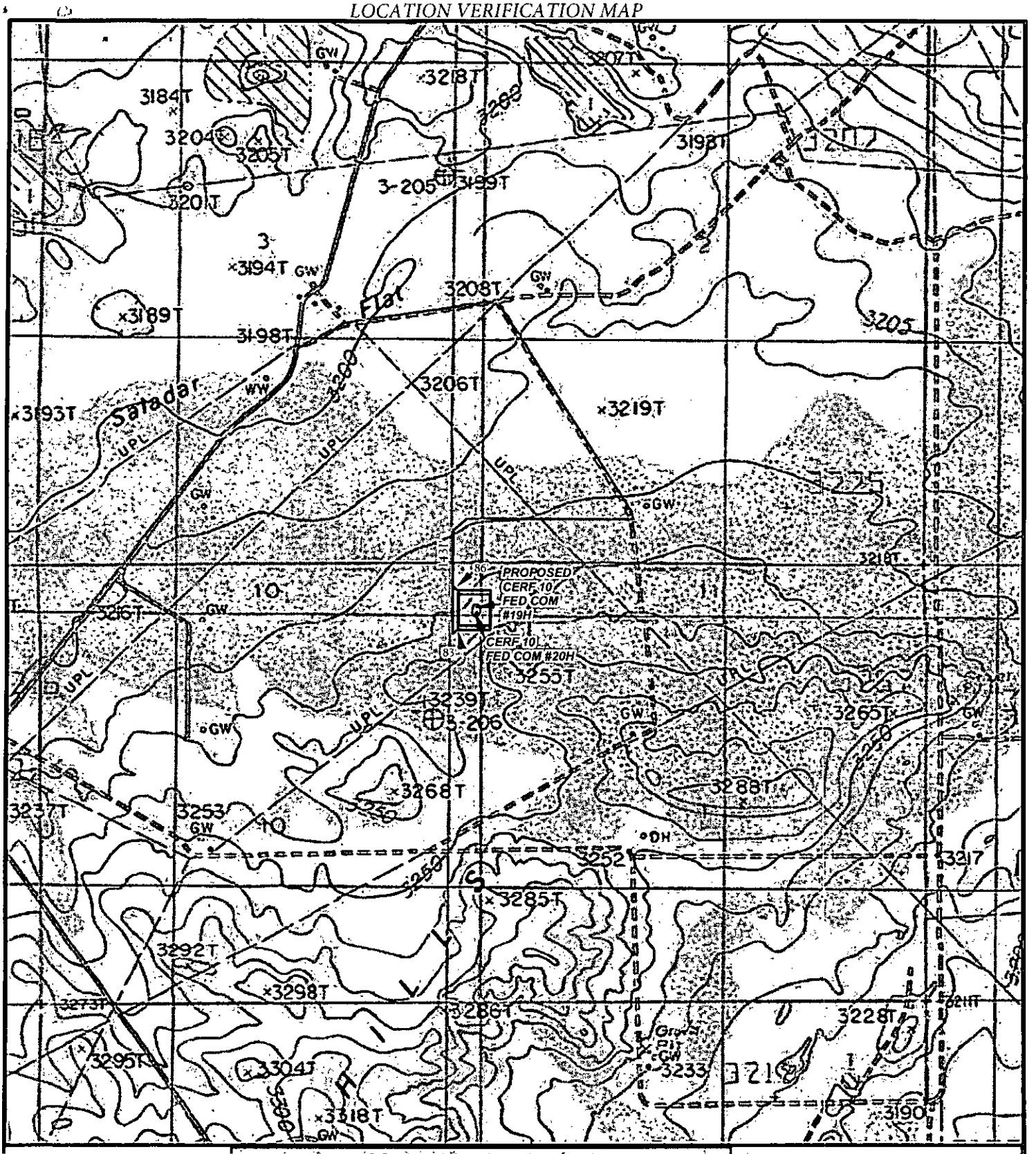
ORIG: 06/18/2015

LOCATION VERIFICATION MAP



LEGEND

- WELL
- WELLPAD
- EXISTING ROAD
- PROPOSED ROAD

CERF 10 FED COM #20H

SEC: 10	TWP:21 S.	RGE:27 E.	ELEVATION:3238.0'
STATE: NEW MEXICO	COUNTY: EDDY		600' FNL & 50' FEL
W.O. # 15-784	LEASE: CERF 10 FED COM		SURVEY: N.M.P.M

0 2,500 FEET

0 0.1 0.2 0.4 Miles

1 IN = 1,500 FT

LOCATION MAP | TOPO ROAD | 07/01/2015 | AF

N

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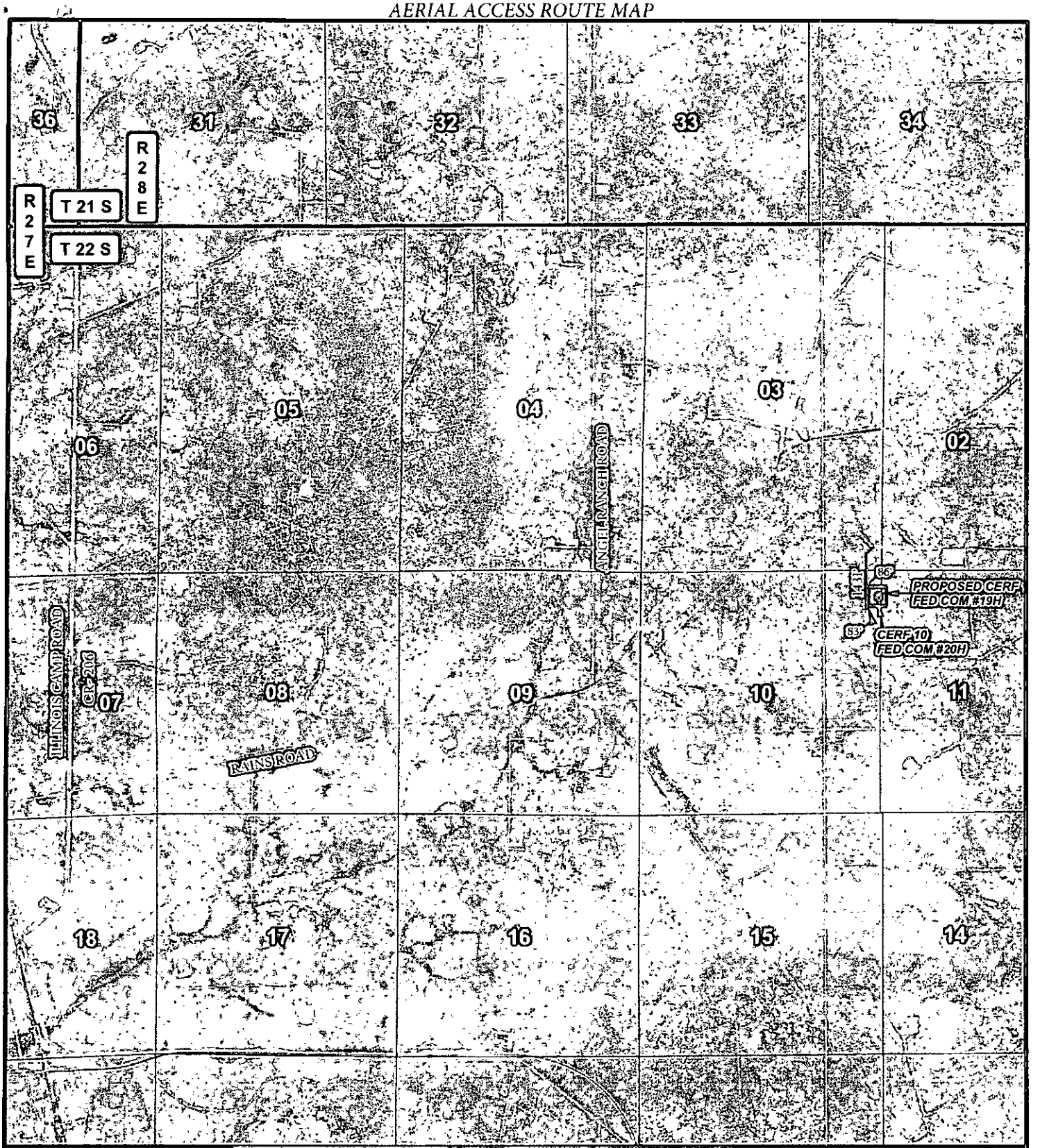
c.harcrow@harcrowsurveying.com

ORIG: 06/18/2015

AERIAL ACCESS ROUTE MAP



LEGEND

- WELL
- WELLPAD
- EXISTING ROAD
- PROPOSED ROAD

CERF 10 FED COM #20H

SEC: 10	TWP:21 S.	RGE:27 E.	ELEVATION:3238.0'
STATE: NEW MEXICO	COUNTY: EDDY	600' FNL & 50' FEL
W.O. # 15-784	LEASE: CERF 10 FED COM	SURVEY: N.M.P.M

0 2,500 5,000 FEET

0 0.175 0.35 0.7 Miles

1 IN = 2,750 FT

LOCATION MAP IMAGERY 07/01/2015 AF

N

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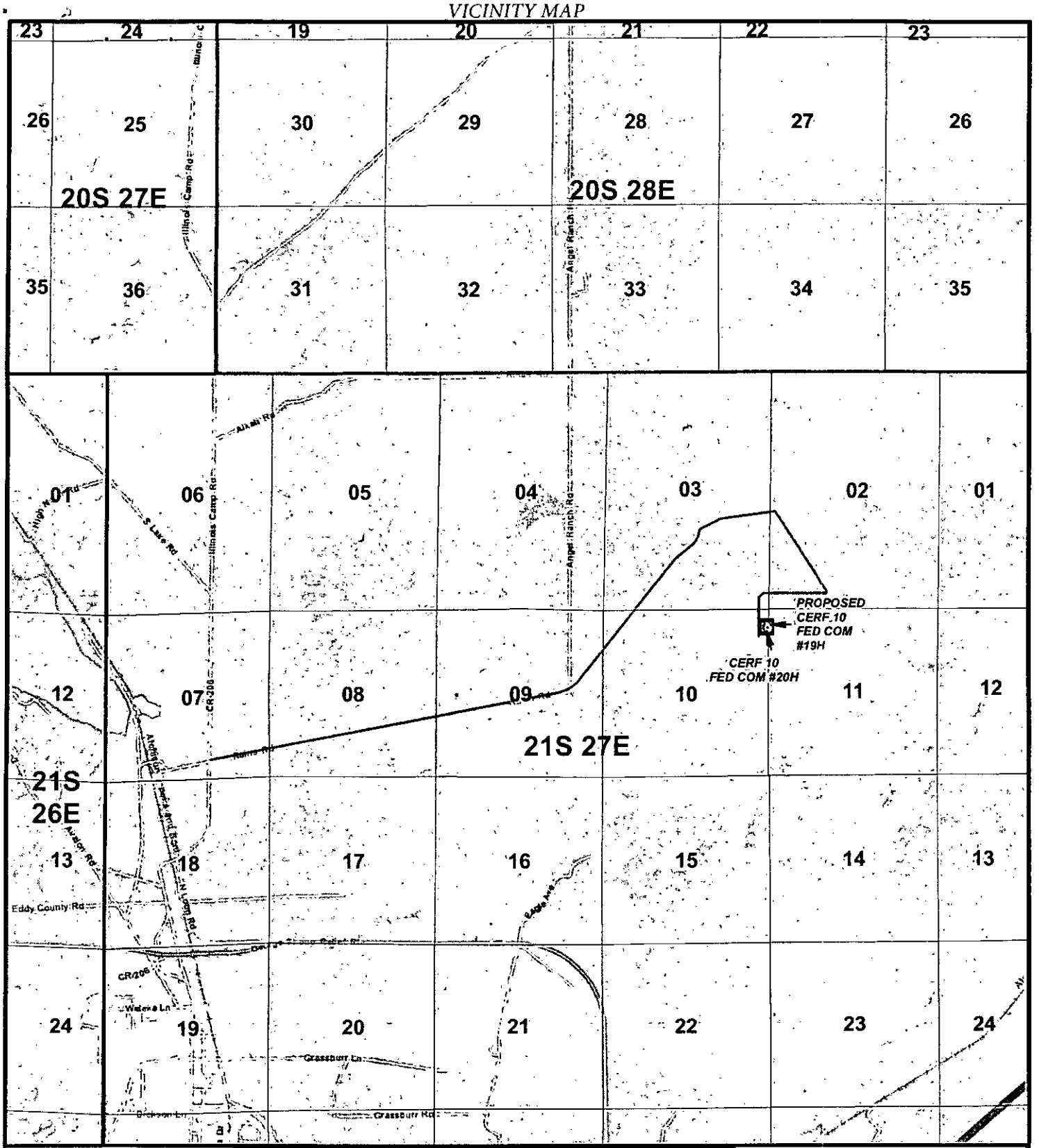
ORIG: 06/18/2015

VICINITY MAP



LEGEND

- WELL
- WELLPAD
- EXISTING ROAD
- PROPOSED ROAD

CERF 10 FED COM #20H

SEC: 10	TWP:21 S.	RGE:27 E.	ELEVATION:3238.0'
STATE: NEW MEXICO		COUNTY: EDDY	600' FNL & 50' FEL
W.O. # 15-784	LEASE: CERF 10 FED COM		SURVEY: N.M.P.M

0 2,500 5,000 7,500 10,000 FEET

0 0.275 0.55 1.1 Miles

1 IN = 4,000 FT

VICINITY MAP 07/01/2015 A.F

N

devon

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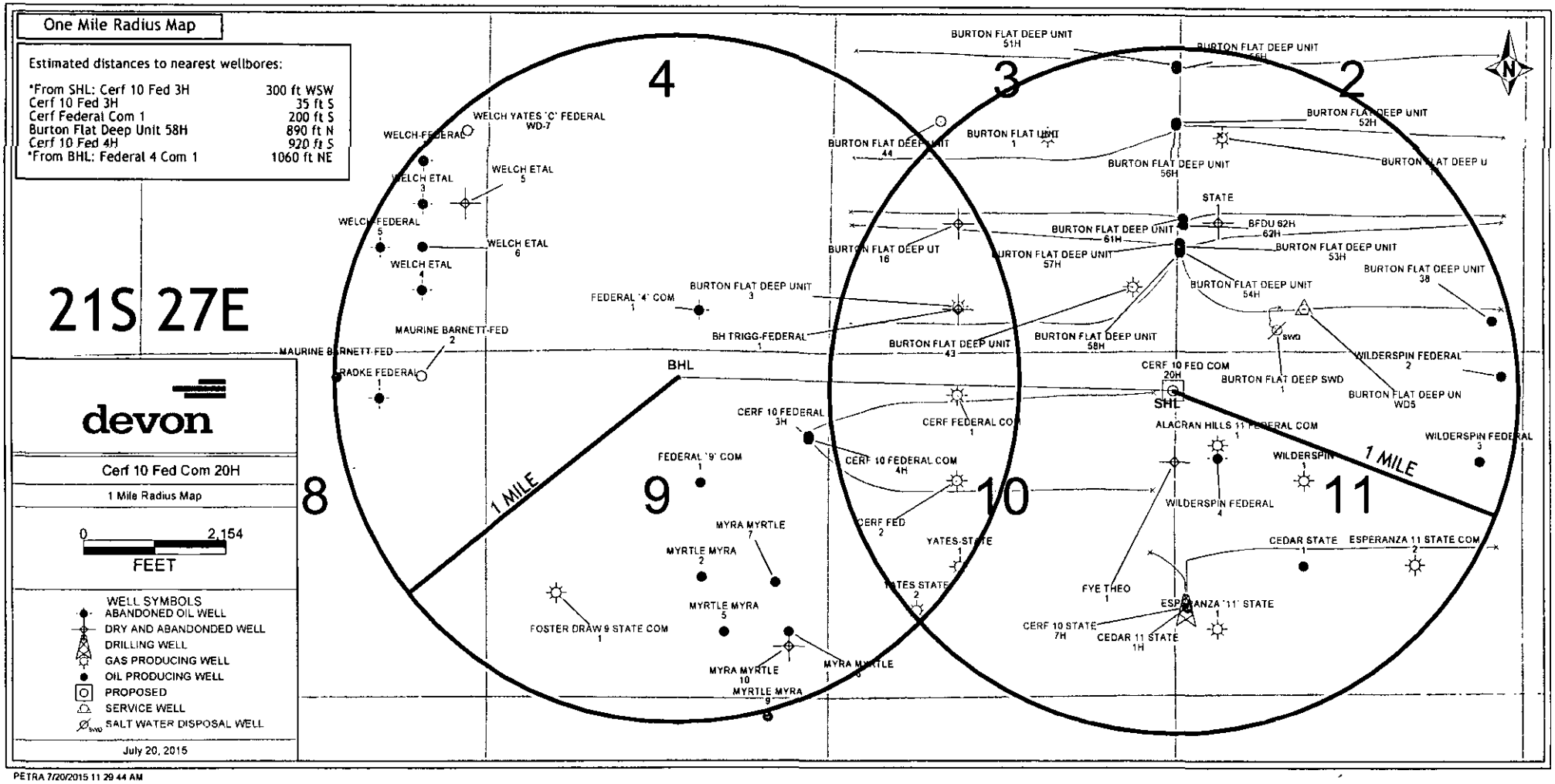

PETRA 7/20/2015 11 29 44 AM

1. Geologic Formations

TVD of target	7,235'	Pilot hole depth	N/A
MD at TD:	14,588'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary	0	Barren	
Rustler	45	Barren	
Salado	220	Barren	
Base of Salt	420	Barren	
Tansil	450	Barren	
Yates	530	Barren	
Capitan	780	Barren	
Capitan Base	2700	Barren	
Delaware	2830	Oil	
Lower Brushy Canyon	5100	Oil	
1st Bone Sping Lime	5275	Oil	
1st Bone Spring Sand	6520	Oil	
2nd Bone Spring Lime	6750	Oil	
2nd Bone Spring Sand	7200	Oil	

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program See COA

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
26"	0	~~200'~~ 360	20"	94	J-55	BTC	5.81	23.59	41.70
17.5"	0'	~~775'~~ 720	13.375	48	H-40	STC	1.78	4.01	8.89
12.25"	0'	2,800'	9.625"	36	J-55	LTC	1.54	2.69	3.91
8.75	0'	14,588'	5.5"	17	P-110	LTC	1.98	2.83	1.79
KOP = 6,594' DV Tool = 700' DV Tool = 2,850'				BLM Minimum Safety Factor			1.125	1.00	1.6 Dry 1.8 Wet

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

Must have table for contingency casing

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

3. Cementing Program

See COA

Casing	# Sks	Wt. lb/ gal	H_2O gal/sk	Yld ft3/ sack	500# Comp. Strength (hours)	Slurry Description
20" Surface Casing	455	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
13-3/8" Inter. I	780	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter. II	600	12.9	9.81	1.85	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	220	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter. II Two Stage	440	12.9	9.81	1.85	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	220	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
	DV Tool = ~~700ft~~ 770'					
	220	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
5-1/2" Prod Single Stage	760	11.9	12.89	2.31	n/a	Lead: (50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000
	2110	14.5	5.31	1.2	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
5-1/2" Prod Two Stage	520	11.9	12.89	2.31	n/a	1st Stage Lead: (50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000
	2110	14.5	5.31	1.2	25	1st Stage Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
	DV Tool = 2850ft					
	200	11	14.81	2.55	22	2nd Stage Lead: Tuned Light® Cement + 0.125 lb/sk Pol-E-Flake
	50	14.8	6.32	1.33	6	2nd Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake

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

Casing String	TOC	% Excess
20" Surface	0'	100%
13-3/8" Intermediate I	0'	100%
9-5/8" Intermediate II	0' 770'	75%
9-5/8" Intermediate II Casing Two Stage Option	1st Stage = ~~700'~~ / 2nd Stage = 0'	75%
5-1/2" Production Casing Single Stage Option	700'	25%
5-1/2" Production Casing Two Stage Option	1st Stage = 2850' / 2nd Stage = 700'	25%

4. Pressure Control Equipment

See COA

Y	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		

*Specify if additional ram is utilized.

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

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

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
See COA Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
See COA Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi. • Wellhead will be installed by vendor's representatives. • If the welding is performed by a third party, vendors's representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. • Vendor representative will install the test plug for the initial BOP test. • Vendor will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. • If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. • Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. • Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.

	After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP. Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns. See attached schematic.

5. Mud Program See COA

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	~~200'~~ 360	FW	8.3-8.8	28-34	N/C
~~200'~~	~~775'~~ 720	Saturated Brine	10.0-10.2	28-34	N/C
~~775'~~	2,800'	FW	8.3-8.8	28-34	N/C
2,800	14,588'	Cut Brine	8.5-9.3	28-34	N/C

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

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

6. Logging and Testing Procedures See COA

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

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD

	PEX	

7. Drilling Conditions See COA

Condition	Specify what type and where?
BH Pressure at deepest TVD	3498 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

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

8. Other facets of operation

Is this a walking operation? No.
Will be pre-setting casing? No.

Attachments
_x_ Directional Plan
___ Other, describe

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Cerf 10 Federal 20H
Eddy Co, NM

Weatherford

Plan Data for Cerf 10 Federal 20 H

Plan Point Information:
Dogleg Severity Unit: °/100.00ft Position offsets from Slot centre

MD (USft)	Inc (°)	Az (°)	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)	VSec (USft)	DLS (DLSU)
0.00	0.00	0.00	0.00	0.00	-0.00	545802.80	591942.80	0.00	0.00
6594.00	0.00	0.00	6594.00	0.00	-0.00	545802.80	591942.80	0.00	0.00
6894.00	30.00	320.00	6880.48	58.80	-49.34	545861.60	591893.46	49.42	10.00
7614.85	90.94	270.08	7234.69	219.04	-600.21	546021.84	591342.59	600.51	10.00
14587.59	90.94	270.08	7120.00	228.20	-7572.00	546031.00	584370.80	7572.31	0.00

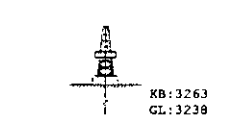
Plan Data for Cerf 10 Federal 20 H

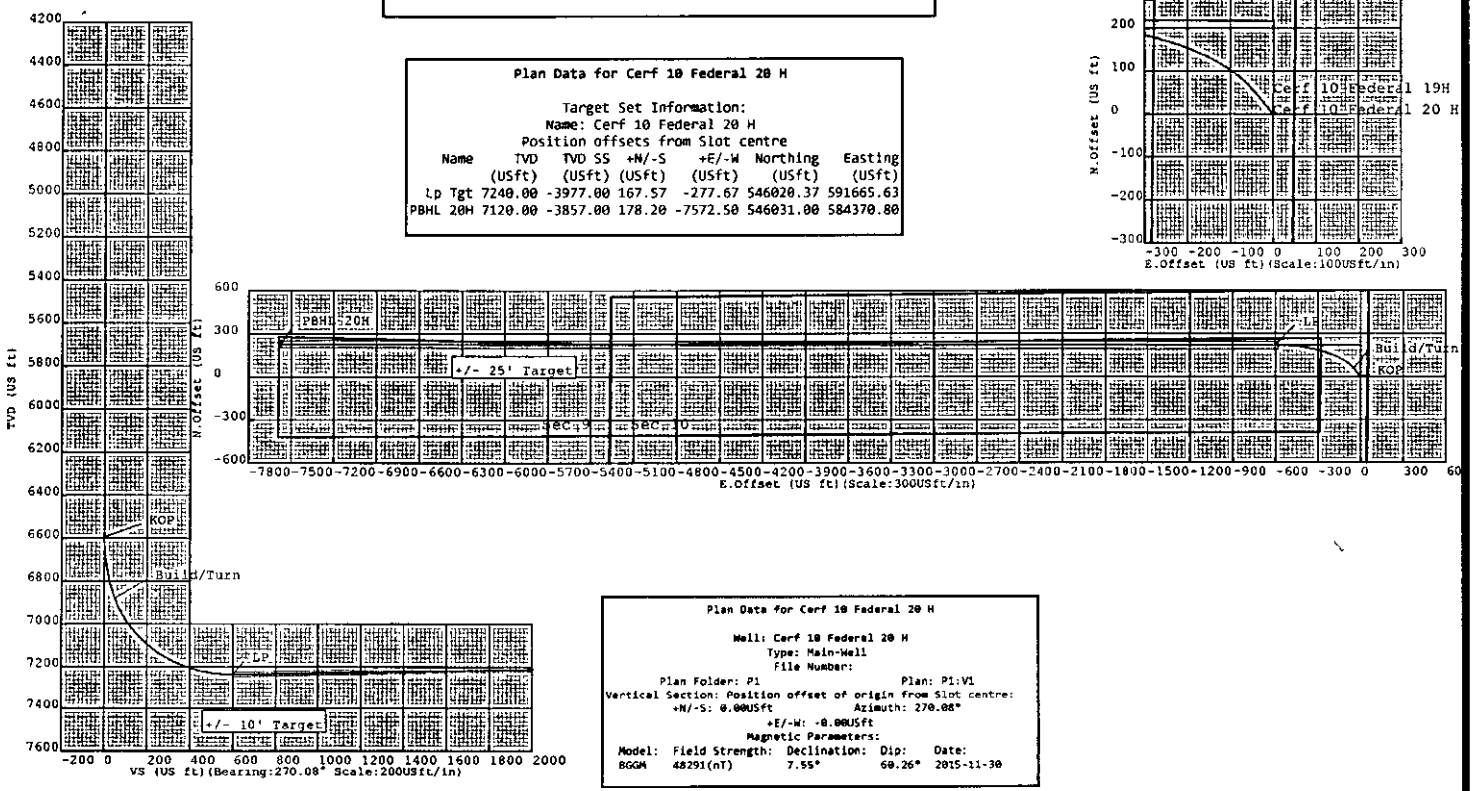
Slot: Cerf 10 Federal 20 H
Position:
Offset is from Site centre
+N/-S: -50.00USft Northing: 545802.80USft Latitude: 32.500366°
+E/-W: -0.50USft Easting: 591942.80USft Longitude: -104.169187°
Elevation Above VRD: 3238.00USft

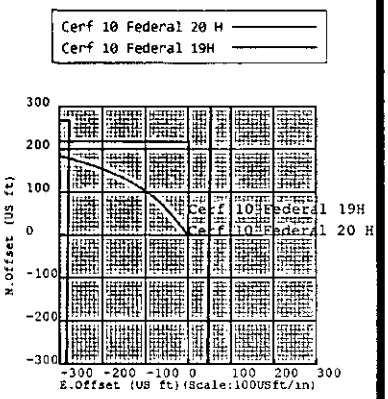
Plan Data for Cerf 10 Federal 20 H

Target Set Information:
Name: Cerf 10 Federal 20 H
Position offsets from Slot centre

Name	TVD (USft)	TVD SS (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)
Lp Tgt	7240.00	-3977.00	167.57	-277.67	546020.37	591665.63
PBHL 20H	7120.00	-3857.00	178.20	-7572.50	546031.00	584370.80



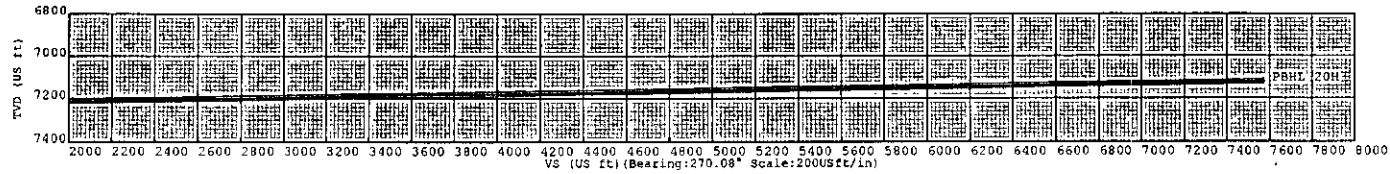




Plan Data for Cerf 10 Federal 20 H

Well: Cerf 10 Federal 20 H
Type: Main-Well
File Number:
Plan Folder: P1 Plan: P1:V1
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft Azimuth: 270.08°
+E/-W: -0.00USft
Magnetic Parameters:

Model:	Field Strength:	Declination:	Dip:	Date:
BGGM	48291(nT)	7.55°	60.26°	2015-11-30



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5D Plan Report

Devon Energy

Field Name: *Eddy Co, NM (Nad 83 NME)*
Site Name: *Cerf 10 Federal 19H, 20H Pad*
Well Name: *Cerf 10 Federal 20 H*
Plan: *P1:V1*

13 August 2015

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Cerf 10 Federal 20 H

Field Name: Eddy Co, NM (Nad 83 NME)

Map Units: US ft
Company Name: Devon Energy
Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: *NAD83 / New Mexico East (ftUS)*
Comment:

Site: Cerf 10 Federal 19H, 20H Pad

Units: US ft **North Reference:** Grid **Convergence Angle:** 0.09

Position: **Northing:** 545852.80US ft **Latitude:** 32° 30' 1.81"
Easting: 591943.30US ft **Longitude:** -104° 10' 9.06"

Elevation above MSL: 3238.00 US ft
Comment:

Slot: Cerf 10 Federal 20 H

Position (Relative to Site Centre)

+N/-S: -50.00US ft **Northing:** 545802.80US ft **Latitude:** 32°30'1.32"
+E/-W: -0.50US ft **Easting:** 591942.80US ft **Longitude:** -104°10'9.07"

Slot TVD Reference: Ground Elevation
Elevation above MSL: 3238.00US ft
Comment:

Well: Cerf 10 Federal 20 H

Type: Main well **UWI:** **Plan:** P1:V1
File Number: **Comment:**
Closure Distance: 7575.44US ft **Closure Azimuth:** 271.73°
Vertical Section: **Position of Origin (Relative to Slot centre)**
+N/-S: 0.00US ft **+E/-W:** -0.00US ft **Az:** 270.08°
Magnetic Parameters:
Model: BGGM **Field Strength:** 48291.2nT **Declination:** 7.55° **Dip:** 60.26° **Date:** 30/Nov/2015

Drill floor: Plan: P1:V1

Rig Height (Drill Floor): 25.00US ft **Elevation above MSL:** 3263.00US ft **Inclination:** 0.00° **Azimuth:** 0.00°

Target set: Cerf 10 Federal 20 H Comment:

Target Name	Shape	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (USFt)	Easting (USFt)	Comment
Lp Tgt	Point	7240.00	217.57	-277.17	546020.37	591665.63	
PBHL 20H	Point	7120.00	228.20	-7572.00	546031.00	584370.80	

Wellpath created using minimum curvature.

Tie Point:

MD: 0.00USFt **Inclination:** 0.00° **Azimuth:** 0.00° **TVD:** 0.00USFt **North Offset:** 0.00USFt **East Offset:** 0.00USFt

5D Plan Report

Salient Points: (Relative to Slot centre)(TVD relative to Drill Floor)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100US ft)	B.Rate (°/100US ft)	T.Rate (°/100US ft)	T.Face (°)	Comment
0.00	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	0.00	
6594.00	0.00	0.00	6594.00	0.00	-0.00	0.00	0.00	0.00	0.00	0.00	KOP
6894.00	30.00	320.00	6880.48	58.80	-49.34	49.42	10.00	10.00	0.00	320.00	Build/Turn
7614.85	90.94	270.08	7234.69	219.04	-600.21	600.51	10.00	8.45	-6.93	306.48	LP
14587.59	90.94	270.08	7120.00	228.20	-7572.00	7572.31	0.00	0.00	0.00	0.00	PBHL 20H

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment
6500.00	0.00	0.00	6500.00	0.00	-0.00	0.00	0.00	545802.80	591942.80	
6594.00	0.00	0.00	6594.00	0.00	-0.00	0.00	0.00	545802.80	591942.80	KOP
6600.00	0.60	320.00	6600.00	0.02	-0.02	0.02	10.00	545802.82	591942.78	
6700.00	10.60	320.00	6699.40	7.49	-6.28	6.30	10.00	545810.29	591936.52	
6800.00	20.60	320.00	6795.59	28.06	-23.55	23.59	10.00	545830.86	591919.25	
6894.00	30.00	320.00	6880.48	58.80	-49.34	49.42	10.00	545861.60	591893.46	Build/Turn
6900.00	30.36	319.05	6885.67	61.10	-51.30	51.38	10.00	545863.90	591891.50	
7000.00	37.20	305.84	6968.85	97.97	-92.47	92.61	10.00	545900.77	591850.33	
7100.00	45.08	296.45	7044.17	131.53	-148.82	149.01	10.00	545934.33	591793.98	
7200.00	53.55	289.41	7109.35	160.75	-218.63	218.86	10.00	545963.55	591724.17	
7300.00	62.35	283.79	7162.39	184.73	-299.78	300.04	10.00	545987.53	591643.02	
7400.00	71.34	279.02	7201.69	202.76	-389.81	390.09	10.00	546005.56	591552.99	
7500.00	80.44	274.73	7226.06	214.28	-485.98	486.28	10.00	546017.08	591456.82	
7600.00	89.58	270.67	7234.76	218.95	-585.36	585.67	10.00	546021.75	591357.44	
7614.85	90.94	270.08	7234.69	219.04	-600.21	600.51	10.00	546021.84	591342.59	LP
7700.00	90.94	270.08	7233.29	219.15	-685.35	685.65	0.00	546021.95	591257.45	
7800.00	90.94	270.08	7231.64	219.29	-785.34	785.64	0.00	546022.09	591157.46	
7900.00	90.94	270.08	7230.00	219.42	-885.32	885.63	0.00	546022.22	591057.48	
8000.00	90.94	270.08	7228.36	219.55	-985.31	985.61	0.00	546022.35	590957.49	
8100.00	90.94	270.08	7226.71	219.68	-1085.29	1085.60	0.00	546022.48	590857.51	
8200.00	90.94	270.08	7225.07	219.81	-1185.28	1185.59	0.00	546022.61	590757.52	
8300.00	90.94	270.08	7223.42	219.94	-1285.27	1285.57	0.00	546022.74	590657.53	
8400.00	90.94	270.08	7221.78	220.07	-1385.25	1385.56	0.00	546022.87	590557.55	
8500.00	90.94	270.08	7220.13	220.21	-1485.24	1485.55	0.00	546023.01	590457.56	
8600.00	90.94	270.08	7218.49	220.34	-1585.23	1585.53	0.00	546023.14	590357.57	
8700.00	90.94	270.08	7216.84	220.47	-1685.21	1685.52	0.00	546023.27	590257.59	
8800.00	90.94	270.08	7215.20	220.60	-1785.20	1785.51	0.00	546023.40	590157.60	
8900.00	90.94	270.08	7213.55	220.73	-1885.19	1885.49	0.00	546023.53	590057.61	
9000.00	90.94	270.08	7211.91	220.86	-1985.17	1985.48	0.00	546023.66	589957.63	
9100.00	90.94	270.08	7210.26	220.99	-2085.16	2085.47	0.00	546023.79	589857.64	
9200.00	90.94	270.08	7208.62	221.12	-2185.14	2185.45	0.00	546023.92	589757.66	
9300.00	90.94	270.08	7206.97	221.26	-2285.13	2285.44	0.00	546024.06	589657.67	
9400.00	90.94	270.08	7205.33	221.39	-2385.12	2385.42	0.00	546024.19	589557.68	
9500.00	90.94	270.08	7203.68	221.52	-2485.10	2485.41	0.00	546024.32	589457.70	
9600.00	90.94	270.08	7202.04	221.65	-2585.09	2585.40	0.00	546024.45	589357.71	
9700.00	90.94	270.08	7200.39	221.78	-2685.08	2685.38	0.00	546024.58	589257.72	
9800.00	90.94	270.08	7198.75	221.91	-2785.06	2785.37	0.00	546024.71	589157.74	
9900.00	90.94	270.08	7197.10	222.04	-2885.05	2885.36	0.00	546024.84	589057.75	
10000.00	90.94	270.08	7195.46	222.18	-2985.04	2985.34	0.00	546024.98	588957.76	
10100.00	90.94	270.08	7193.81	222.31	-3085.02	3085.33	0.00	546025.11	588857.78	
10200.00	90.94	270.08	7192.17	222.44	-3185.01	3185.32	0.00	546025.24	588757.79	
10300.00	90.94	270.08	7190.52	222.57	-3285.00	3285.30	0.00	546025.37	588657.80	
10400.00	90.94	270.08	7188.88	222.70	-3384.98	3385.29	0.00	546025.50	588557.82	
10500.00	*90.94*	*270.08*	*7187.23*	*222.83*	*-3484.97*	*3485.28*	*0.00*	*546025.63*	*588457.83*	
10600.00	90.94	270.08	7185.59	222.96	-3584.95	3585.26	0.00	546025.76	588357.85	
10700.00	90.94	270.08	7183.94	223.09	-3684.94	3685.25	0.00	546025.89	588257.86	
10800.00	90.94	270.08	7182.30	223.23	-3784.93	3785.24	0.00	546026.03	588157.87	
10900.00	90.94	270.08	7180.65	223.36	-3884.91	3885.22	0.00	546026.16	588057.89	
11000.00	90.94	270.08	7179.01	223.49	-3984.90	3985.21	0.00	546026.29	587957.90	
11100.00	90.94	270.08	7177.37	223.62	-4084.89	4085.19	0.00	546026.42	587857.91	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment
11200.00	90.94	270.08	7175.72	223.75	-4184.87	4185.18	0.00	546026.55	587757.93	
11300.00	90.94	270.08	7174.08	223.88	-4284.86	4285.17	0.00	546026.68	587657.94	
11400.00	90.94	270.08	7172.43	224.01	-4384.85	4385.15	0.00	546026.81	587557.95	
11500.00	90.94	270.08	7170.79	224.15	-4484.83	4485.14	0.00	546026.95	587457.97	
11600.00	90.94	270.08	7169.14	224.28	-4584.82	4585.13	0.00	546027.08	587357.98	
11700.00	90.94	270.08	7167.50	224.41	-4684.80	4685.11	0.00	546027.21	587258.00	
11800.00	90.94	270.08	7165.85	224.54	-4784.79	4785.10	0.00	546027.34	587158.01	
11900.00	90.94	270.08	7164.21	224.67	-4884.78	4885.09	0.00	546027.47	587058.02	
12000.00	90.94	270.08	7162.56	224.80	-4984.76	4985.07	0.00	546027.60	586958.04	
12100.00	90.94	270.08	7160.92	224.93	-5084.75	5085.06	0.00	546027.73	586858.05	
12200.00	90.94	270.08	7159.27	225.06	-5184.74	5185.05	0.00	546027.86	586758.06	
12300.00	90.94	270.08	7157.63	225.20	-5284.72	5285.03	0.00	546028.00	586658.08	
12400.00	90.94	270.08	7155.98	225.33	-5384.71	5385.02	0.00	546028.13	586558.09	
12500.00	90.94	270.08	7154.34	225.46	-5484.70	5485.01	0.00	546028.26	586458.10	
12600.00	90.94	270.08	7152.69	225.59	-5584.68	5584.99	0.00	546028.39	586358.12	
12700.00	90.94	270.08	7151.05	225.72	-5684.67	5684.98	0.00	546028.52	586258.13	
12800.00	90.94	270.08	7149.40	225.85	-5784.65	5784.96	0.00	546028.65	586158.15	
12900.00	90.94	270.08	7147.76	225.98	-5884.64	5884.95	0.00	546028.78	586058.16	
13000.00	90.94	270.08	7146.11	226.12	-5984.63	5984.94	0.00	546028.92	585958.17	
13100.00	90.94	270.08	7144.47	226.25	-6084.61	6084.92	0.00	546029.05	585858.19	
13200.00	90.94	270.08	7142.82	226.38	-6184.60	6184.91	0.00	546029.18	585758.20	
13300.00	90.94	270.08	7141.18	226.51	-6284.59	6284.90	0.00	546029.31	585658.21	
13400.00	90.94	270.08	7139.53	226.64	-6384.57	6384.88	0.00	546029.44	585558.23	
13500.00	90.94	270.08	7137.89	226.77	-6484.56	6484.87	0.00	546029.57	585458.24	
13600.00	90.94	270.08	7136.24	226.90	-6584.55	6584.86	0.00	546029.70	585358.25	
13700.00	90.94	270.08	7134.60	227.03	-6684.53	6684.84	0.00	546029.83	585258.27	
13800.00	90.94	270.08	7132.95	227.17	-6784.52	6784.83	0.00	546029.97	585158.28	
13900.00	90.94	270.08	7131.31	227.30	-6884.50	6884.82	0.00	546030.10	585058.30	
14000.00	90.94	270.08	7129.66	227.43	-6984.49	6984.80	0.00	546030.23	584958.31	
14100.00	90.94	270.08	7128.02	227.56	-7084.48	7084.79	0.00	546030.36	584858.32	
14200.00	90.94	270.08	7126.38	227.69	-7184.46	7184.78	0.00	546030.49	584758.34	
14300.00	90.94	270.08	7124.73	227.82	-7284.45	7284.76	0.00	546030.62	584658.35	
14400.00	90.94	270.08	7123.09	227.95	-7384.44	7384.75	0.00	546030.75	584558.36	
14500.00	90.94	270.08	7121.44	228.08	-7484.42	7484.73	0.00	546030.88	584458.38	
14587.59	90.94	270.08	7120.00	228.20	-7572.00	7572.31	0.00	546031.00	584370.80	PBHL 20H

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5D Anti-Collision Report

[redacted]

Devon Energy

Field Name: *Eddy Co, NM (Nad 83 NME)*
Site Name: *Cerf 10 Federal 19H, 20H Pad*
Well Name: *Cerf 10 Federal 20 H*

[redacted]

13 August 2015

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Cerf 10 Federal 20 H

Field Name: Eddy Co, NM (Nad 83 NME)

Map Units: US ft **Company Name:** Devon Energy

Vertical Reference Datum (VRD): Mean Sea Level

Projected Coordinate System: NAD83 / New Mexico East (ftUS)

Comment:

Site: Cerf 10 Federal 19H, 20H Pad

Units: US ft **North Reference:** Grid **Convergence Angle:** 0.09

Position: **Northing:** 545852.80US ft **Latitude:** 32° 30' 1.81"

Easting: 591943.30US ft **Longitude:** -104° 10' 9.06"

Elevation above MSL: 3238.00 US ft

Comment:

Slot: Cerf 10 Federal 20 H

Position (Relative to Site Centre)

+N/-S: -50.00US ft **Northing:** 545802.80US ft **Latitude:** 32°30'1.32"

+E/-W: -0.50US ft **Easting:** 591942.80US ft **Longitude:** -104°10'9.07"

Slot TVD Reference: Ground Elevation

Elevation above MSL: 3238.00US ft

Comment:

Well: Cerf 10 Federal 20 H

Type: Main well **UWI:** **Plan:** Working Plan

File Number: **Comment:**

Closure Distance: 7575.44US ft **Closure Azimuth:** 271.73°

Vertical Section: Position of Origin (Relative to Slot centre)

+N/-S: 0.00US ft **+E/-W:** -0.00US ft **Az:** 270.08°

Magnetic Parameters:

Model: BGGM **Field Strength:** 48291.2nT **Declination:** 7.55° **Dip:** 60.26° **Date:** 30/Nov/2015

Drill floor: Plan: Working Plan

Rig Height (Drill Floor): 25.00US ft **Elevation above MSL:** 3263.00US ft **Inclination:** 0.00° **Azimuth:** 0.00°

Collision / Uncertainty Analysis

Primary Well	Start MD (USFt)	End MD (USFt)	Collision Risk Interval	No. of Std. Deviations in Error Computation
Cerf 10 Federal 20 H (p)	0.00	14587.59	100.00	2

Secondary Well Names:

Cerf 10 Federal 19H (p)

Anti-Collision Report Terminology

S.Minor, S.Major: Radii of the ellipse of uncertainty at the current location as seen in the along hole direction.

PHI: Angle between high-side vector and semi-minor axis

TVD Spread: Total TVD range of the ellipsoid of uncertainty at the current location.

ES: Distance between the extremities of the primary and secondary uncertainty ellipsoids in the direction Cr-Cr.

T.Face to Sec: Angle between the Hi-Side vector of the primary well at the current location and line of closest approach between the two wells.

5D Anti-Collision Report

AC Filter Info: No filter has been applied.

Separation factors calculated using Pedal Curve (Independent Uncertainty). Surface Uncertainty (S.U.) Not Applied. Wellpath created using minimum curvature.

Anti-Collision Summary (TVD relative to Drill Floor)

SF

Secondary Well Name	Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	ES (US ft)	CC (US ft)	SF	Risk
Cerf 10 Federal 19H (p)	14587.59	7120.00	14830.21	168.18	280.00	2.50	

Primary Well: Cerf 10 Federal 20 H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)

MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	TVD Spread (US ft)	Nearest Well	ES (US ft)	CC (US ft)	SF	Risk
0.00	0.00	0.57	0.00	0.00	0.00	Cerf 10 Federal 19H (p)	49.44	50.00	88.24	
100.00	100.00	0.57	0.11	0.11	4.60	Cerf 10 Federal 19H (p)	49.22	50.00	63.51	
200.00	200.00	0.57	0.34	0.34	4.62	Cerf 10 Federal 19H (p)	48.77	50.00	40.43	
300.00	300.00	0.57	0.56	0.56	4.65	Cerf 10 Federal 19H (p)	48.32	50.00	29.65	
400.00	400.00	0.57	0.79	0.79	4.69	Cerf 10 Federal 19H (p)	47.87	50.00	23.41	
500.00	500.00	0.57	1.01	1.01	4.75	Cerf 10 Federal 19H (p)	47.42	50.00	19.34	
600.00	600.00	0.57	1.24	1.24	4.81	Cerf 10 Federal 19H (p)	46.97	50.00	16.48	
700.00	700.00	0.57	1.46	1.46	4.88	Cerf 10 Federal 19H (p)	46.52	50.00	14.35	
800.00	800.00	0.57	1.69	1.69	4.97	Cerf 10 Federal 19H (p)	46.07	50.00	12.71	
900.00	900.00	0.57	1.91	1.91	5.06	Cerf 10 Federal 19H (p)	45.62	50.00	11.41	
1000.00	1000.00	0.57	2.14	2.14	5.16	Cerf 10 Federal 19H (p)	45.17	50.00	10.35	
1100.00	1100.00	0.57	2.36	2.36	5.26	Cerf 10 Federal 19H (p)	44.72	50.00	9.47	
1200.00	1200.00	0.57	2.59	2.59	5.38	Cerf 10 Federal 19H (p)	44.27	50.00	8.72	
1300.00	1300.00	0.57	2.81	2.81	5.49	Cerf 10 Federal 19H (p)	43.82	50.00	8.09	
1400.00	1400.00	0.57	3.03	3.03	5.62	Cerf 10 Federal 19H (p)	43.37	50.00	7.54	
1500.00	1500.00	0.57	3.26	3.26	5.75	Cerf 10 Federal 19H (p)	42.92	50.00	7.06	
1600.00	1600.00	0.57	3.48	3.48	5.88	Cerf 10 Federal 19H (p)	42.47	50.00	6.64	
1700.00	1700.00	0.57	3.71	3.71	6.02	Cerf 10 Federal 19H (p)	42.02	50.00	6.27	
1800.00	1800.00	0.57	3.93	3.93	6.16	Cerf 10 Federal 19H (p)	41.57	50.00	5.93	
1900.00	1900.00	0.57	4.16	4.16	6.31	Cerf 10 Federal 19H (p)	41.12	50.00	5.63	
2000.00	2000.00	0.57	4.38	4.38	6.46	Cerf 10 Federal 19H (p)	40.67	50.00	5.36	

5D Anti-Collision Report

Primary Well: Cerf 10 Federal 20 H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)										
MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	TVD Spread (US ft)	Nearest Well	ES (US ft)	CC (US ft)	SF	Risk
2100.00	2100.00	0.57	4.61	4.61	6.62	Cerf 10 Federal 19H (p)	40.22	50.00	5.11	
2200.00	2200.00	0.57	4.83	4.83	6.77	Cerf 10 Federal 19H (p)	39.77	50.00	4.89	
2300.00	2300.00	0.57	5.06	5.06	6.94	Cerf 10 Federal 19H (p)	39.33	50.00	4.68	
2400.00	2400.00	0.57	5.28	5.28	7.10	Cerf 10 Federal 19H (p)	38.88	50.00	4.49	
2500.00	2500.00	0.57	5.51	5.51	7.27	Cerf 10 Federal 19H (p)	38.43	50.00	4.32	
2600.00	2600.00	0.57	5.73	5.73	7.44	Cerf 10 Federal 19H (p)	37.98	50.00	4.16	
2700.00	2700.00	0.57	5.96	5.96	7.61	Cerf 10 Federal 19H (p)	37.53	50.00	4.01	
2800.00	2800.00	0.57	6.18	6.18	7.78	Cerf 10 Federal 19H (p)	37.08	50.00	3.87	
2900.00	2900.00	0.57	6.41	6.41	7.96	Cerf 10 Federal 19H (p)	36.63	50.00	3.74	
3000.00	3000.00	0.57	6.63	6.63	8.14	Cerf 10 Federal 19H (p)	36.18	50.00	3.62	
3100.00	3100.00	0.57	6.86	6.86	8.33	Cerf 10 Federal 19H (p)	35.73	50.00	3.50	
3200.00	3200.00	0.57	7.08	7.08	8.51	Cerf 10 Federal 19H (p)	35.28	50.00	3.40	
3300.00	3300.00	0.57	7.31	7.31	8.70	Cerf 10 Federal 19H (p)	34.83	50.00	3.30	
3400.00	3400.00	0.57	7.53	7.53	8.89	Cerf 10 Federal 19H (p)	34.38	50.00	3.20	
3500.00	3500.00	0.57	7.76	7.76	9.09	Cerf 10 Federal 19H (p)	33.93	50.00	3.11	
3600.00	3600.00	0.57	7.98	7.98	9.29	Cerf 10 Federal 19H (p)	33.48	50.00	3.03	
3700.00	3700.00	0.57	8.20	8.20	9.49	Cerf 10 Federal 19H (p)	33.03	50.00	2.95	
3800.00	3800.00	0.57	8.43	8.43	9.69	Cerf 10 Federal 19H (p)	32.58	50.00	2.87	
3900.00	3900.00	0.57	8.65	8.65	9.90	Cerf 10 Federal 19H (p)	32.13	50.00	2.80	
4000.00	4000.00	0.57	8.88	8.88	10.11	Cerf 10 Federal 19H (p)	31.68	50.00	2.73	
4100.00	4100.00	0.57	9.10	9.10	10.32	Cerf 10 Federal 19H (p)	31.23	50.00	2.66	
4200.00	4200.00	0.57	9.33	9.33	10.54	Cerf 10 Federal 19H (p)	30.78	50.00	2.60	
4300.00	4300.00	0.57	9.55	9.55	10.76	Cerf 10 Federal 19H (p)	30.33	50.00	2.54	
4400.00	4400.00	0.57	9.78	9.78	10.98	Cerf 10 Federal 19H (p)	30.60	50.70	2.52	
4500.00	4500.00	0.54	10.00	10.00	11.21	Cerf 10 Federal 19H (p)	32.59	53.12	2.59	
4600.00	*4600.00*	*0.50*	*10.23*	*10.23*	*11.44*	*Cerf 10 Federal 19H (p)*	*36.31*	*57.27*	2.73	

Primary Well: Cerf 10 Federal 20 H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)									
MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	TVD Spread (US ft)	Nearest Well	ES (US ft)	CC (US ft)	SF Risk
4700.00	4700.00	0.45	10.45	10.45	11.67	Cerf 10 Federal 19H (p)	41.77	63.15	2.95
4800.00	4800.00	0.41	10.68	10.68	11.91	Cerf 10 Federal 19H (p)	48.93	70.74	3.24
4900.00	4900.00	0.36	10.90	10.90	12.15	Cerf 10 Federal 19H (p)	57.16	79.43	3.57
5000.00	5000.00	0.33	11.13	11.13	12.39	Cerf 10 Federal 19H (p)	65.44	88.15	3.88
5100.00	5100.00	0.30	11.35	11.35	12.64	Cerf 10 Federal 19H (p)	73.69	96.86	4.18
5200.00	5200.00	0.27	11.58	11.58	12.89	Cerf 10 Federal 19H (p)	81.96	105.58	4.47
5300.00	5300.00	0.25	11.80	11.80	13.15	Cerf 10 Federal 19H (p)	90.24	114.29	4.75
5400.00	5400.00	0.23	12.03	12.03	13.41	Cerf 10 Federal 19H (p)	98.53	123.01	5.03
5500.00	5500.00	0.22	12.25	12.25	13.67	Cerf 10 Federal 19H (p)	106.79	131.72	5.28
5600.00	5600.00	0.20	12.48	12.48	13.94	Cerf 10 Federal 19H (p)	115.05	140.44	5.53
5700.00	5700.00	0.19	12.70	12.70	14.21	Cerf 10 Federal 19H (p)	123.31	149.15	5.77
5800.00	5800.00	0.18	12.93	12.93	14.49	Cerf 10 Federal 19H (p)	131.57	157.87	6.00
5900.00	5900.00	0.17	13.15	13.15	14.77	Cerf 10 Federal 19H (p)	139.83	166.59	6.23
6000.00	6000.00	0.16	13.37	13.37	15.06	Cerf 10 Federal 19H (p)	148.09	175.30	6.44
6100.00	6100.00	0.16	13.60	13.60	15.35	Cerf 10 Federal 19H (p)	156.36	184.02	6.65
6200.00	6200.00	0.15	13.82	13.82	15.65	Cerf 10 Federal 19H (p)	164.62	192.73	6.86
6300.00	6300.00	0.14	14.05	14.05	15.95	Cerf 10 Federal 19H (p)	172.56	201.14	7.04
6400.00	6400.00	0.14	14.27	14.27	16.25	Cerf 10 Federal 19H (p)	178.89	207.89	7.17
6500.00	6500.00	0.13	14.50	14.50	16.56	Cerf 10 Federal 19H (p)	183.41	212.85	7.23
6600.00	6600.00	40.13	14.72	14.72	16.87	Cerf 10 Federal 19H (p)	186.12	215.96	7.24
6700.00	6699.40	42.31	14.94	14.77	17.18	Cerf 10 Federal 19H (p)	179.71	209.93	6.95
6800.00	6795.59	49.12	15.16	14.50	17.45	Cerf 10 Federal 19H (p)	160.18	190.82	6.23
6900.00	6885.67	62.87	15.42	13.98	17.65	Cerf 10 Federal 19H (p)	133.50	164.63	5.29
7000.00	6968.85	93.01	15.74	13.50	17.90	Cerf 10 Federal 19H (p)	118.40	150.01	4.75
7100.00	7044.17	120.66	16.18	12.84	18.12	Cerf 10 Federal 19H (p)	126.09	157.83	4.97
7200.00	7109.35	143.18	16.79	12.05	18.34	Cerf 10 Federal 19H (p)	151.59	182.26	5.94

5D Anti-Collision Report

Primary Well: Cerf 10 Federal 20 H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)										
MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	TVD Spread (US ft)	Nearest Well	ES (US ft)	CC (US ft)	SF	Risk
7300.00	7162.39	159.93	17.64	11.23	18.61	Cerf 10 Federal 19H (p)	184.50	212.87	7.50	
7400.00	7201.69	171.28	18.74	10.51	18.93	Cerf 10 Federal 19H (p)	215.41	240.49	9.59	
7500.00	7226.06	177.87	20.08	10.03	19.35	Cerf 10 Federal 19H (p)	236.33	258.14	11.84	
7600.00	7234.76	180.17	21.60	9.93	19.85	Cerf 10 Federal 19H (p)	240.67	261.38	12.62	
7700.00	7233.29	180.18	23.45	10.20	20.45	Cerf 10 Federal 19H (p)	240.18	261.47	12.28	
7800.00	7231.64	180.17	25.50	10.54	21.13	Cerf 10 Federal 19H (p)	239.80	261.74	11.93	
7900.00	7230.00	180.17	27.66	10.92	21.88	Cerf 10 Federal 19H (p)	239.33	262.01	11.55	
8000.00	7228.36	180.17	29.93	11.33	22.71	Cerf 10 Federal 19H (p)	238.79	262.28	11.17	
8100.00	7226.71	180.17	32.27	11.77	23.59	Cerf 10 Federal 19H (p)	238.19	262.55	10.78	
8200.00	7225.07	180.16	34.67	12.25	24.54	Cerf 10 Federal 19H (p)	237.53	262.82	10.39	
8300.00	7223.42	180.16	37.12	12.74	25.53	Cerf 10 Federal 19H (p)	236.81	263.08	10.01	
8400.00	7221.78	180.16	39.61	13.26	26.56	Cerf 10 Federal 19H (p)	236.05	263.35	9.65	
8500.00	7220.13	180.15	42.13	13.80	27.64	Cerf 10 Federal 19H (p)	235.25	263.62	9.29	
8600.00	7218.49	180.15	44.68	14.35	28.75	Cerf 10 Federal 19H (p)	234.44	263.89	8.96	
8700.00	7216.84	180.15	47.26	14.93	29.89	Cerf 10 Federal 19H (p)	233.63	264.16	8.65	
8800.00	7215.20	180.15	49.85	15.51	31.06	Cerf 10 Federal 19H (p)	232.73	264.43	8.34	
8900.00	7213.55	180.14	52.46	16.11	32.25	Cerf 10 Federal 19H (p)	231.81	264.70	8.05	
9000.00	7211.91	180.14	55.09	16.71	33.46	Cerf 10 Federal 19H (p)	230.87	264.96	7.77	
9100.00	7210.26	180.14	57.72	17.33	34.70	Cerf 10 Federal 19H (p)	229.94	265.23	7.51	
9200.00	7208.62	180.14	60.37	17.96	35.95	Cerf 10 Federal 19H (p)	229.00	265.50	7.27	
9300.00	7206.97	180.13	63.03	18.59	37.22	Cerf 10 Federal 19H (p)	227.96	265.77	7.03	
9400.00	7205.33	180.13	65.69	19.23	38.50	Cerf 10 Federal 19H (p)	227.00	266.04	6.81	
9500.00	7203.68	180.13	68.36	19.88	39.79	Cerf 10 Federal 19H (p)	226.05	266.31	6.61	
9600.00	7202.04	180.13	71.04	20.53	41.10	Cerf 10 Federal 19H (p)	225.04	266.58	6.42	
9700.00	7200.39	180.12	73.72	21.19	42.41	Cerf 10 Federal 19H (p)	223.97	266.84	6.22	
9800.00	7198.75	180.12	76.41	21.85	43.74	Cerf 10 Federal 19H (p)	222.89	267.11	6.04	

5D Anti-Collision Report

Primary Well: Cerf 10 Federal 20 H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)										
MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	TVD Spread (US ft)	Nearest Well	ES (US ft)	CC (US ft)	SF	Risk
9900.00	7197.10	180.12	79.11	22.52	45.07	Cerf 10 Federal 19H (p)	221.82	267.38	5.87	
10000.00	7195.46	180.11	81.80	23.19	46.42	Cerf 10 Federal 19H (p)	220.74	267.65	5.71	
10100.00	7193.81	180.11	84.50	23.87	47.76	Cerf 10 Federal 19H (p)	219.66	267.92	5.55	
10200.00	7192.17	180.11	87.21	24.55	49.12	Cerf 10 Federal 19H (p)	218.57	268.19	5.40	
10300.00	7190.52	180.11	89.92	25.23	50.48	Cerf 10 Federal 19H (p)	217.47	268.46	5.27	
10400.00	7188.88	180.10	92.63	25.91	51.85	Cerf 10 Federal 19H (p)	216.38	268.72	5.13	
10500.00	7187.23	180.10	95.34	26.60	53.22	Cerf 10 Federal 19H (p)	215.27	268.99	5.01	
10600.00	7185.59	180.10	98.06	27.29	54.60	Cerf 10 Federal 19H (p)	214.16	269.26	4.89	
10700.00	7183.94	180.10	100.77	27.98	55.99	Cerf 10 Federal 19H (p)	213.05	269.53	4.77	
10800.00	7182.30	180.09	103.49	28.67	57.37	Cerf 10 Federal 19H (p)	211.94	269.80	4.66	
10900.00	7180.65	180.09	106.21	29.37	58.76	Cerf 10 Federal 19H (p)	210.82	270.07	4.56	
11000.00	7179.01	180.09	108.94	30.07	60.16	Cerf 10 Federal 19H (p)	209.69	270.34	4.46	
11100.00	7177.37	180.09	111.66	30.76	61.56	Cerf 10 Federal 19H (p)	208.57	270.61	4.36	
11200.00	7175.72	180.08	114.39	31.47	62.96	Cerf 10 Federal 19H (p)	207.44	270.87	4.27	
11300.00	7174.08	180.08	117.12	32.17	64.36	Cerf 10 Federal 19H (p)	206.30	271.14	4.18	
11400.00	7172.43	180.08	119.85	32.87	65.77	Cerf 10 Federal 19H (p)	205.17	271.41	4.10	
11500.00	7170.79	180.08	122.58	33.58	67.18	Cerf 10 Federal 19H (p)	204.03	271.68	4.02	
11600.00	7169.14	180.07	125.31	34.28	68.59	Cerf 10 Federal 19H (p)	202.89	271.95	3.94	
11700.00	7167.50	180.07	128.04	34.99	70.00	Cerf 10 Federal 19H (p)	201.75	272.22	3.86	
11800.00	7165.85	180.07	130.77	35.70	71.42	Cerf 10 Federal 19H (p)	200.60	272.49	3.79	
11900.00	7164.21	180.07	133.51	36.41	72.83	Cerf 10 Federal 19H (p)	199.45	272.75	3.72	
12000.00	7162.56	180.06	136.24	37.12	74.25	Cerf 10 Federal 19H (p)	198.31	273.02	3.65	
12100.00	7160.92	180.06	138.98	37.83	75.68	Cerf 10 Federal 19H (p)	197.15	273.29	3.59	
12200.00	7159.27	180.06	141.71	38.54	77.10	Cerf 10 Federal 19H (p)	196.00	273.56	3.53	
12300.00	7157.63	180.06	144.45	39.25	78.52	Cerf 10 Federal 19H (p)	194.85	273.83	3.47	
12400.00	7155.98	180.05	147.19	39.96	79.95	Cerf 10 Federal 19H (p)	193.69	274.10	3.41	

5D Anti-Collision Report

Primary Well: Cerf 10 Federal 20 H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)										
MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	TVD Spread (US ft)	Nearest Well	ES (US ft)	CC (US ft)	SF	Risk
12500.00	7154.34	180.05	149.93	40.68	81.38	Cerf 10 Federal 19H (p)	192.53	274.37	3.35	
12600.00	7152.69	180.05	152.67	41.39	82.81	Cerf 10 Federal 19H (p)	191.38	274.63	3.30	
12700.00	7151.05	180.05	155.41	42.11	84.24	Cerf 10 Federal 19H (p)	190.22	274.90	3.25	
12800.00	7149.40	180.04	158.15	42.82	85.67	Cerf 10 Federal 19H (p)	189.05	275.17	3.20	
12900.00	7147.76	180.04	160.89	43.54	87.10	Cerf 10 Federal 19H (p)	187.89	275.44	3.15	
13000.00	7146.11	180.04	163.63	44.26	88.54	Cerf 10 Federal 19H (p)	186.73	275.71	3.10	
13100.00	7144.47	180.04	166.37	44.98	89.97	Cerf 10 Federal 19H (p)	185.56	275.98	3.05	
13200.00	7142.82	180.03	169.11	45.69	91.41	Cerf 10 Federal 19H (p)	184.40	276.25	3.01	
13300.00	7141.18	180.03	171.86	46.41	92.84	Cerf 10 Federal 19H (p)	183.23	276.51	2.96	
13400.00	7139.53	180.03	174.60	47.13	94.28	Cerf 10 Federal 19H (p)	182.06	276.78	2.92	
13500.00	7137.89	180.03	177.34	47.85	95.72	Cerf 10 Federal 19H (p)	180.89	277.05	2.88	
13600.00	7136.24	180.02	180.09	48.57	97.16	Cerf 10 Federal 19H (p)	179.72	277.32	2.84	
13700.00	7134.60	180.02	182.83	49.29	98.60	Cerf 10 Federal 19H (p)	178.55	277.59	2.80	
13800.00	7132.95	180.02	185.57	50.01	100.04	Cerf 10 Federal 19H (p)	177.38	277.86	2.77	
13900.00	7131.31	180.02	188.32	50.73	101.48	Cerf 10 Federal 19H (p)	176.21	278.13	2.73	
14000.00	7129.66	180.01	191.06	51.45	102.92	Cerf 10 Federal 19H (p)	175.04	278.40	2.69	
14100.00	7128.02	180.01	193.81	52.18	104.37	Cerf 10 Federal 19H (p)	173.86	278.66	2.66	
14200.00	7126.38	180.01	196.56	52.90	105.81	Cerf 10 Federal 19H (p)	172.69	278.93	2.63	
14300.00	7124.73	180.01	199.30	53.62	107.26	Cerf 10 Federal 19H (p)	171.51	279.20	2.59	
14400.00	7123.09	180.00	202.05	54.34	108.70	Cerf 10 Federal 19H (p)	170.34	279.47	2.56	
14500.00	7121.44	180.00	204.79	55.06	110.15	Cerf 10 Federal 19H (p)	169.16	279.74	2.53	
14587.59	7120.00	180.00	207.20	55.70	111.41	Cerf 10 Federal 19H (p)	168.18	280.00	2.50	

Secondary Well: Cerf 10 Federal 19H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)										
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	TVD Spread (US ft)	ES (US ft)	CC (US ft)	SF	Risk
0.00	0.00	0.00	0.57	0.00	0.00	0.00	49.44	50.00	88.24	
100.00	100.00	100.00	0.57	0.11	0.11	4.60	49.22	50.00	63.51	
200.00	200.00	200.00	0.57	0.34	0.34	4.62	48.77	50.00	40.43	
300.00	300.00	300.00	0.57	0.56	0.56	4.65	48.32	50.00	29.65	
400.00	400.00	400.00	0.57	0.79	0.79	4.69	47.87	50.00	23.41	

SD Anti-Collision Report

Secondary Well: Cerf 10 Federal 19H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)										
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	TVD Spread (US ft)	ES (US ft)	CC (US ft)	SF	Risk
500.00	500.00	500.00	0.57	1.01	1.01	4.75	47.42	50.00	19.34	
600.00	600.00	600.00	0.57	1.24	1.24	4.81	46.97	50.00	16.48	
700.00	700.00	700.00	0.57	1.46	1.46	4.88	46.52	50.00	14.35	
800.00	800.00	800.00	0.57	1.69	1.69	4.97	46.07	50.00	12.71	
900.00	900.00	900.00	0.57	1.91	1.91	5.06	45.62	50.00	11.41	
1000.00	1000.00	1000.00	0.57	2.14	2.14	5.16	45.17	50.00	10.35	
1100.00	1100.00	1100.00	0.57	2.36	2.36	5.26	44.72	50.00	9.47	
1200.00	1200.00	1200.00	0.57	2.59	2.59	5.38	44.27	50.00	8.72	
1300.00	1300.00	1300.00	0.57	2.81	2.81	5.49	43.82	50.00	8.09	
1400.00	1400.00	1400.00	0.57	3.03	3.03	5.62	43.37	50.00	7.54	
1500.00	1500.00	1500.00	0.57	3.26	3.26	5.75	42.92	50.00	7.06	
1600.00	1600.00	1600.00	0.57	3.48	3.48	5.88	42.47	50.00	6.64	
1700.00	1700.00	1700.00	0.57	3.71	3.71	6.02	42.02	50.00	6.27	
1800.00	1800.00	1800.00	0.57	3.93	3.93	6.16	41.57	50.00	5.93	
1900.00	1900.00	1900.00	0.57	4.16	4.16	6.31	41.12	50.00	5.63	
2000.00	2000.00	2000.00	0.57	4.38	4.38	6.46	40.67	50.00	5.36	
2100.00	2100.00	2100.00	0.57	4.61	4.61	6.62	40.22	50.00	5.11	
2200.00	2200.00	2200.00	0.57	4.83	4.83	6.77	39.77	50.00	4.89	
2300.00	2300.00	2300.00	0.57	5.06	5.06	6.94	39.33	50.00	4.68	
2400.00	2400.00	2400.00	0.57	5.28	5.28	7.10	38.88	50.00	4.49	
2500.00	2500.00	2500.00	0.57	5.51	5.51	7.27	38.43	50.00	4.32	
2600.00	2600.00	2600.00	0.57	5.73	5.73	7.44	37.98	50.00	4.16	
2700.00	2700.00	2700.00	0.57	5.96	5.96	7.61	37.53	50.00	4.01	
2800.00	2800.00	2800.00	0.57	6.18	6.18	7.78	37.08	50.00	3.87	
2900.00	2900.00	2900.00	0.57	6.41	6.41	7.96	36.63	50.00	3.74	
3000.00	3000.00	3000.00	0.57	6.63	6.63	8.14	36.18	50.00	3.62	
3100.00	3100.00	3100.00	0.57	6.86	6.86	8.33	35.73	50.00	3.50	
3200.00	3200.00	3200.00	0.57	7.08	7.08	8.51	35.28	50.00	3.40	
3300.00	3300.00	3300.00	0.57	7.31	7.31	8.70	34.83	50.00	3.30	
3400.00	3400.00	3400.00	0.57	7.53	7.53	8.89	34.38	50.00	3.20	
3500.00	3500.00	3500.00	0.57	7.76	7.76	9.09	33.93	50.00	3.11	
3600.00	3600.00	3600.00	0.57	7.98	7.98	9.29	33.48	50.00	3.03	
3700.00	3700.00	3700.00	0.57	8.20	8.20	9.49	33.03	50.00	2.95	
3800.00	3800.00	3800.00	0.57	8.43	8.43	9.69	32.58	50.00	2.87	
3900.00	3900.00	3900.00	0.57	8.65	8.65	9.90	32.13	50.00	2.80	
4000.00	4000.00	4000.00	0.57	8.88	8.88	10.11	31.68	50.00	2.73	
4100.00	4100.00	4100.00	0.57	9.10	9.10	10.32	31.23	50.00	2.66	
4200.00	4200.00	4200.00	0.57	9.33	9.33	10.54	30.78	50.00	2.60	
4300.00	4300.00	4300.00	0.57	9.55	9.55	10.76	30.33	50.00	2.54	
4400.00	4399.21	4399.21	0.57	9.78	9.78	10.98	30.60	50.70	2.52	
4500.00	4498.25	4498.29	0.54	10.00	10.00	11.20	32.59	53.12	2.59	
4600.00	4597.13	4597.25	0.50	10.22	10.21	11.43	36.31	57.27	2.73	
4700.00	4695.75	4696.04	0.45	10.44	10.43	11.66	41.77	63.15	2.95	
4800.00	4794.02	4794.60	0.41	10.66	10.64	11.89	48.93	70.74	3.24	
4900.00	4893.08	4894.03	0.36	10.88	10.86	12.12	57.16	79.43	3.57	
5000.00	4992.32	4993.65	0.33	11.11	11.08	12.37	65.44	88.15	3.88	
5100.00	5091.56	5093.27	0.30	11.34	11.31	12.61	73.69	96.86	4.18	
5200.00	5190.80	5192.89	0.27	11.57	11.53	12.86	81.96	105.58	4.47	
5300.00	5290.04	5292.51	0.25	11.80	11.76	13.12	90.24	114.29	4.75	
5400.00	5389.28	5392.13	0.23	12.04	11.99	13.38	98.53	123.01	5.03	
5500.00	5488.52	5491.75	0.22	12.27	12.21	13.64	106.79	131.72	5.28	
5600.00	5587.76	5591.37	0.20	12.51	12.44	13.91	115.05	140.44	5.53	
5700.00	5687.00	5690.99	0.19	12.75	12.66	14.18	123.31	149.15	5.77	
5800.00	5786.24	5790.61	0.18	12.99	12.89	14.45	131.57	157.87	6.00	
5900.00	5885.48	5890.23	0.17	13.23	13.12	14.73	139.83	166.59	6.23	
6000.00	5984.72	5989.85	0.16	13.47	13.34	15.02	148.09	175.30	6.44	
6100.00	6083.96	6089.47	0.16	13.71	13.57	15.31	156.36	184.02	6.65	
6200.00	6183.20	6189.08	0.15	13.95	13.80	15.60	164.62	192.73	6.86	

5D Anti-Collision Report

Secondary Well: Cerf 10 Federal 19H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)										
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	TVD Spread (US ft)	ES (US ft)	CC (US ft)	SF	Risk
6300.00	6284.60	6290.84	0.14	14.18	14.02	15.91	172.56	201.14	7.04	
6400.00	6387.83	6394.31	0.14	14.38	14.20	16.22	178.89	207.89	7.17	
6500.00	6491.38	6497.99	0.13	14.57	14.39	16.54	183.41	212.85	7.23	
6600.00	6595.17	6601.83	40.13	14.76	14.57	16.87	186.12	215.96	7.24	
6700.00	6698.49	6705.16	42.31	14.94	14.74	17.20	179.71	209.93	6.95	
6800.00	6795.59	6802.26	49.12	15.12	14.93	17.52	160.18	190.82	6.23	
6900.00	6885.67	6892.34	62.87	15.32	15.13	17.81	133.50	164.63	5.29	
7000.00	6977.40	6984.16	93.01	15.47	15.33	18.11	118.40	150.01	4.75	
7100.00	7080.45	7089.17	120.66	15.55	15.32	18.44	126.09	157.83	4.97	
7200.00	7189.90	7207.27	143.18	15.83	14.76	18.75	151.59	182.26	5.94	
7300.00	7301.01	7342.37	159.93	16.32	13.70	19.05	184.50	212.87	7.50	
7400.00	7402.36	7497.27	171.28	17.25	12.18	19.38	215.41	240.49	9.59	
7500.00	7474.25	7670.56	177.87	19.15	10.71	19.88	236.33	258.14	11.84	
7600.00	7496.11	7846.50	180.17	21.92	10.28	20.61	240.67	261.38	12.62	
7700.00	7494.74	7946.50	180.18	23.81	10.56	21.17	240.18	261.47	12.28	
7800.00	7493.36	8046.50	180.17	25.83	10.87	21.79	239.80	261.74	11.93	
7900.00	7491.98	8146.50	180.17	27.98	11.23	22.50	239.33	262.01	11.55	
8000.00	7490.61	8246.50	180.17	30.23	11.62	23.27	238.79	262.28	11.17	
8100.00	7489.23	8346.50	180.17	32.56	12.04	24.12	238.19	262.55	10.78	
8200.00	7487.86	8446.50	180.16	34.95	12.49	25.01	237.53	262.82	10.39	
8300.00	7486.48	8546.50	180.16	37.39	12.96	25.96	236.81	263.08	10.01	
8400.00	7485.10	8646.50	180.16	39.87	13.46	26.96	236.05	263.35	9.65	
8500.00	7483.73	8746.50	180.15	42.39	13.98	28.00	235.25	263.62	9.29	
8600.00	7482.35	8846.50	180.15	44.93	14.52	29.07	234.44	263.89	8.96	
8700.00	7480.97	8946.50	180.15	47.50	15.07	30.18	233.63	264.16	8.65	
8800.00	7479.60	9046.50	180.15	50.09	15.64	31.32	232.73	264.43	8.34	
8900.00	7478.22	9146.50	180.14	52.69	16.22	32.48	231.81	264.70	8.05	
9000.00	7476.85	9246.50	180.14	55.31	16.82	33.67	230.87	264.96	7.77	
9100.00	7475.47	9346.50	180.14	57.95	17.42	34.88	229.94	265.23	7.51	
9200.00	7474.09	9446.50	180.14	60.59	18.04	36.11	229.00	265.50	7.27	
9300.00	7472.72	9546.50	180.13	63.24	18.66	37.35	227.96	265.77	7.03	
9400.00	7471.34	9646.50	180.13	65.90	19.29	38.62	227.00	266.04	6.81	
9500.00	7469.96	9746.50	180.13	68.57	19.93	39.89	226.05	266.31	6.61	
9600.00	7468.59	9846.50	180.13	71.25	20.57	41.18	225.04	266.58	6.42	
9700.00	7467.21	9946.49	180.12	73.93	21.22	42.48	223.97	266.84	6.22	
9800.00	7465.84	10046.49	180.12	76.62	21.88	43.79	222.89	267.11	6.04	
9900.00	7464.46	10146.49	180.12	79.31	22.54	45.11	221.82	267.38	5.87	
10000.00	7463.08	10246.49	180.11	82.00	23.20	46.43	220.74	267.65	5.71	
10100.00	7461.71	10346.49	180.11	84.70	23.87	47.77	219.66	267.92	5.55	
10200.00	7460.33	10446.49	180.11	87.40	24.54	49.12	218.57	268.19	5.40	
10300.00	7458.95	10546.49	180.11	90.11	25.22	50.47	217.47	268.46	5.27	
10400.00	7457.58	10646.49	180.10	92.82	25.90	51.82	216.38	268.72	5.13	
10500.00	7456.20	10746.49	180.10	95.53	26.58	53.19	215.27	268.99	5.01	
10600.00	7454.83	10846.49	180.10	98.25	27.26	54.55	214.16	269.26	4.89	
10700.00	7453.45	10946.49	180.10	100.96	27.95	55.93	213.05	269.53	4.77	
10800.00	7452.07	11046.49	180.09	103.68	28.64	57.31	211.94	269.80	4.66	
10900.00	7450.70	11146.49	180.09	106.40	29.33	58.69	210.82	270.07	4.56	
11000.00	7449.32	11246.49	180.09	109.12	30.02	60.07	209.69	270.34	4.46	
11100.00	7447.94	11346.49	180.09	111.85	30.72	61.46	208.57	270.61	4.36	
11200.00	7446.57	11446.49	180.08	114.57	31.42	62.86	207.44	270.87	4.27	
11300.00	7445.19	11546.49	180.08	117.30	32.12	64.25	206.30	271.14	4.18	
11400.00	7443.82	11646.49	180.08	120.03	32.82	65.65	205.17	271.41	4.10	
11500.00	7442.44	11746.49	180.08	122.76	33.52	67.06	204.03	271.68	4.02	
11600.00	7441.06	11846.49	180.07	125.49	34.22	68.46	202.89	271.95	3.94	
11700.00	7439.69	11946.49	180.07	128.22	34.92	69.87	201.75	272.22	3.86	
11800.00	7438.31	12046.49	180.07	130.95	35.63	71.28	200.60	272.49	3.79	
11900.00	7436.93	12146.49	180.07	133.68	36.34	72.69	199.45	272.75	3.72	
12000.00	7435.56	12246.49	180.06	136.42	37.04	74.11	198.31	273.02	3.65	

5D Anti-Collision Report

Secondary Well: Cerf 10 Federal 19H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)										
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	TVD Spread (US ft)	ES (US ft)	CC (US ft)	SF	Risk
12100.00	7434.18	12346.49	180.06	139.15	37.75	75.52	197.15	273.29	3.59	
12200.00	7432.81	12446.49	180.06	141.89	38.46	76.94	196.00	273.56	3.53	
12300.00	7431.43	12546.49	180.06	144.63	39.17	78.36	194.85	273.83	3.47	
12400.00	7430.05	12646.49	180.05	147.36	39.88	79.78	193.69	274.10	3.41	
12500.00	7428.68	12746.48	180.05	150.10	40.59	81.21	192.53	274.37	3.35	
12600.00	7427.30	12846.48	180.05	152.84	41.31	82.63	191.38	274.63	3.30	
12700.00	7425.92	12946.48	180.05	155.58	42.02	84.06	190.22	274.90	3.25	
12800.00	7424.55	13046.48	180.04	158.32	42.73	85.48	189.05	275.17	3.20	
12900.00	7423.17	13146.48	180.04	161.06	43.45	86.91	187.89	275.44	3.15	
13000.00	7421.80	13246.48	180.04	163.80	44.16	88.34	186.73	275.71	3.10	
13100.00	7420.42	13346.48	180.04	166.54	44.88	89.78	185.56	275.98	3.05	
13200.00	7419.04	13446.48	180.03	169.28	45.59	91.21	184.40	276.25	3.01	
13300.00	7417.67	13546.48	180.03	172.03	46.31	92.64	183.23	276.51	2.96	
13400.00	7416.29	13646.48	180.03	174.77	47.03	94.08	182.06	276.78	2.92	
13500.00	7414.91	13746.48	180.03	177.51	47.75	95.51	180.89	277.05	2.88	
13600.00	7413.54	13846.48	180.02	180.26	48.47	96.95	179.72	277.32	2.84	
13700.00	7412.16	13946.48	180.02	183.00	49.18	98.39	178.55	277.59	2.80	
13800.00	7410.79	14046.48	180.02	185.74	49.90	99.82	177.38	277.86	2.77	
13900.00	7409.41	14146.48	180.02	188.49	50.62	101.26	176.21	278.13	2.73	
14000.00	7408.03	14246.48	180.01	191.23	51.34	102.70	175.04	278.40	2.69	
14100.00	7406.66	14346.48	180.01	193.98	52.06	104.14	173.86	278.66	2.66	
14200.00	7405.28	14446.48	180.01	196.72	52.78	105.58	172.69	278.93	2.63	
14300.00	7403.90	14546.48	180.01	199.47	53.51	107.03	171.51	279.20	2.59	
14400.00	7402.53	14646.48	180.00	202.22	54.23	108.47	170.34	279.47	2.56	
14500.00	7401.15	14746.48	180.00	204.96	54.95	109.91	169.16	279.74	2.53	
14587.59	7400.00	14830.21	180.00	207.26	55.55	111.12	168.18	280.00	2.50	

Weatherford

Weatherford Drilling Services

GeoDec4 v2.1.0.0

Report Date:	August 13, 2015
Job Number:	
Customer:	Devon Energy
Well Name:	Cerf 10 Federal 19H
API Number:	
Rig Name:	
Location:	Eddy Co, NM Nad83 NME
Block:	
Engineer:	RWJ

NAD83 / New Mexico East (ftUS)	NAD83 (1986)
Projected Coordinate System	Geodetic Coordinate System
Datum: North American Datum 1983 (1986)	Datum: North American Datum 1983 (1986)
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
EPSG: 2257	EPSG: 4269
North: 545802.80 US Survey Foot	Latitude: 32.500366 Degree
East: 591942.80 US Survey Foot	Longitude: -104.169187 Degree
Convergence: 0.09°	
Declination: 7.55°	
Total Correction: 7.46°	
Datum Transformation: none	

Geodetic Location WGS84

MSL Elevation	=	0 m
Latitude	=	32° 30' 01.32" N
Longitude	=	104° 10' 09.07" W

Magnetic Declination	=	7.55 deg	[True North Offset]		
Local Gravity	=	.9988 g	CheckSum	=	6622
Local Field Strength	=	48291 nT	Magnetic Vector X	=	23744 nT
Magnetic Dip	=	60.26 deg	Magnetic Vector Y	=	3148 nT
Magnetic Model	=	bggm2015.dat	Magnetic Vector Z	=	41932 nT
Run Date	=	November 30, 2015	Magnetic Vector H	=	23952 nT

Signed:_____ Date:_____

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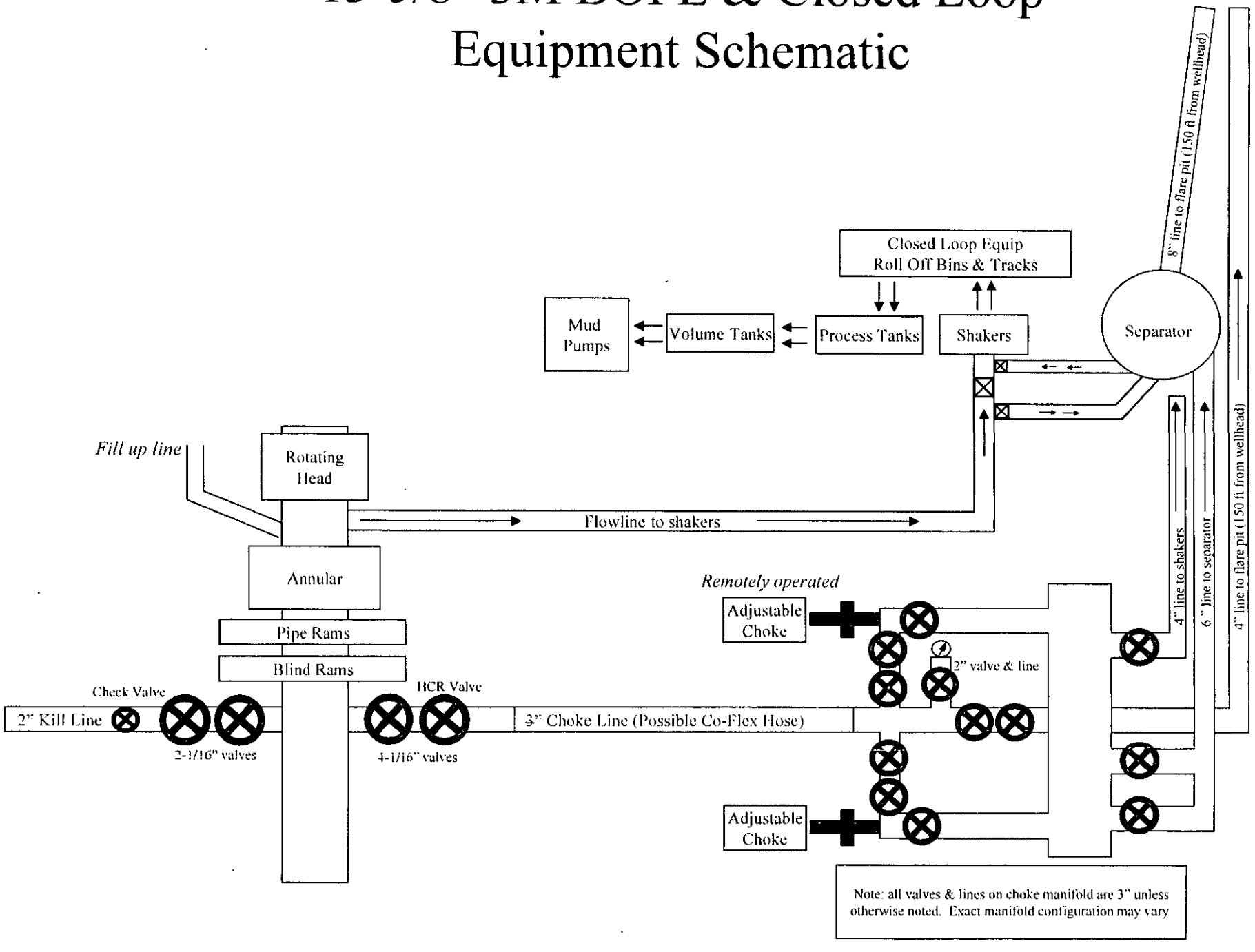
13-5/8" 3M BOPE & Closed Loop Equipment Schematic



NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, L.P.
CERF 10 FED COM 20H

1. Drilling Nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.

2. Wear ring will be properly installed in head.

3. Blowout preventer and all associated filings will be in operable condition to withstand a minimum of 3000psi working pressure.

4. All fittings will be flanged.

5. A fill bore safety valve tested to a minimum of 3000psi WP with proper thread connections will be available on the rotary rig floor at all times.

6. All choke lines will be anchored to prevent movement.

7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.

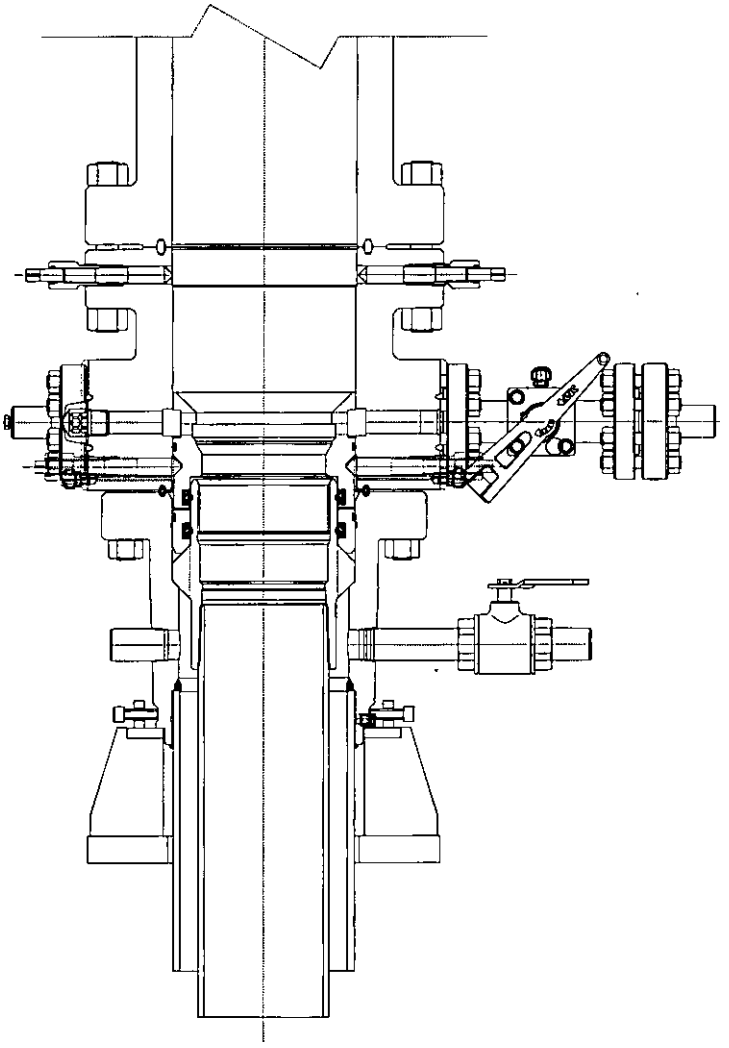
8. Will maintain a kelly cock attached to the kelly.

9. Hand wheels and wrenches will be properly installed and tested for safe operation.

10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.

11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

FMC Technologies



PRIMARY MODE

DEVON ENERGY

ARTESIA
S.E.N.M
13 3/8 X 9 5/8

QUOTE LAYOUT
F18648
REF: DM100161737
DM100151315

PRIVATE AND CONFIDENTIAL
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REVISIONS	
A	05-08-13
B	1-22-14
C	5-13-14

DESCRIPTION

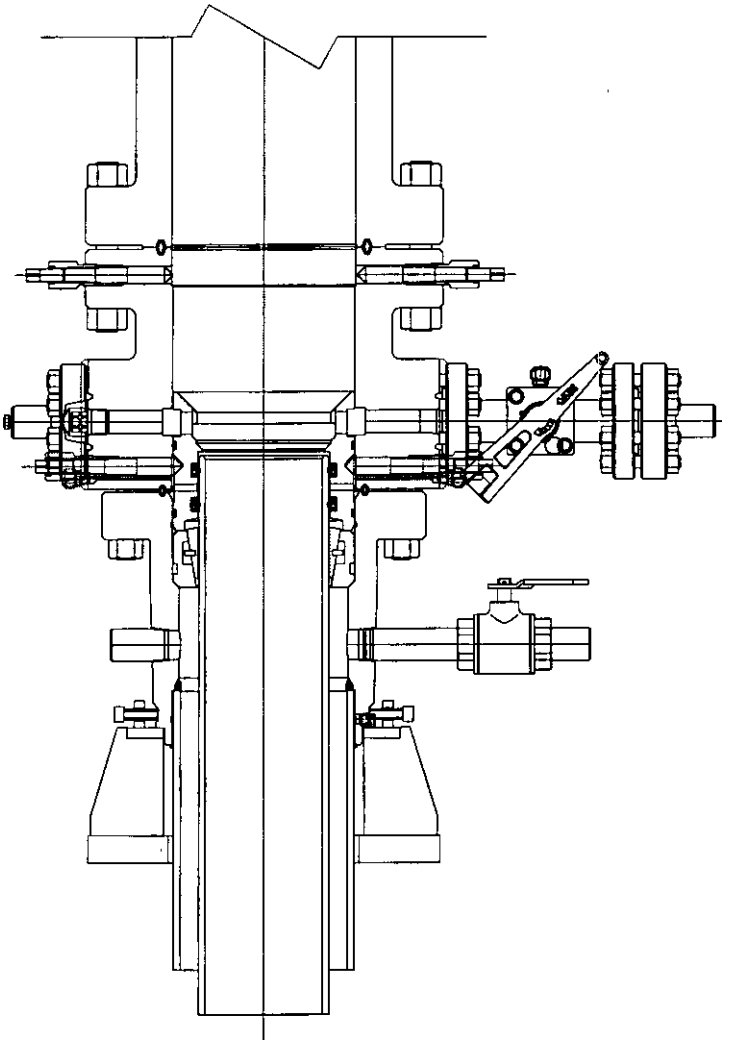
SURFACE WELLHEAD LAYOUT
UNIHEAD, UH-1,SOW,
DEVON ENERGY, ODESSA

DRAWN BY	K. VU	05-08-13
DRAFTING REVIEW	Z. MARQUEZ	05-08-13
DESIGN REVIEW	K. TAHA	05-08-13
APPROVED BY	R. HAMILTON	05-08-13

FMC Technologies

DRAWING NUMBER
DM100161771-2A

FMC Technologies



CONTINGENCY MODE

DEVON ENERGY

ARTESIA

S.E.N.M

13 3/8 X 9 5/8

QUOTE LAYOUT
F18648
REF: DM100161737
DM100151315

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DESIGN REVIEW	K. TAHA	05-08-13
APPROVED BY	R. HAMILTON	05-08-13

FMC Technologies

DRAWING NUMBER
DM100161771-2B

Continental CONTITECH

Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly. It is good practice to use lifting & safety equipment but not mandatory

Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

Robin Hodgson
Sales Manager
ContiTech Beattie Corp

ContiTech Beattie Corp,
11535 Brittmoore Park Drive,
Houston, TX 77041
Phone: +1 (832) 327-0141
Fax: +1 (832) 327-0148
www.contitechbeattie.com

RIG 212

PHOENIX

QUALITY DOCUMENT

PHOENIX RUBBER INDUSTRIAL LTD.

6728 Szeged, Budapesti út 10. Hungary • H-6701 Szeged, P. O. Box 152
none: (3662) 566-737 • Fax: (3662) 566-738

SALES & MARKETING: H-1092 Budapest, Ráday u. 42-44. Hungary • H-1440 Budapest, P. O. Box 26
Phone: (361) 456-4200 · Fax: (361) 217-2972, 456-4273 · www.taurusemerge.hu

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°:	552	
PURCHASER:	Phoenix Beattie Co.			P.O. N°:	1519FA-871	
PHOENIX RUBBER order N°:	170466	HOSE TYPE:	3" ID	Choke and Kill Hose		
HOSE SERIAL N°:	34128	NOMINAL / ACTUAL LENGTH:		11,43 m		
W.P. 68,96 MPa	10000 psi	T.P. 103,4 MPa	15000 psi	Duration:	60	min.

Pressure test with water at ambient temperature

See attachment. (1 page)

↑ 10 mm = 10 Min.

→ 10 mm = 25 MPa

COUPLINGS

Type	Serial N°	Quality	Heat N°
3" coupling with	720 719	AISI 4130	C7626
4 1/16" Flange end		AISI 4130	47357

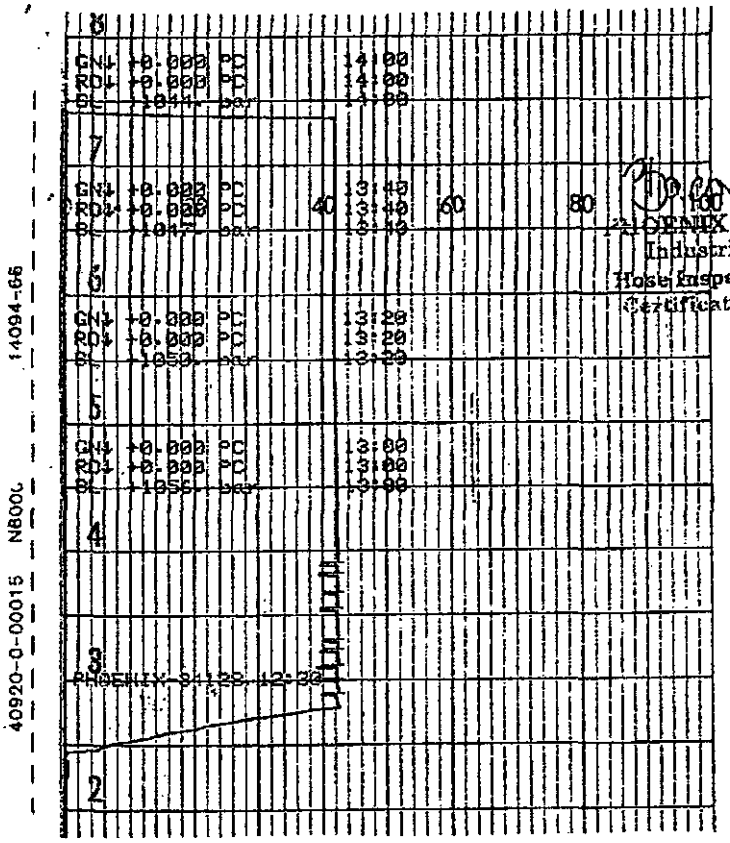
API Spec 16 C
Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

Date:	Inspector	Quality Control
29. April. 2002.		PHOENIX RUBBER Industrial Ltd. Hose Inspection and Certification Dept.

CERTIFIED TRUE COPY
PHOENIX RUBBER Q.C.

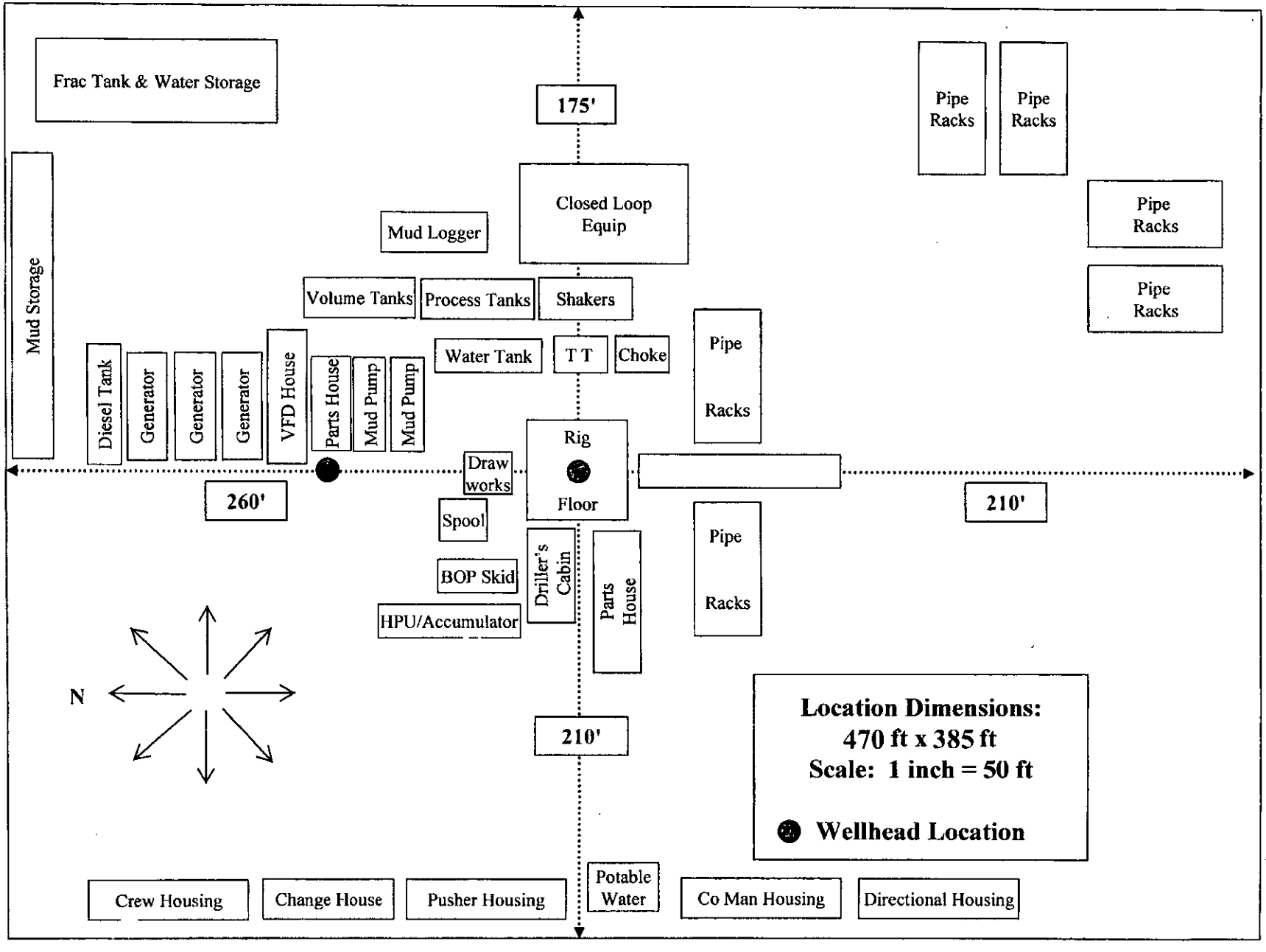


PHOENIX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE CO.
PHOENIX RUBBER C.C.

H&P Flex Rig Location Layout
2 Well Pad

CERF 10 FED COM 20H



devon

Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015

Hydrogen Sulfide (H_2S) Contingency Plan

For

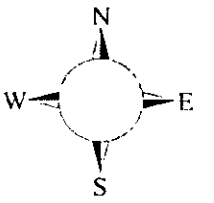
Cerf 10 Federal Com 20H

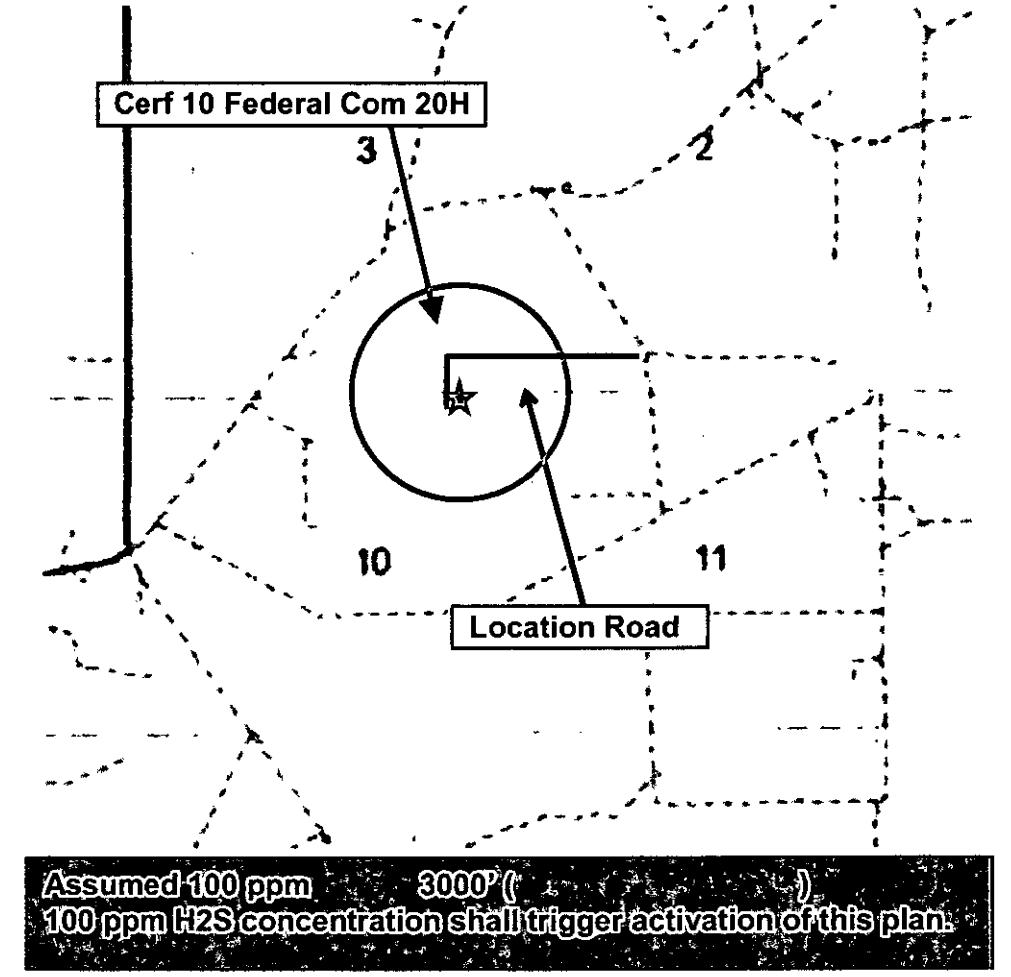
Sec-10 T-21S R-27E
600 FNL & 50' FEL
LAT. = 32.500366' N (NAD83)
LONG = 104.169187' W

Eddy County NM

Cerf 10 Federal Com 20H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.





Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H_2S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H_2S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	**H_2S**	**1.189 Air = 1**	**10 ppm**	**100 ppm/hr**	**600 ppm**
Sulfur Dioxide	**SO_2**	**2.21 Air = 1**	**2 ppm**	**N/A**	**1000 ppm**

Contacting Authorities

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

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H_2S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H_2S.

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold – Remotely Operated

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

   E. Mud/Gas Separator

2. **Protective equipment for essential personnel:**

   30-minute SCBA units located at briefing areas, as indicated on well site diagram, with one escape unit available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **H_2S detection and monitoring equipment:**

   Portable H_2S monitors positioned on location for best coverage and response. These units have warning lights which activate when H_2S levels reach 10 ppm and audible sirens which activate at 10 ppm. Sensor locations:

   - Bell nipple
   - Shale shaker
   - Trip tank
   - Suction pit
   - Rig floor
   - Cellar
   - Choke manifold
   - Living Quarters (usually the company man's trailer stairs.)

   Visual warning systems:

   A. Wind direction indicators as shown on well site diagram

   B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. **Mud program:**

   The mud program has been designed to minimize the volume of H_2S circulated to surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

5. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H_2S trim.

   B. All elastomers used for packing and seals shall be H_2S trim.

6. **Communication:**

   A. Company personnel have/use cellular telephones in the field.

   B. Land line (telephone) communications at Office

7. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H_2S environment will use the closed chamber method of testing.

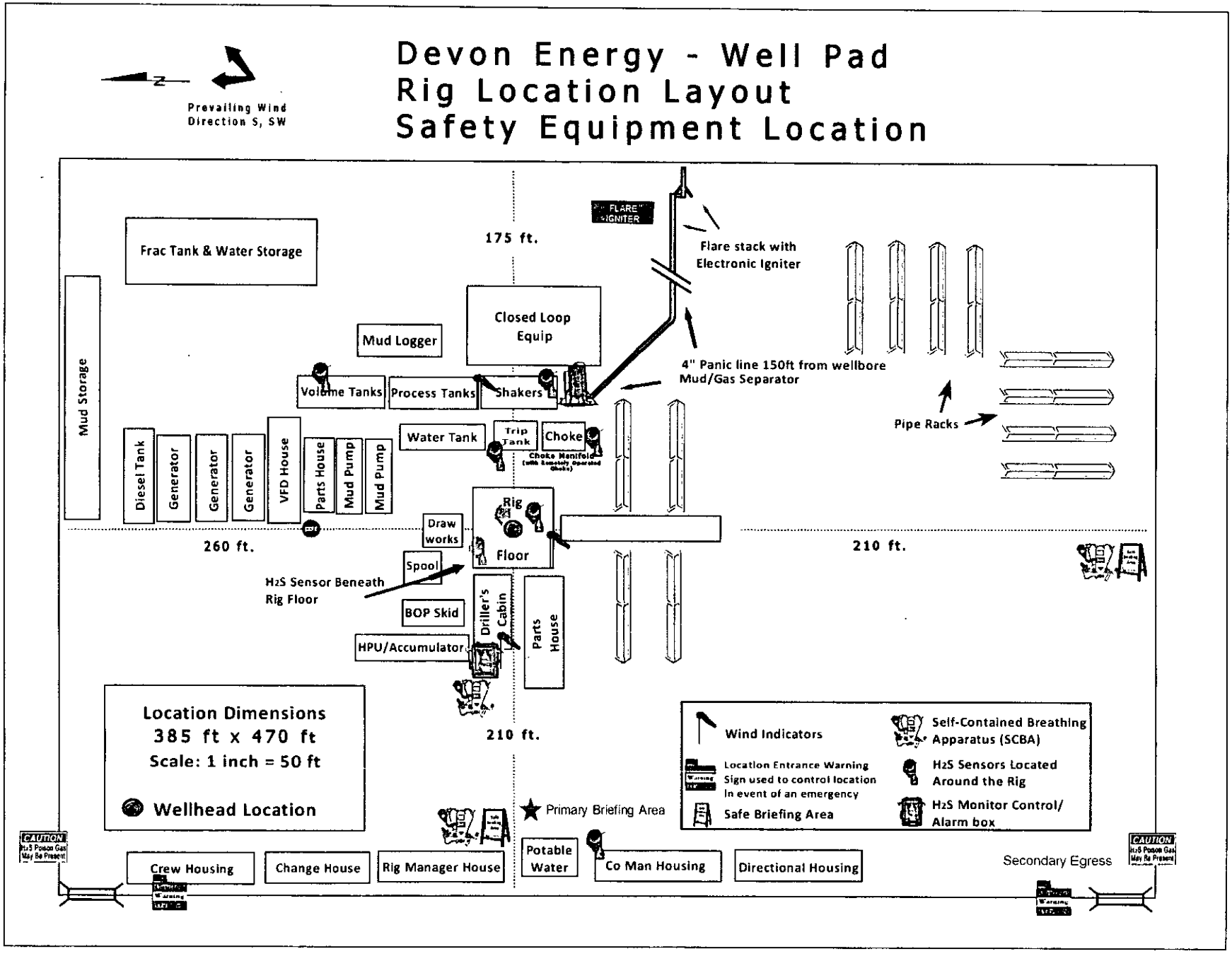
   B. There will be no drill stem testing.

Devon Energy Corp. Company Call List		
Drilling Supervisor – Basin – Mark Kramer		405-823-4796
Drilling Supervisor – Slope – Norman Naill		405-760-7234
EHS Professional – Mark Hurst		575-513-9087
Agency Call List		
Lea County (575)	**Hobbs**	
	Lea County Communication Authority	393-3981
	State Police	392-5588
	City Police	397-9265
	Sheriff's Office	393-2515
	Ambulance	**911**
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management	393-3612
Eddy County (575)	**Carlsbad**	
	State Police	885-3137
	City Police	885-2111
	Sheriff's Office	887-7551
	Ambulance	**911**
	Fire Department	885-3125
	LEPC (Local Emergency Planning Committee)	887-3798
	US Bureau of Land Management	887-6544
	NM Emergency Response Commission (Santa Fe)	(505) 476-9600
	24 HR	(505) 827-9126
	National Emergency Response Center	(800) 424-8802
	National Pollution Control Center: Direct	(703) 872-6000
	For Oil Spills	(800) 280-7118
	Emergency Services	
	Wild Well Control	(281) 784-4700
	Cudd Pressure Control (915) 699-0139	(915) 563-3356
	Halliburton	(575) 746-2757
	B. J. Services	(575) 746-3569
Give GPS position:	Native Air – Emergency Helicopter – Hobbs	(575) 392-6429
	Flight For Life - Lubbock, TX	(806) 743-9911
	Aerocare - Lubbock, TX	(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM	(800) 222-1222
	Poison Control (24/7)	(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service	(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov	

Prepared in conjunction with
Dave Small

SHARP COMMUNICATIONS & CONSULTING, LLC

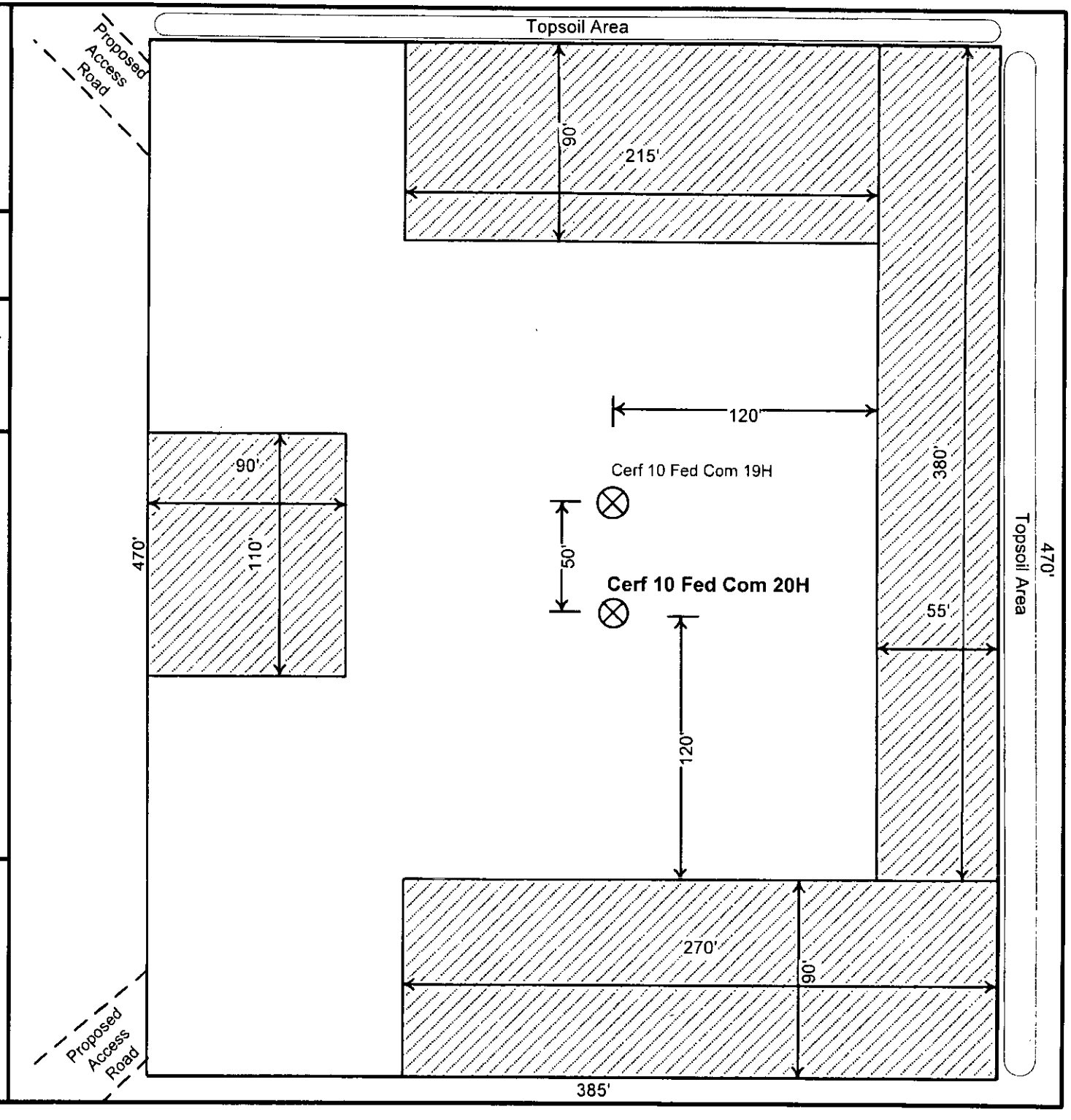
Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location



devon

Proposed Interim Site Reclamation

Devon Energy Production Co.
Cerf 10 Fed Com 19H & 20H
Sec.10-T21S-R27E
Eddy County, NM



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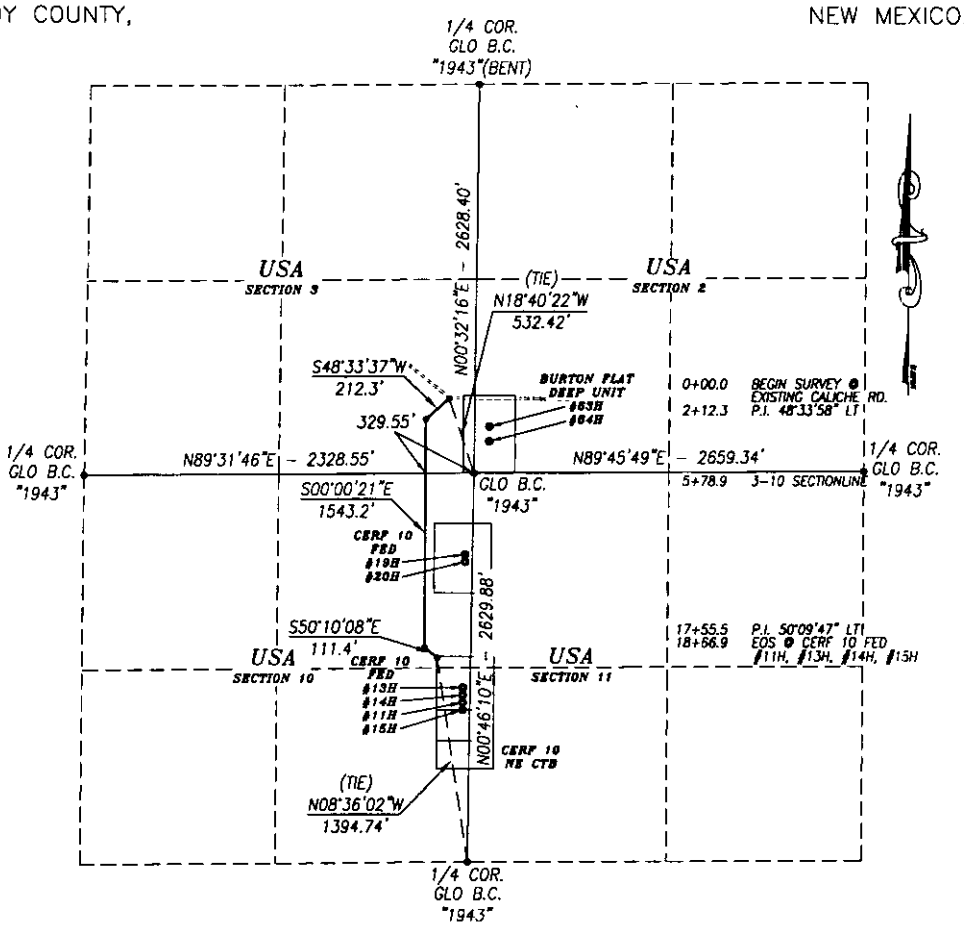
Proposed Reclamation Area

Scale: 1in = 60ft.

ACCESS ROAD PLAT
DEVON ENERGY PRODUCTION CO., L.P.

A PROPOSED ACCESS ROAD FROM AN EXISTING CALICHE ROAD TO
THE CERF 10 FED #11H, #13H, #14H, & #15H
SECTIONS 3 & 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE CROSSING USA LAND IN SECTIONS 3 & 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, NMPM, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET RIGHT AND 15.0 FEET LEFT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT IN THE SE/4 SE/4 OF SECTION 3, WHICH LIES N18°40'22"W 532.42 FEET FROM THE SOUTHEAST CORNER OF SECTION 3; THEN S48°33'37"W 212.3 FEET; THEN S00°00'21"E 1543.2 FEET; THEN S50°10'08"E 111.4 FEET; TO A POINT IN THE NE/4 NE/4 OF SECTION 10, WHICH LIES N08°36'02"W 1394.74 FEET FROM EAST QUARTER CORNER OF SECTION 10.

SAID STRIP OF LAND BEING 1866.9 FEET OR 113.15 RODS IN LENGTH, CONTAINING 1.286 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SECTION 3		SECTION 10	
SE/4 SE/4	35.09 RODS OR 0.399 ACRES	NE/4 NE/4	78.06 RODS OR 0.887 ACRES

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE GRID VALUES.

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 11/9/15
CHAD HARCROW N.M.P.S. NO. 17777 DATE

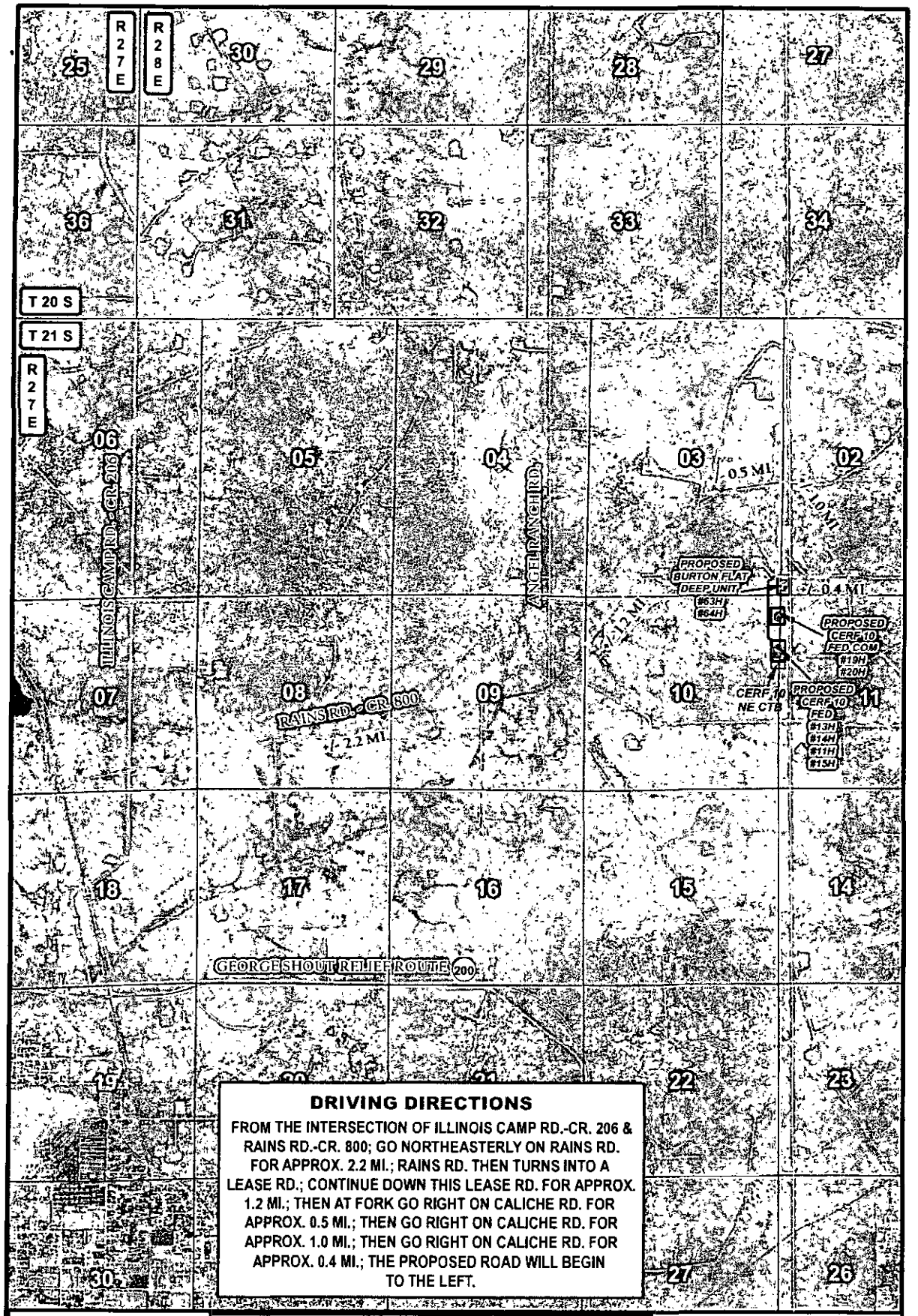
HARCROW SURVEYING, LLC
2314 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158 FAX: (575) 746-2158
e.harcrow@harcrowsurveying.com

1000 0 1000 2000 FEET
SCALE: 1"=1000'

DEVON ENERGY PRODUCTION CO., L.P.

SURVEY OF A PROPOSED ACCESS ROAD LOCATED IN SECTIONS 3 & 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NMPM, NEW MEXICO

SURVEY DATE: JUNE 18, 2015		
DRAFTING DATE: NOVEMBER 6, 2015		PAGE 1 OF 4
APPROVED BY: CH	DRAWN BY: SP	FILE: 15-1294



DRIVING DIRECTIONS

FROM THE INTERSECTION OF ILLINOIS CAMP RD.-CR. 206 & RAINS RD.-CR. 800; GO NORTHEASTERLY ON RAINS RD. FOR APPROX. 2.2 MI.; RAINS RD. THEN TURNS INTO A LEASE RD.; CONTINUE DOWN THIS LEASE RD. FOR APPROX. 1.2 MI.; THEN AT FORK GO RIGHT ON CALICHE RD. FOR APPROX. 0.5 MI.; THEN GO RIGHT ON CALICHE RD. FOR APPROX. 1.0 MI.; THEN GO RIGHT ON CALICHE RD. FOR APPROX. 0.4 MI.; THE PROPOSED ROAD WILL BEGIN TO THE LEFT.

LEGEND

- WELL
- WELLPAD
- PROPOSED ROAD
- EXISTING ROAD

CERF 10 FED WELLS & CERF 10 NE CTB ACCESS ROAD

SECTIONS: 3 & 10	TOWNSHIP: 21 S.	RANGE: 27 E.
STATE: NEW MEXICO	COUNTY: EDDY	SURVEY: N.M.P.M
W.O. # 15-1294		LEASE: CERF 10 FED

0 2,500 5,000 7,500 FEET

0 0.2 0.4 0.8 Miles

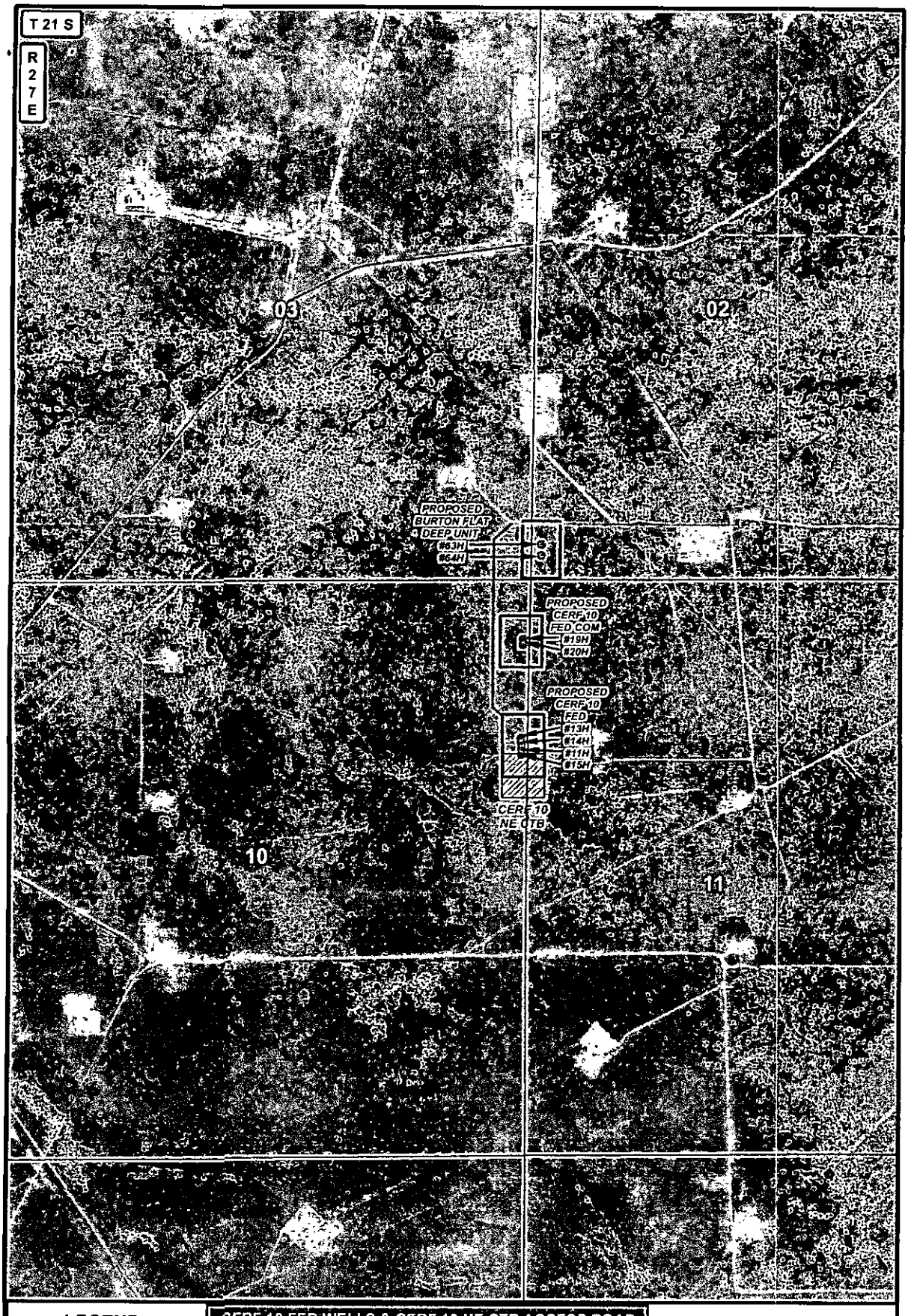
1 IN = 3,000 FT

DRIVING DIRECTIONS | IMAGERY | S.P.

devon
ENERGY PRODUCTION CO. L.P.

HARCROW SURVEYING, LLC.
2314 W. MAIN ST, ARTESIA, NM 88210
PH: (575) 746-2158 FAX: (575) 746-2158
c.harcrow@harcrowsurveying.com

ORIG: 11/06/2015 | PAGE: 2 OF 4



LEGEND

- WELL
- WELLPAD
- PROPOSED ROAD
- EXISTING ROAD

CERF 10 FED WELLS & CERF 10 NE CTB ACCESS ROAD

SECTIONS: 3 & 10	TOWNSHIP: 21 S.	RANGE: 27 E.
STATE: NEW MEXICO	COUNTY: EDDY	SURVEY: N.M.P.M
W.O. # 15-1294		LEASE: CERF 10 FED

0 2,500 FEET

0 0.05 0.1 0.2 Miles

1 IN = 1,000 FT

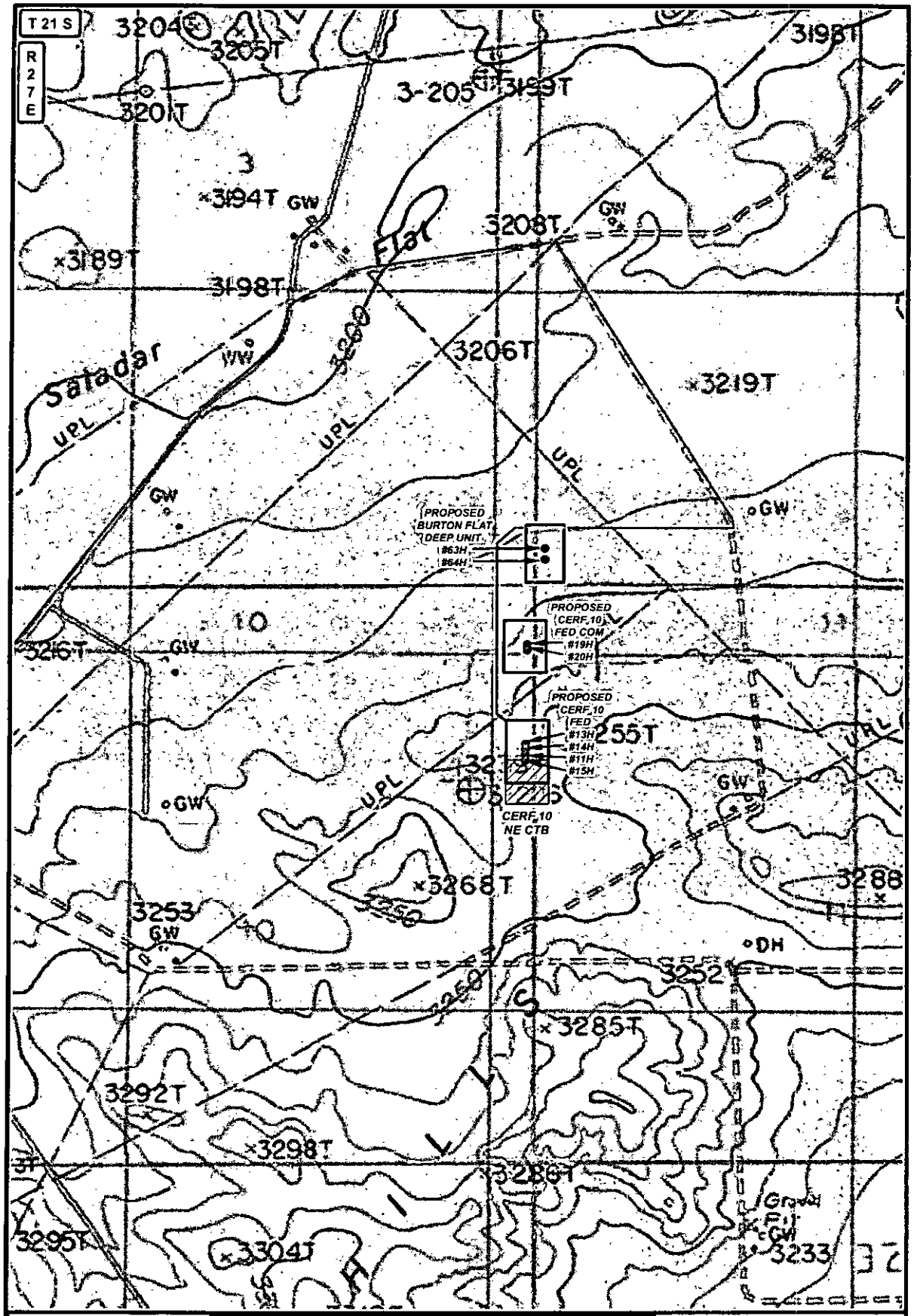
ROAD OVERVIEW IMAGERY S.P.

N

devon
ENERGY PRODUCTION CO. L.P.

HARCROW SURVEYING, LLC.
2314 W. MAIN ST, ARTESIA, NM 88210
PH: (575) 746-2158 FAX: (575) 746-2158
c.harcrow@harcrowsurveying.com

ORIG: 11/06/2015



LEGEND

- WELL
- WELLPAD
- PROPOSED ROAD
- EXISTING ROAD
- PRIVATE
- STATE OF NM
- US BLM

CERF 10 FED WELLS & CERF 10 NE CTB ACCESS ROAD

SECTIONS: 3 & 10	TOWNSHIP: 21 S.	RANGE: 27 E.
STATE: NEW MEXICO	COUNTY: EDDY	SURVEY: N.M.P.M
W.O. # 15-1294		LEASE: CERF 10 FED

0 2,500 FEET

0 0.05 0.1 0.2 Miles 1 IN = 1,000 FT

ROAD OVERVIEW | LAND STATUS | S.P.

N

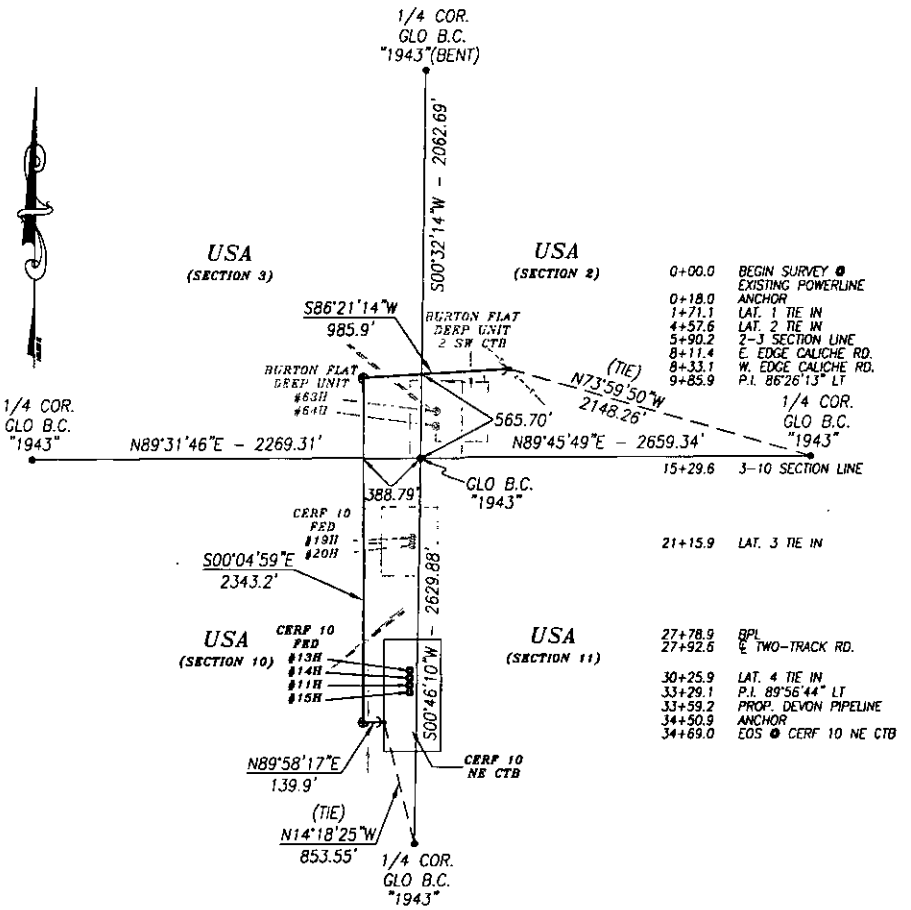
devon
ENERGY PRODUCTION CO. L.P.

HARCROW SURVEYING, LLC.
2314 W. MAIN ST, ARTESIA, NM 88210
PH: (575) 746-2158 FAX: (575) 746-2158
c.harcrow@harcrowsurveying.com

ORIG: 11/06/2015

POWERLINE PLAT: MAIN LINE
DEVON ENERGY PRODUCTION CO., L.P.

A PROPOSED POWERLINE FROM AN EXISTING POWERLINE TO THE CERF 10 NE CTB IN
SECTIONS 2, 3, & 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE AND 3537.0 FEET OR 214.36 RODS OR 0.670 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 2, 3, & 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY; WITH ANCHORS EXTENDING OUTSIDE THE CENTERLINE SURVEY 17 FEET NORTHERLY AND WESTERLY AT P.I. #1 AND 17 FEET SOUTHERLY AND WESTERLY AT P.I. #2; WHICH HAVE BEEN ACCOUNTED FOR IN FOOTAGES, RODS, AND MILES.

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE GRID VALUES.

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 10/26/15

CHAD HARCROW N.M.P.S. NO. 17777 DATE

HARCROW SURVEYING, LLC
2314 W. MAIN ST. ARTESIA, N.M. 88210
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c.harcrow@harcrowsurveying.com

1000 0 1000 2000 FEET
SCALE: 1"=1000'

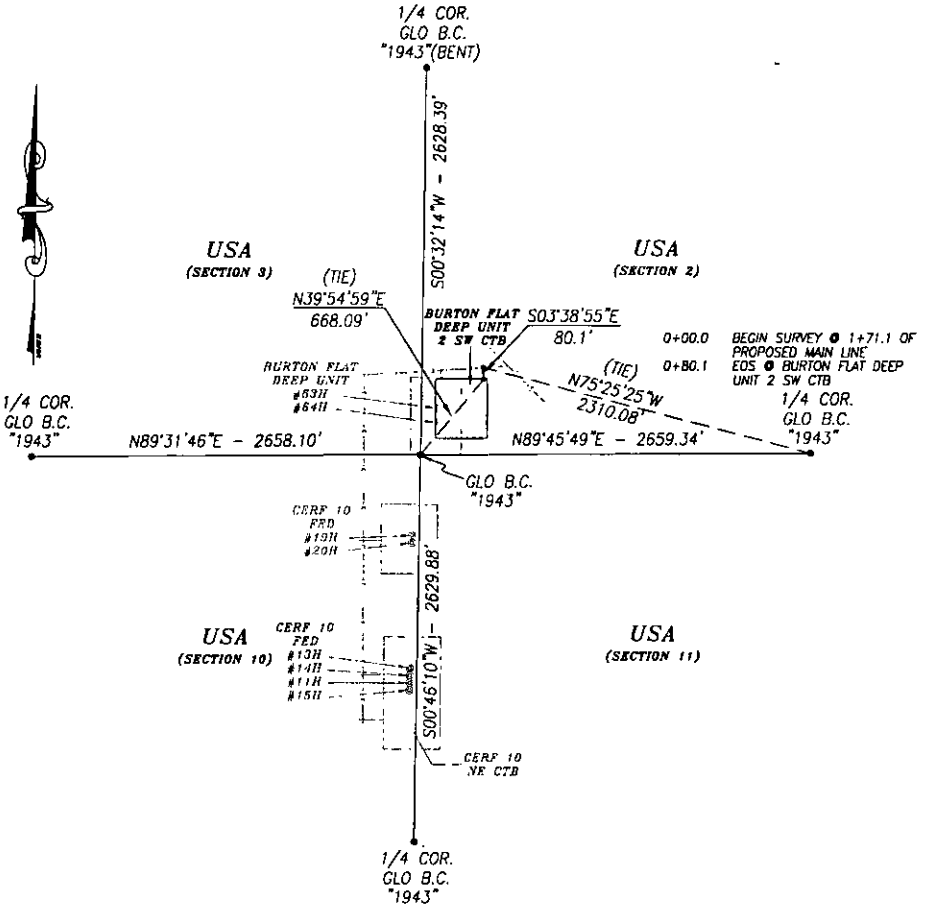
DEVON ENERGY PRODUCTION CO., L.P.

SURVEY OF A PROPOSED POWERLINE LOCATED IN SECTIONS 2, 3, & 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NMPM, NEW MEXICO

SURVEY DATE: OCTOBER 13, 2015	DEVON #397573E
DRAFTING DATE: OCTOBER 23, 2015	PAGE 1 OF 8
APPROVED BY: CH / DRAWN BY: SP	FILE: 15-1222

POWERLINE PLAT: LATERAL 1
DEVON ENERGY PRODUCTION CO., L.P.

A PROPOSED POWERLINE FROM THE PROPOSED MAIN LINE TO
THE BURTON FLAT DEEP UNIT 2 SW CTB IN
SECTION 2, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE AND 80.1 FEET OR 4.85 RODS OR 0.015 MILES IN LENGTH CROSSING USA LAND IN SECTION 2, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE GRID VALUES.

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CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

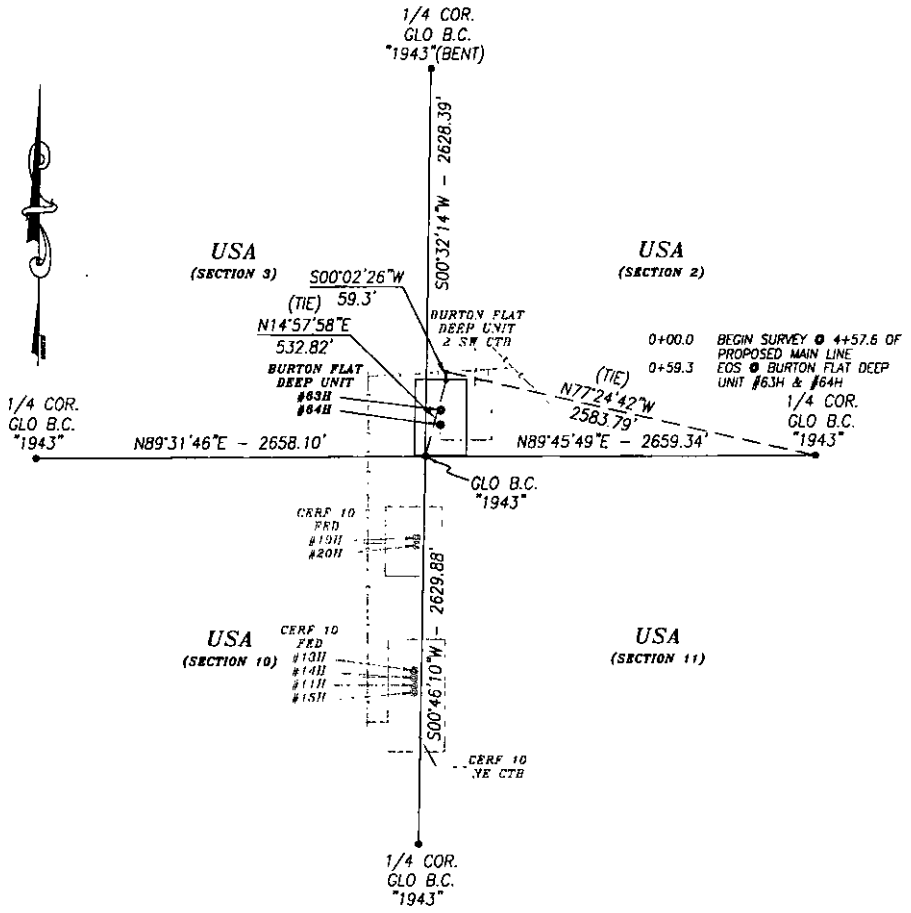
Chad Harcrow 10/26/15
CHAD HARCROW N.M.P.S. NO. 17777 DATE

1000 0 1000 2000 FEET
SCALE: 1"=1000'

DEVON ENERGY PRODUCTION CO., L.P.		
SURVEY OF A PROPOSED POWERLINE LOCATED IN SECTION 2, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NMPM, NEW MEXICO		
SURVEY DATE: OCTOBER 13, 2015		DEVON #397573E
DRAFTING DATE: OCTOBER 23, 2015		PAGE 2 OF 8
APPROVED BY: CH	DRAWN BY: SP	FILE: 15-1222

POWERLINE PLAT: LATERAL 2
DEVON ENERGY PRODUCTION CO., L.P.

A PROPOSED POWERLINE FROM THE PROPOSED MAIN LINE TO
THE BURTON FLAT DEEP UNIT #63H & #64H IN
SECTION 2, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE AND 59.3 FEET OR 3.59 RODS OR 0.011 MILES IN LENGTH CROSSING USA LAND IN SECTION 2, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE GRID VALUES.

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CERTIFICATION
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CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 10/26/15
CHAD HARCROW N.M.P.S. NO. 17777 DATE

1000 0 1000 2000 FEET
SCALE: 1"=1000'

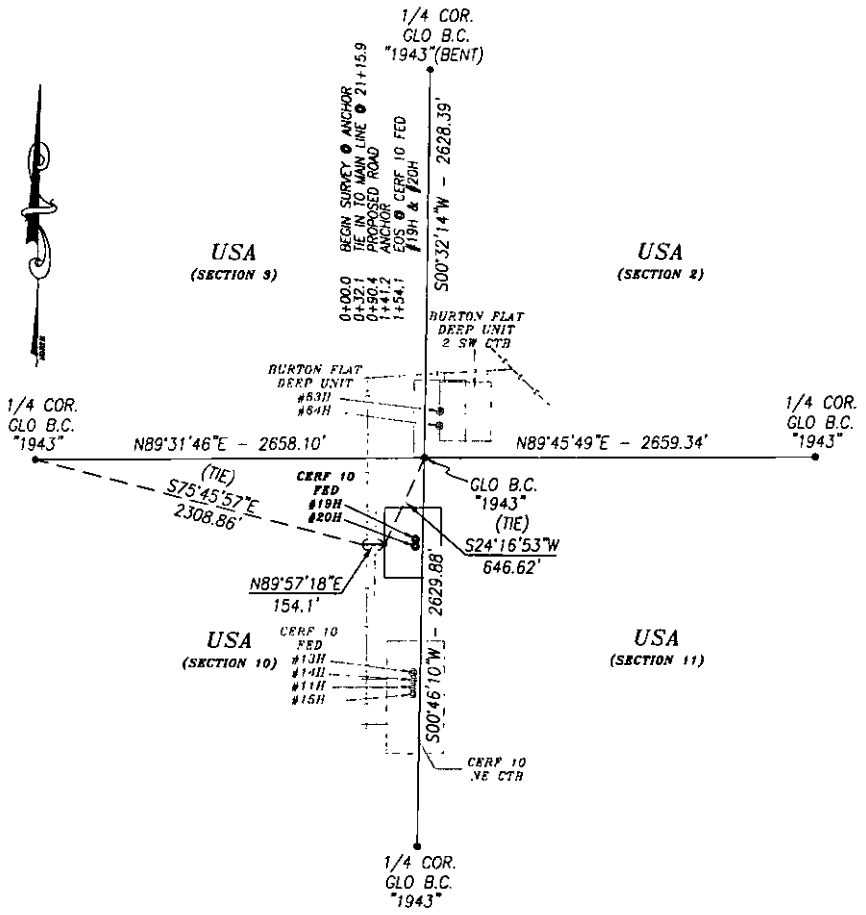
DEVON ENERGY PRODUCTION CO., L.P.

SURVEY OF A PROPOSED POWERLINE LOCATED IN SECTION 2, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NMPM, NEW MEXICO

SURVEY DATE: OCTOBER 13, 2015	DEVON #397573E
DRAFTING DATE: OCTOBER 23, 2015	PAGE 3 OF 8
APPROVED BY: CH / DRAWN BY: SP	FILE: 15-1222

POWERLINE PLAT: LATERAL 3
DEVON ENERGY PRODUCTION CO., L.P.

A PROPOSED POWERLINE FROM THE PROPOSED MAIN LINE TO
THE CERF 10 FED #19H & #20H IN
SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE AND 154.1 FEET OR 9.34 RODS OR 0.029 MILES IN LENGTH CROSSING USA LAND IN SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE GRID VALUES.

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CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 10/26/15
CHAD HARCROW N.M.P.S. NO. 17777 DATE

1000 0 1000 2000 FEET
SCALE: 1"=1000'

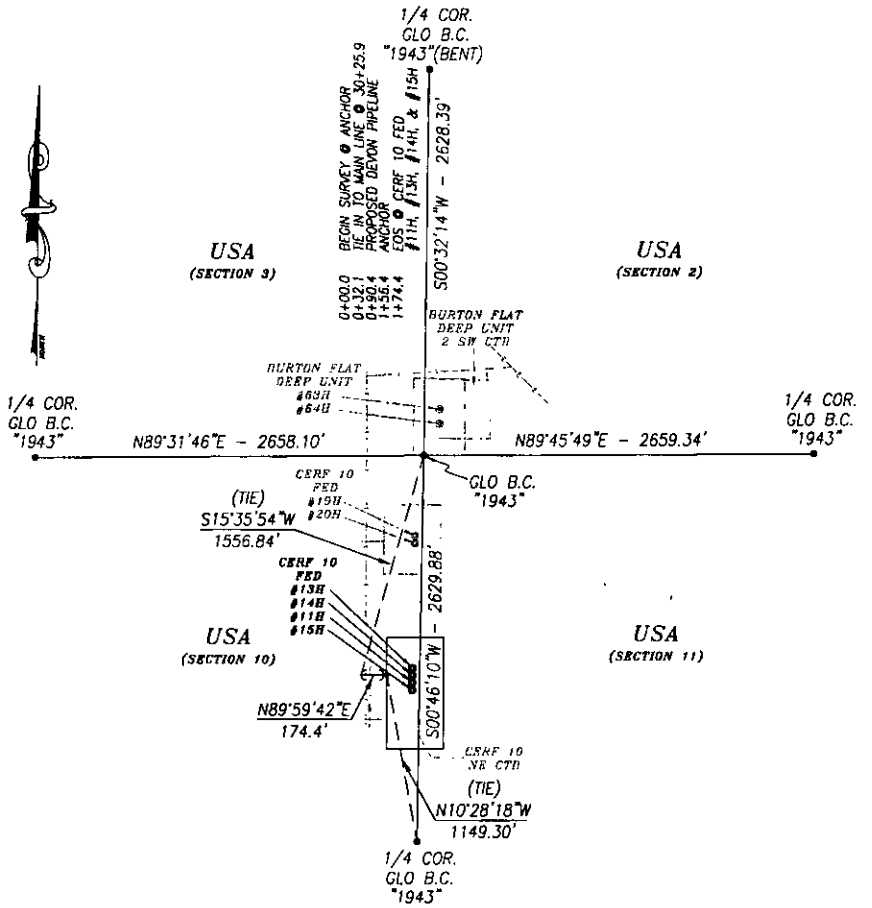
DEVON ENERGY PRODUCTION CO., L.P.

SURVEY OF A PROPOSED POWERLINE LOCATED IN SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NMPM, NEW MEXICO

SURVEY DATE: OCTOBER 13, 2015		DEVON #397573E
DRAFTING DATE: OCTOBER 23, 2015		PAGE 4 OF 8
APPROVED BY: CH	DRAWN BY: SP	FILE: 15-1222

POWERLINE PLAT: LATERAL 3
DEVON ENERGY PRODUCTION CO., L.P.

A PROPOSED POWERLINE FROM THE PROPOSED MAIN LINE TO
THE CERF 10 FED #11H, #13H, #14H, & #15H IN
SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE AND 174.4 FEET OR 10.57 RODS OR 0.033 MILES IN LENGTH CROSSING USA LAND IN SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE GRID VALUES.

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 10/26/15

CHAD HARCROW N.M.P.S. NO. 17777 DATE

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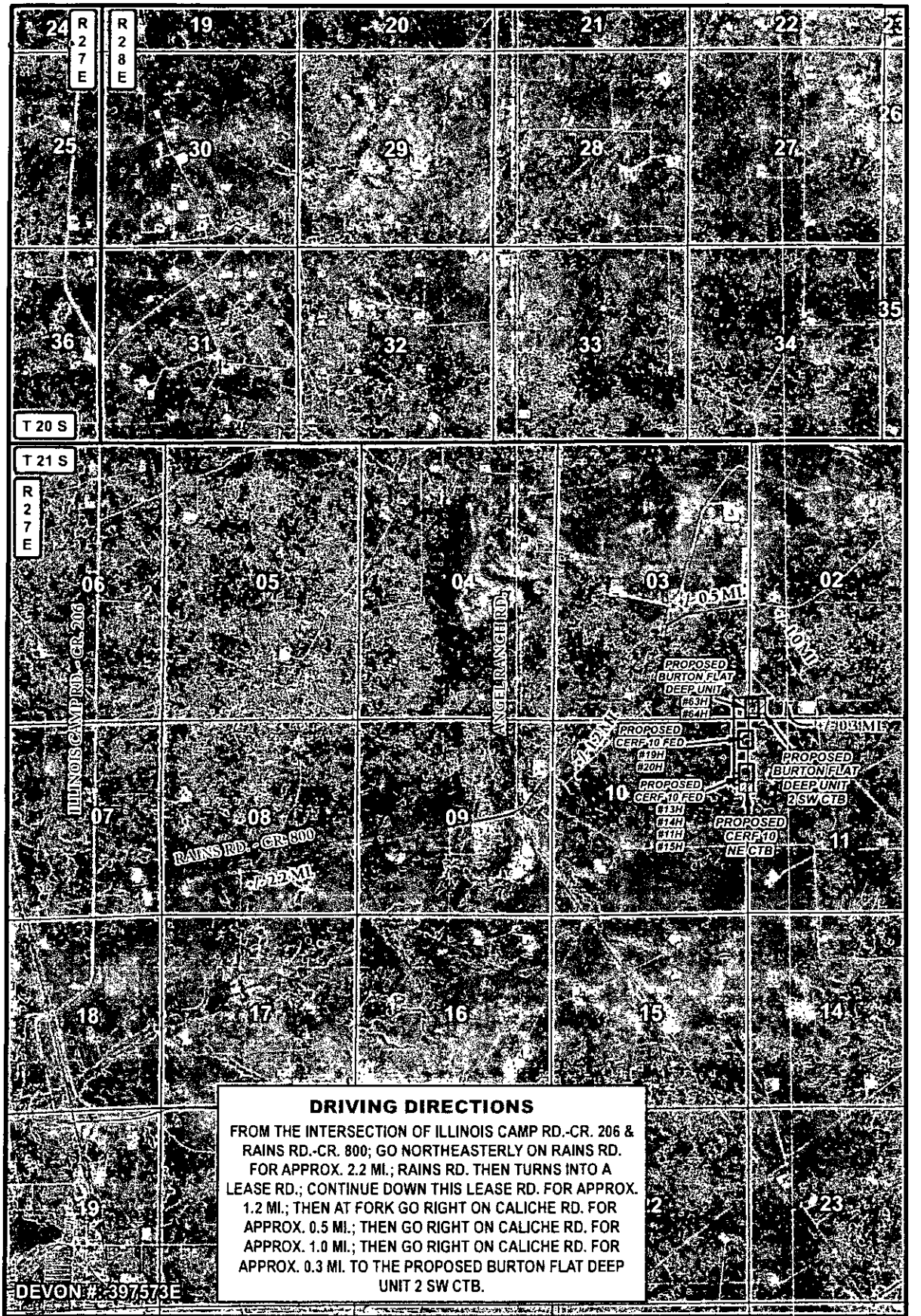
1000 0 1000 2000 FEET
SCALE: 1"=1000'

DEVON ENERGY PRODUCTION CO., L.P.	
SURVEY OF A PROPOSED POWERLINE LOCATED IN SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NMPM, NEW MEXICO	
SURVEY DATE: OCTOBER 13, 2015	DEVON #397573E
DRAFTING DATE: OCTOBER 23, 2015	PAGE 5 OF 8
APPROVED BY: CH / DRAWN BY: SP	FILE: 15-1222



DRIVING DIRECTIONS

FROM THE INTERSECTION OF ILLINOIS CAMP RD.-CR. 206 & RAINS RD.-CR. 800; GO NORTHEASTERLY ON RAINS RD. FOR APPROX. 2.2 MI.; RAINS RD. THEN TURNS INTO A LEASE RD.; CONTINUE DOWN THIS LEASE RD. FOR APPROX. 1.2 MI.; THEN AT FORK GO RIGHT ON CALICHE RD. FOR APPROX. 0.5 MI.; THEN GO RIGHT ON CALICHE RD. FOR APPROX. 1.0 MI.; THEN GO RIGHT ON CALICHE RD. FOR APPROX. 0.3 MI. TO THE PROPOSED BURTON FLAT DEEP UNIT 2 SW CTB.

LEGEND

- MAIN POWERLINE
- LATERAL POWERLINE
- EXISTING ROAD
- WELL
- WELLPAD
- ANCHOR

BURTON FLAT DEEP UNIT/CERF 10 FED POWERLINE

SECTIONS: 2, 3, 10 | TOWNSHIP: 21 S. | RANGE: 27 E.

STATE: NEW MEXICO | COUNTY: EDDY | SURVEY: N.M.P.M

W.O. # 15-1222 LEASE: BURTON FLAT DEEP UNIT/CERF 10 FED

0 2,500 5,000 7,500 FEET

0 0.2 0.4 0.8 Miles

1 IN = 3,000 FT

DRIVING DIRECTIONS | IMAGERY | S.P.

N

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ENERGY PRODUCTION CO. L.P.

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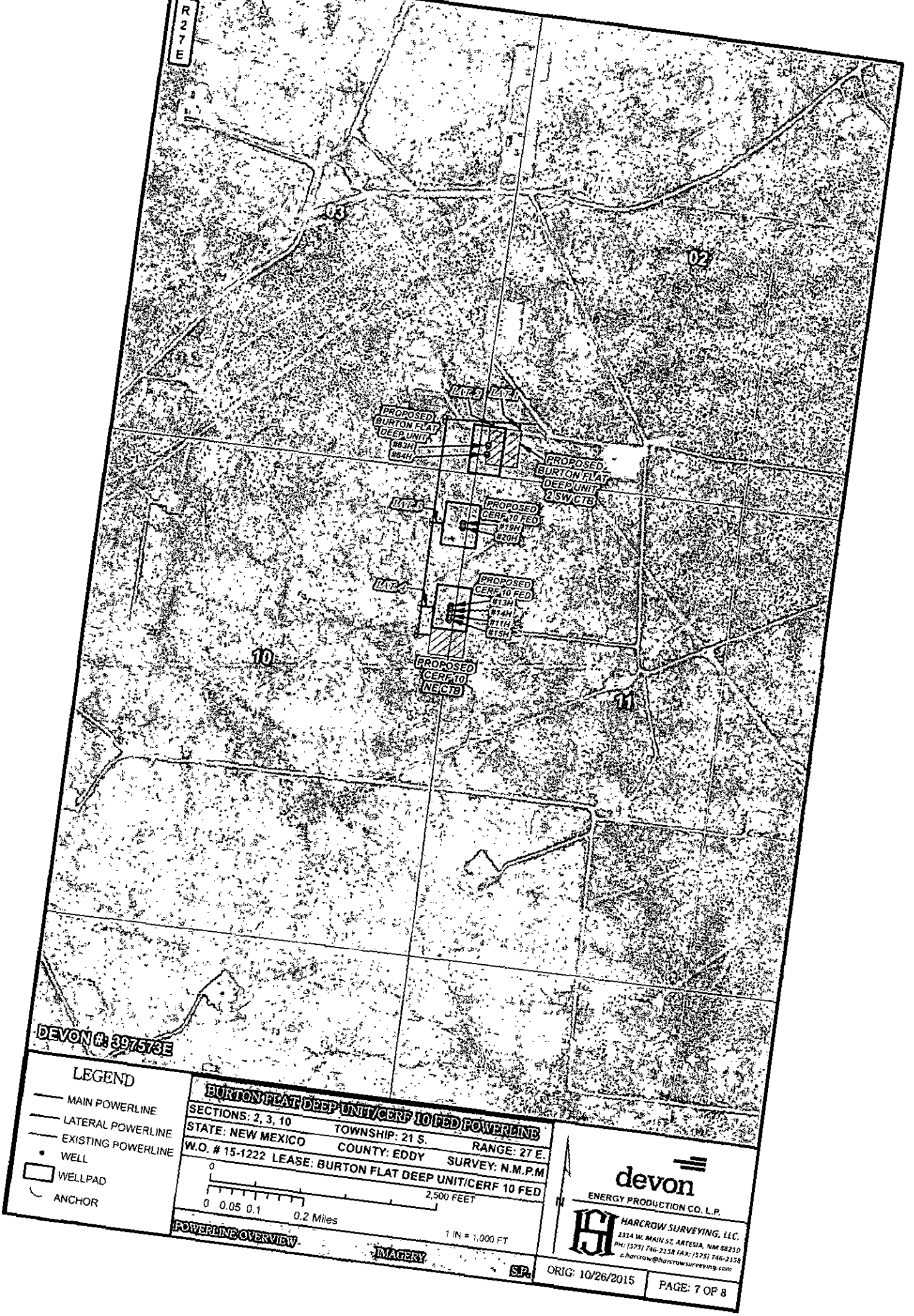
ORIG: 10/26/2015


R 27 E
03
02
10
11
LAT 1
LAT 2
LAT 3
LAT 4
PROPOSED BURTON FLAT DEEP UNIT #63H
#64H
PROPOSED BURTON FLAT DEEP UNIT 2 SW CTB
PROPOSED CERF 10 FED #19H
#20H
PROPOSED CERF 10 FED #13H
#14H
#11H
#15H
PROPOSED CERF 10 NE CTB
DEVON #: 397573E
LEGEND
MAIN POWERLINE
LATERAL POWERLINE
EXISTING POWERLINE
WELL
WELLPAD
ANCHOR
BURTON FLAT DEEP UNIT/CERF 10 FED POWERLINE
SECTIONS: 2, 3, 10
TOWNSHIP: 21 S.
RANGE: 27 E.
STATE: NEW MEXICO
COUNTY: EDDY
SURVEY: N.M.P.M
W.O. # 15-1222 LEASE: BURTON FLAT DEEP UNIT/CERF 10 FED
0
2,500 FEET
0 0.05 0.1 0.2 Miles
1 IN = 1,000 FT
POWERLINE OVERVIEW - IMAGERY
S.P.
devon
ENERGY PRODUCTION CO. L.P.
HARCROW SURVEYING, LLC.
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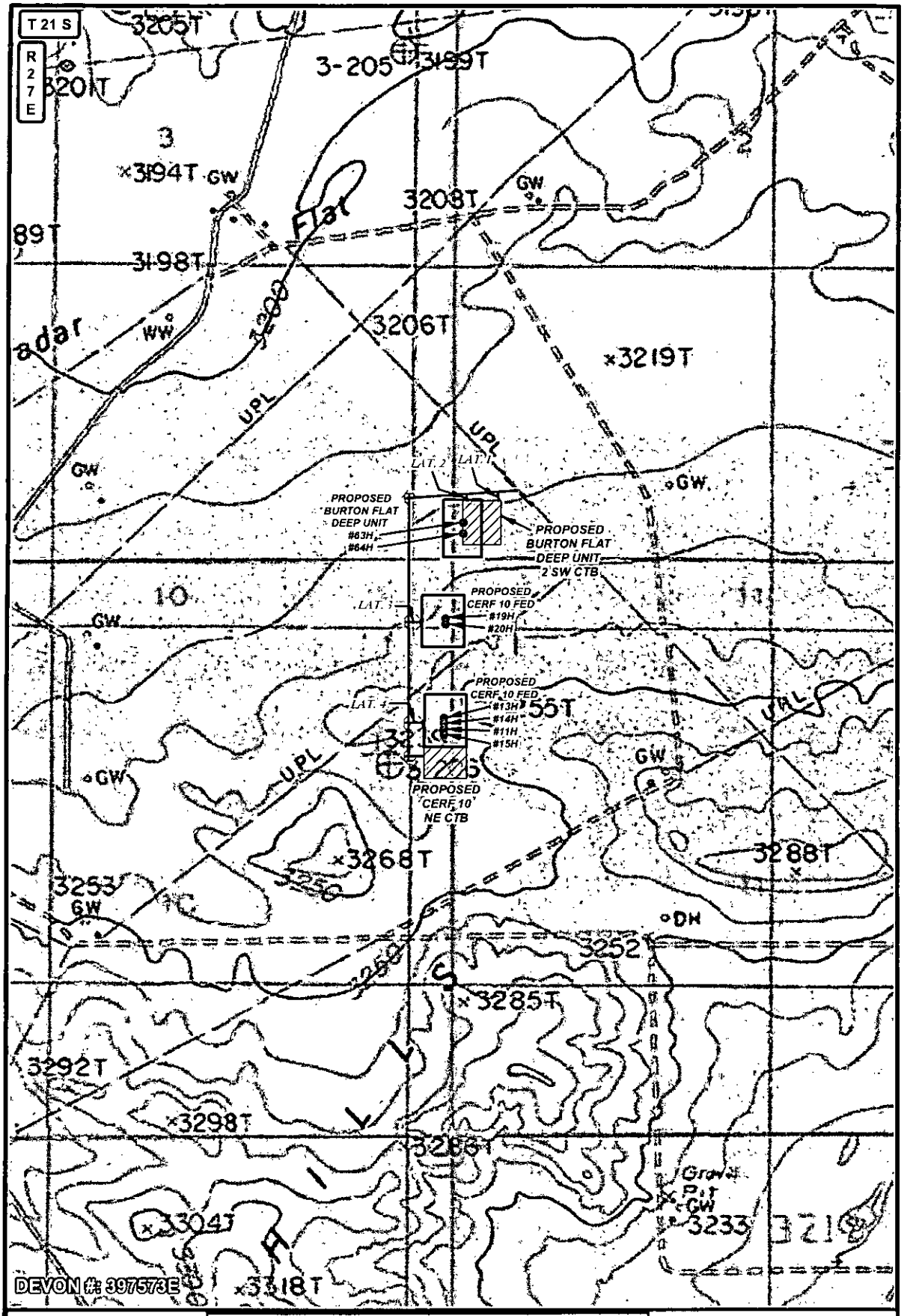
ORIG: 10/26/2015
PAGE: 7 OF 8



LEGEND

- MAIN POWERLINE
- LATERAL POWERLINE
- EXISTING POWERLINE
- WELL
- WELLPAD
- ANCHOR
- PRIVATE
- STATE OF NM
- US BLM

BURTON FLAT DEEP UNIT/CERF 10 FED POWERLINE

SECTIONS: 2, 3, 10 | TOWNSHIP: 21 S. | RANGE: 27 E.

STATE: NEW MEXICO | COUNTY: EDDY | SURVEY: N.M.P.M

W.O. # 15-1222 LEASE: BURTON FLAT DEEP UNIT/CERF 10 FED

0 2,500 FEET

0 0.05 0.1 0.2 Miles 1 IN = 1,000 FT

POWERLINE OVERVIEW | LAND STATUS | S.P.

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ENERGY PRODUCTION CO. L.P.

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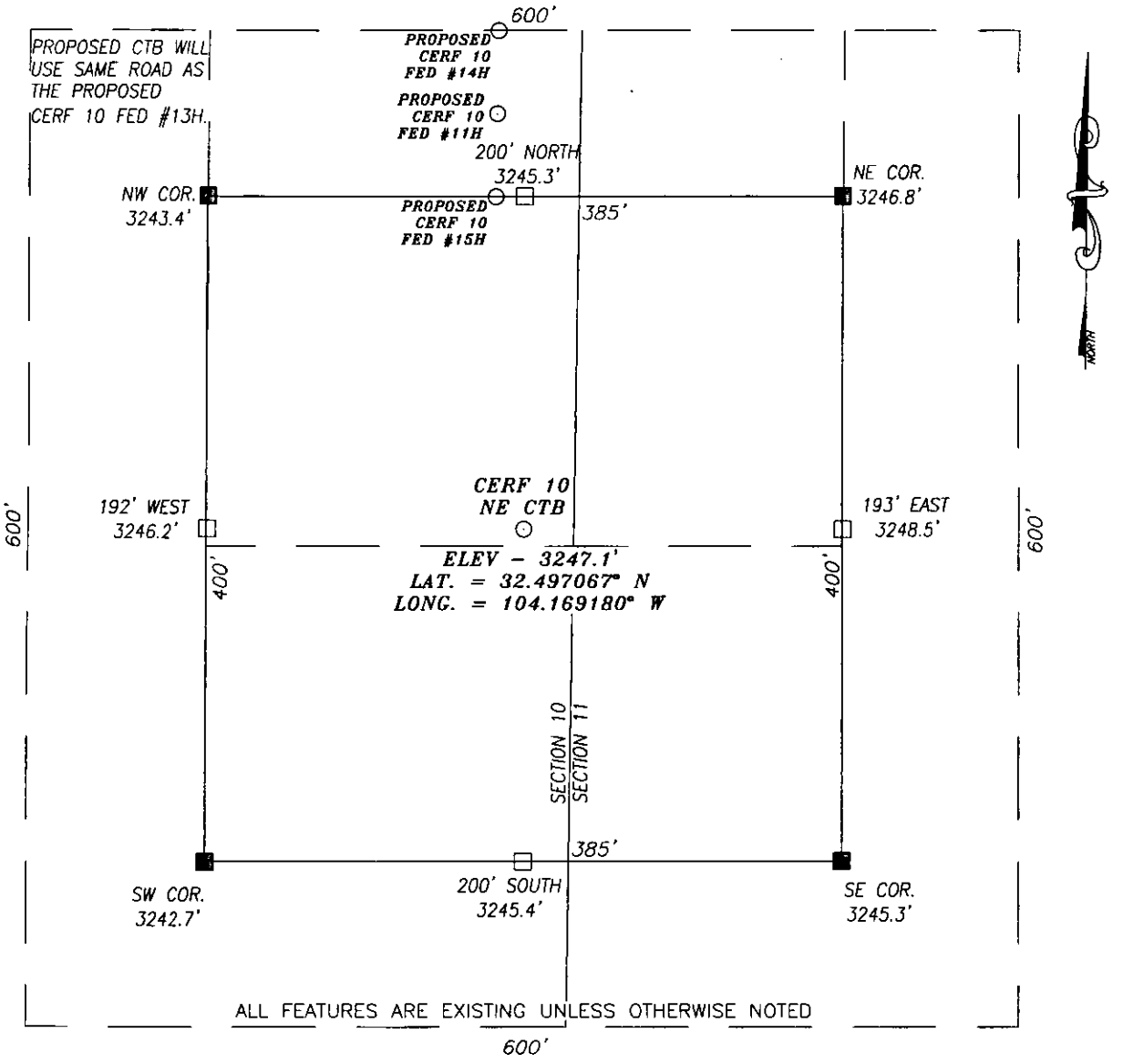
ORIG: 10/26/2015 | PAGE: 8 OF 8

SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,

EDDY COUNTY NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF RAINS ROAD AND ILLINOIS CAMP ROAD (CR 206) GO EASTNORTHEAST ON RAINS ROAD FOR APPROX. 2.4 MILES PASSING ANGEL RANCH RD.; THEN TURN LEFT (NORTHEAST) ONTO A CALICHE RD. AND GO APPROX. 1.3 MILES TO A 'Y' INTERSECTION; THEN TURN RIGHT (EAST) AND GO APPROX. 0.5 MILES; THEN TURN RIGHT (SOUTHEAST) AND GO APPROX. 0.6 MILES; THEN TURN RIGHT (WEST) AND GO APPROX. 0.4 MILES; THEN PROPOSED CTB IS LEFT SOUTH APPROX. 0.4 MILES.

100 0 100 200 Feet

Scale: 1"=100'

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DEVON ENERGY PRODUCTION CO., L.P.

CERF 10 NE CTB
LOCATED 1800 FEET FROM THE NORTH LINE
AND 30 FEET FROM THE EAST LINE OF SECTION 10,
TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

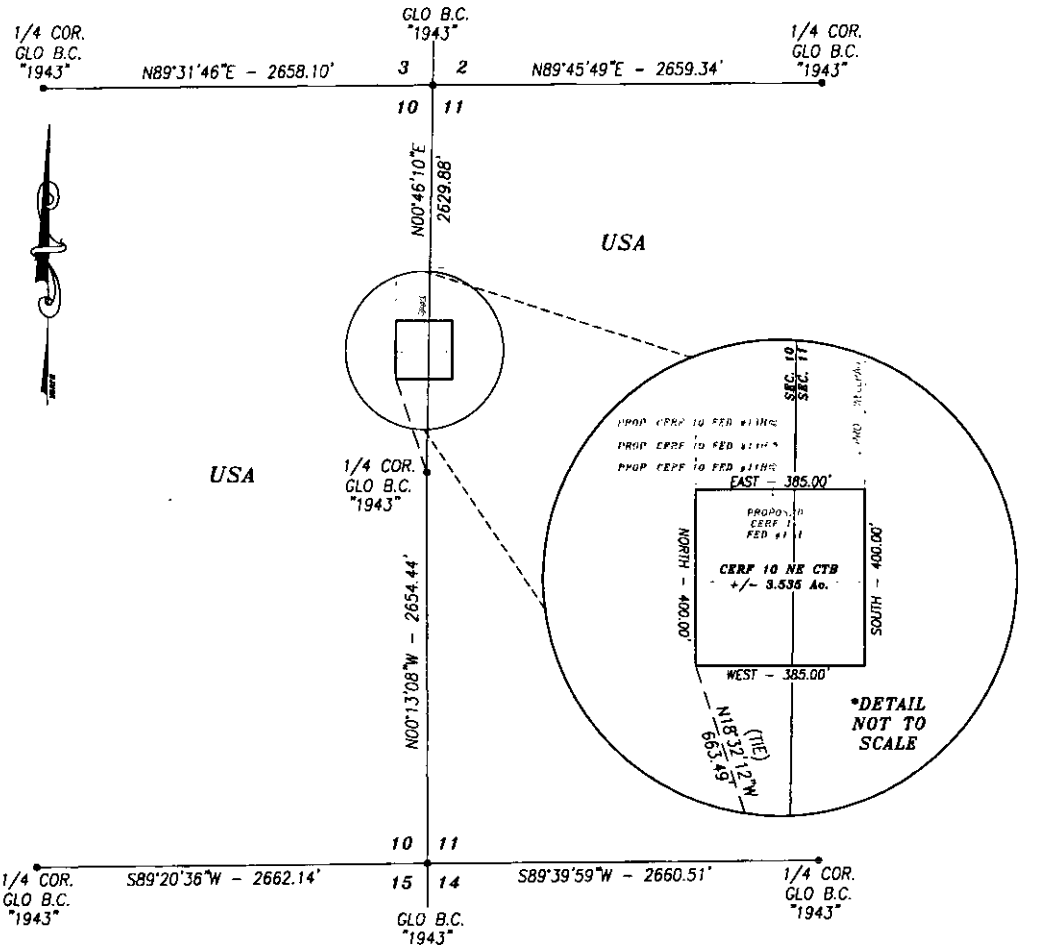
SURVEY DATE: JUNE 18, 2015		PAGE: 1 OF 8
DRAFTING DATE: JUNE 26, 2015		
APPROVED BY: CH	DRAWN BY: AF	FILE: 15-781

CERF 10 NE CENTRAL TANK BATTERY
DEVON ENERGY PRODUCTION CO., LP.

A SURVEY OF THE PROPOSED CERF 10 NE CTB IN

SECTIONS 10 & 11, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,

EDDY COUNTY, NEW MEXICO.



DESCRIPTION

A PROPOSED CTB LYING WITHIN USA LAND IN SECTIONS 10 & 11, TOWNSHIP 21 SOUTH, RANGE 27 EAST, NMPM, EDDY COUNTY, NEW MEXICO AND BEING DESCRIBED BY THE FOLLOWING CENTERLINE SURVEY:

BEGINNING AT THE SOUTHWEST CORNER OF SAID PARCEL WITHIN SECTION 10, WHICH LIES N18°32'12"W 663.49 FEET FROM THE EAST QUARTER CORNER OF SECTION 10; THEN NORTH 400.00 FEET; THEN EAST 385.00 FEET; THEN SOUTH 400.00 FEET; THEN WEST 385.00 FEET BACK TO THE POINT OF BEGINNING.

SAID PARCEL OF LAND BEING CONTAINING 3.535 ACRES MORE OR LESS AND BEING ALLOCATED BY SECTIONS AS FOLLOWS:

SECTION 10	*2.039 ACRES*
SECTION 11	*1.496 ACRES*

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE GRID VALUES.

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 7/10/15

CHAD HARCROW N.M.P.S. NO. 17777 *DATE*

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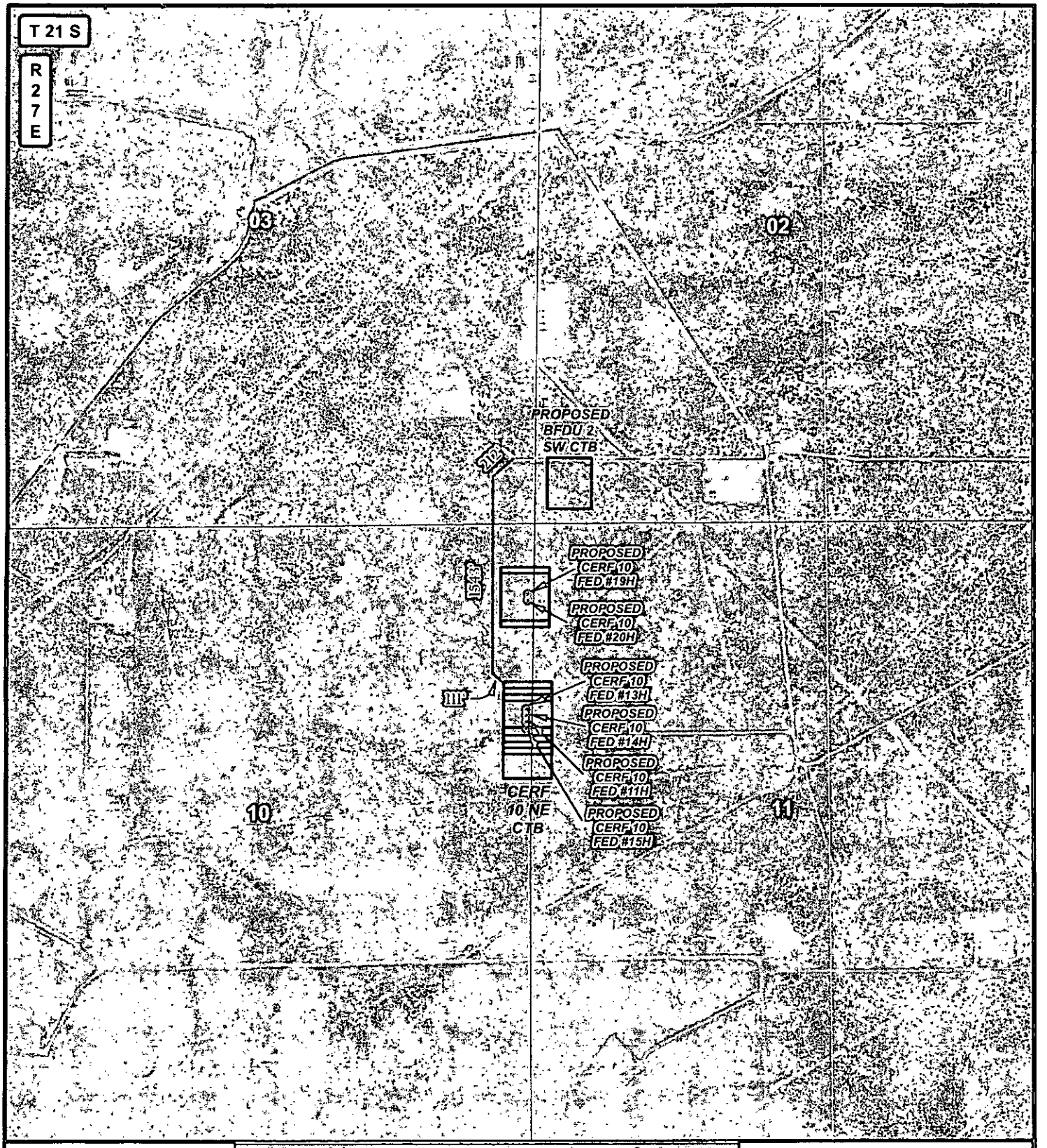
1000 0 1000 2000 FEET
SCALE: 1"=1000'

DEVON ENERGY PRODUCTION CO. LP.

SURVEY OF A PROPOSED CTB LOCATED IN SECTIONS 10 & 11, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NMPM, NEW MEXICO

SURVEY DATE: JUNE 18, 2015		
DRAFTING DATE: JULY 8, 2015		PAGE 2 OF 8
APPROVED BY: CH	DRAWN BY: SP	FILE: 15-781



LEGEND

- WELL
- WELLPAD
- TANK BATTERY
- EXISTING ROAD
- PROPOSED ROAD

CERF 10 NE CTB

SEC: 10 & 11 TWP: 21 S. RGE: 27 E. ELEVATION: 3247.1'

STATE: NEW MEXICO CO: EDDY 1800' FNL & 30' FEL(SEC. 10)

W.O. # 15-781 LEASE: CERF 10 NE SURVEY: N.M.P.M

0 2,500 FEET

0 0.05 0.1 0.2 Miles

1 IN = 1,000 FT

LOCATION MAP IMAGERY ROAD 07/08/2015 S.P.

N

devon

ENERGY PRODUCTION CO. L.P.

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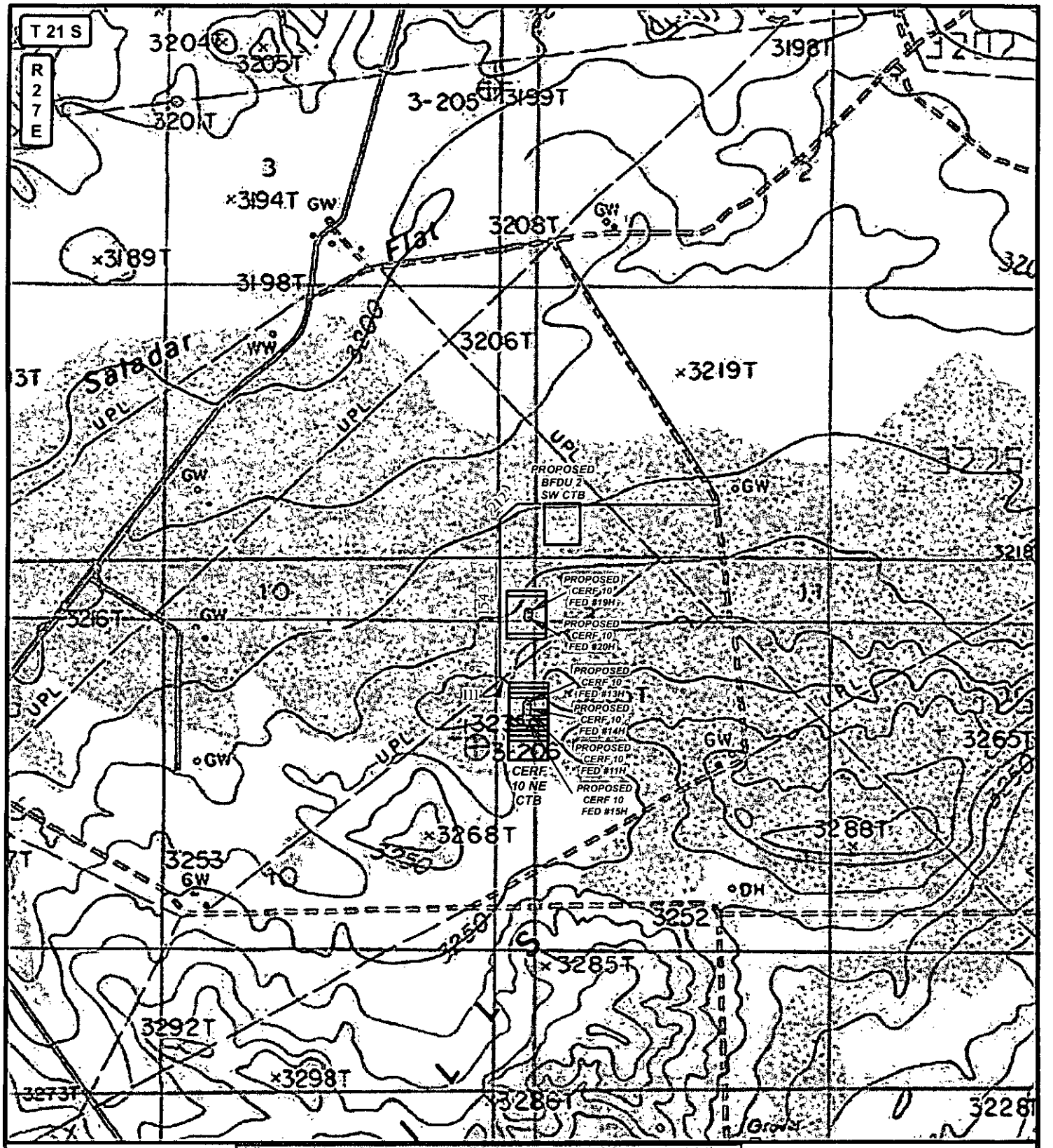
ORIG: 07/08/2015



LEGEND

- WELL
- WELLPAD
- TANK BATTERY
- EXISTING ROAD
- PROPOSED ROAD

CERF 10 NE CTB

SEC: 10 & 11 TWP: 21 S. RGE: 27 E. ELEVATION: 3247.1'

STATE: NEW MEXICO CO: EDDY 1800' FNL & 30' FEL(SEC. 10)

W.O. # 15-781 LEASE: CERF 10 NE SURVEY: N.M.P.M

0 2,500 FEET

0 0.075 0.15 0.3 Miles

1 IN = 1,250 FT

LOCATION MAP TOPO ROAD 07/08/2015 S.R.

devon

ENERGY PRODUCTION CO. L.P.

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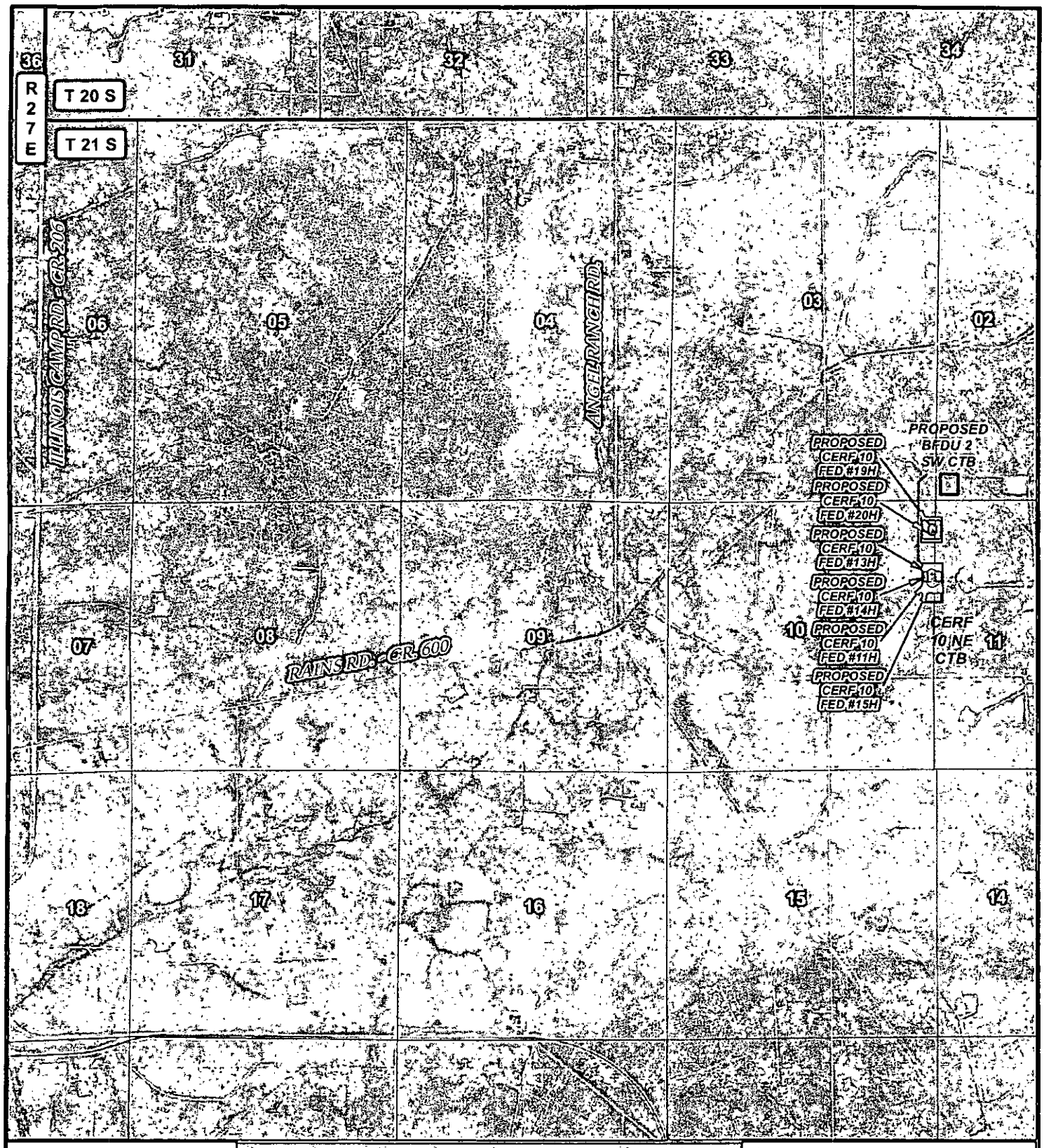
ORIG: 07/08/2015



LEGEND

- WELL
- WELLPAD
- TANK BATTERY
- EXISTING ROAD
- PROPOSED ROAD

CERF 10 NE CTB

SEC: 10 & 11 TWP: 21 S. RGE: 27 E. ELEVATION: 3247.1'

STATE: NEW MEXICO CO: EDDY 1800' FNL & 30' FEL(SEC. 10)

W.O. # 15-781 LEASE: CERF 10 NE SURVEY: N.M.P.M

0 2,500 5,000 FEET

0 0.15 0.3 0.6 Miles

1 IN = 2,500 FT

LOCATION MAP IMAGERY 07/08/2015 S.P.

N

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ENERGY PRODUCTION CO. L.P.

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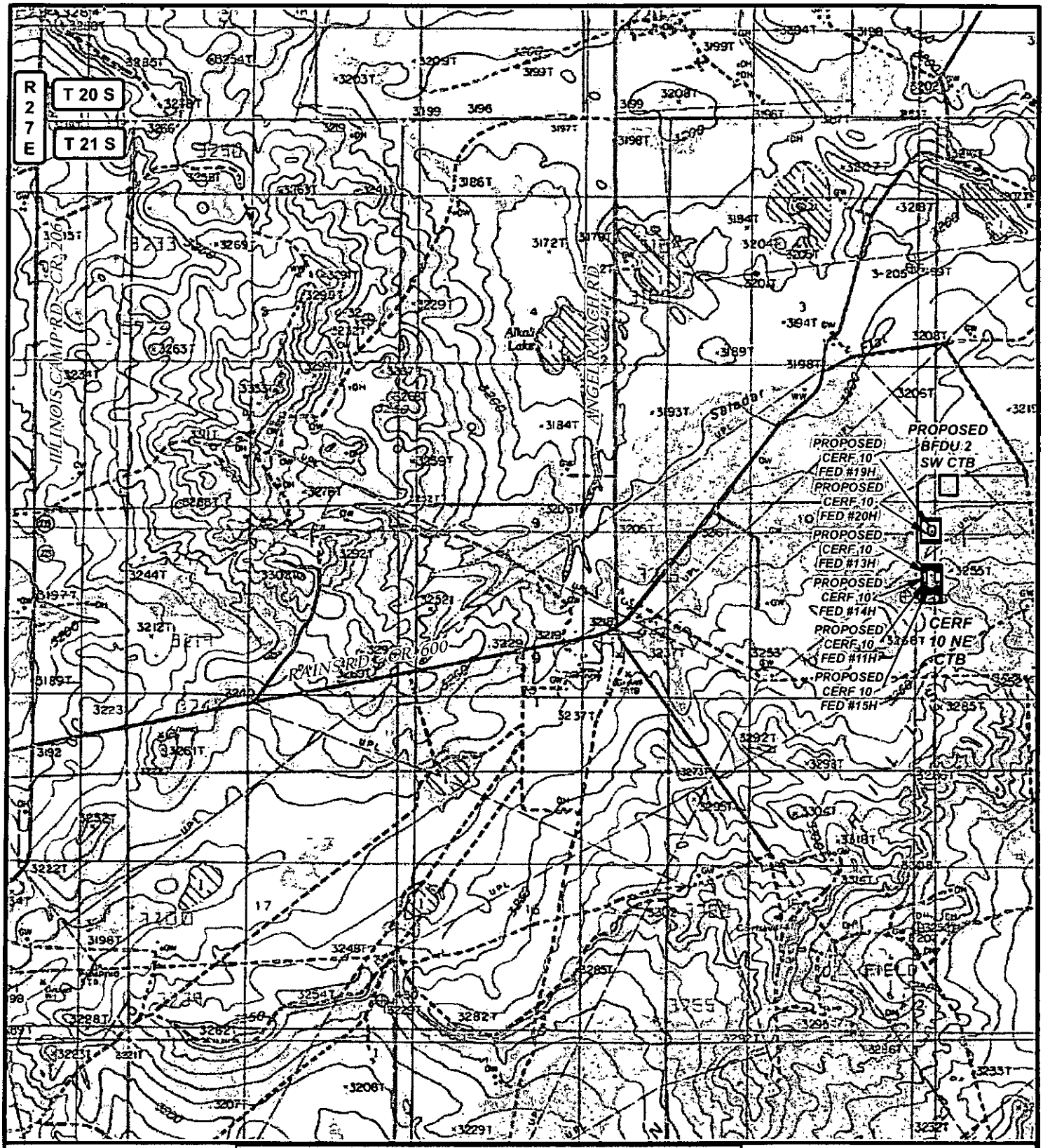

LEGEND

- WELL
- WELLPAD
- TANK BATTERY
- EXISTING ROAD
- PROPOSED ROAD

CERF 10 NE CTB

SEC: 10 & 11 TWP: 21 S. RGE: 27 E. ELEVATION: 3247.1'

STATE: NEW MEXICO CO: EDDY 1800' FNL & 30' FEL(SEC. 10)

W.O. # 15-781 LEASE: CERF 10 NE SURVEY: N.M.P.M

0 2,500 5,000 FEET

0 0.15 0.3 0.6 Miles

1 IN = 2,500 FT

LOCATION MAP IMAGERY 07/08/2015 S.P.

N

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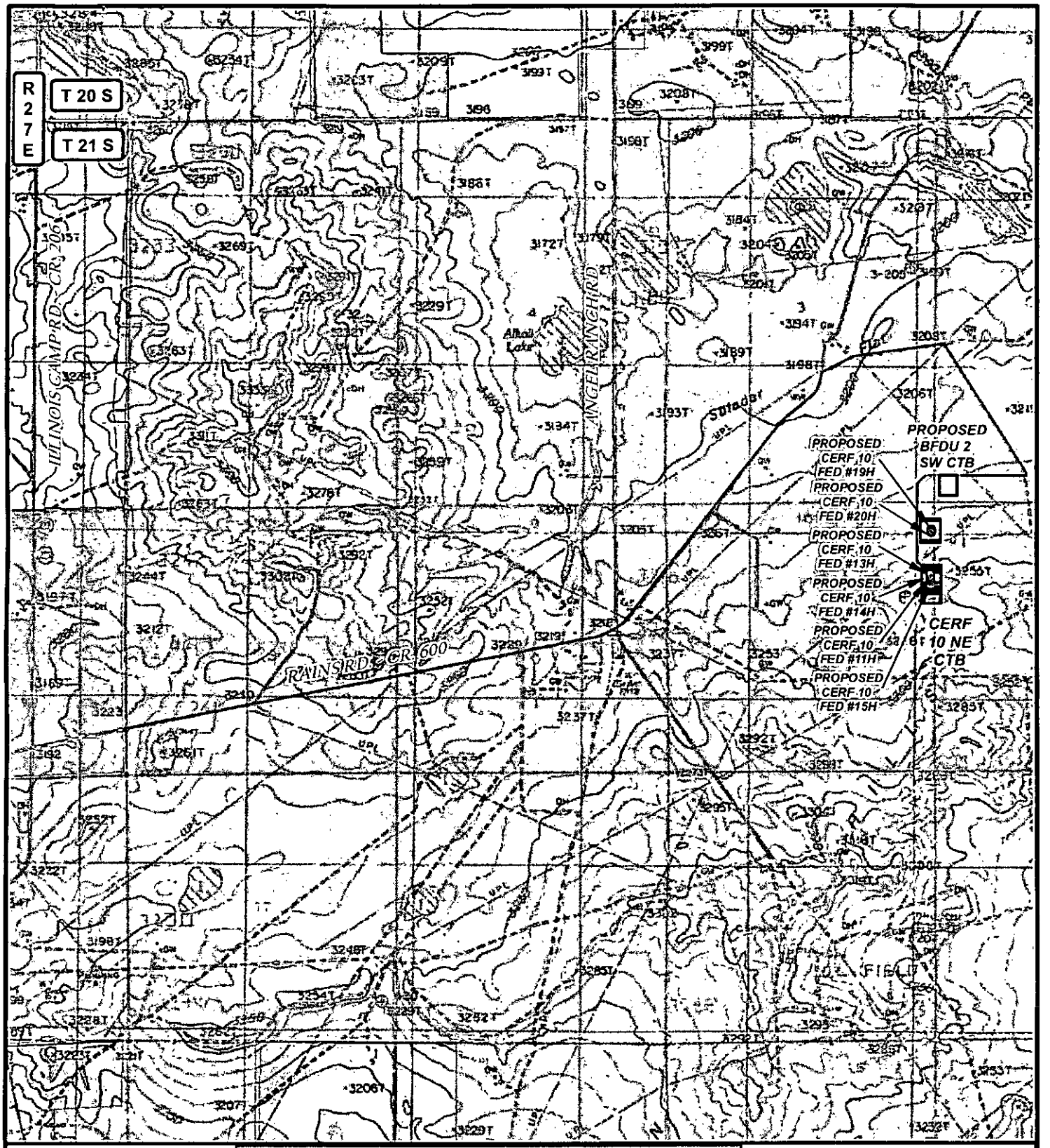

LEGEND

- WELL
- WELLPAD
- TANK BATTERY
- EXISTING ROAD
- PROPOSED ROAD
- PRIVATE
- STATE OF NM
- US BLM
- US BLUREAU OF RECLAMATION

CERF 10 NE CTB

SEC: 10 & 11 TWP: 21 S. RGE: 27 E. ELEVATION: 3247.1'

STATE: NEW MEXICO CO: EDDY 1800' FNL & 30' FEL(SEC. 10)

W.O. # 15-781 LEASE: CERF 10 NE SURVEY: N.M.P.M

0 2,500 5,000 FEET

0 0.15 0.3 0.6 Miles

1 IN = 2,500 FT

LOCATION MAP LAND STATUS 07/08/2015 S.P.

N

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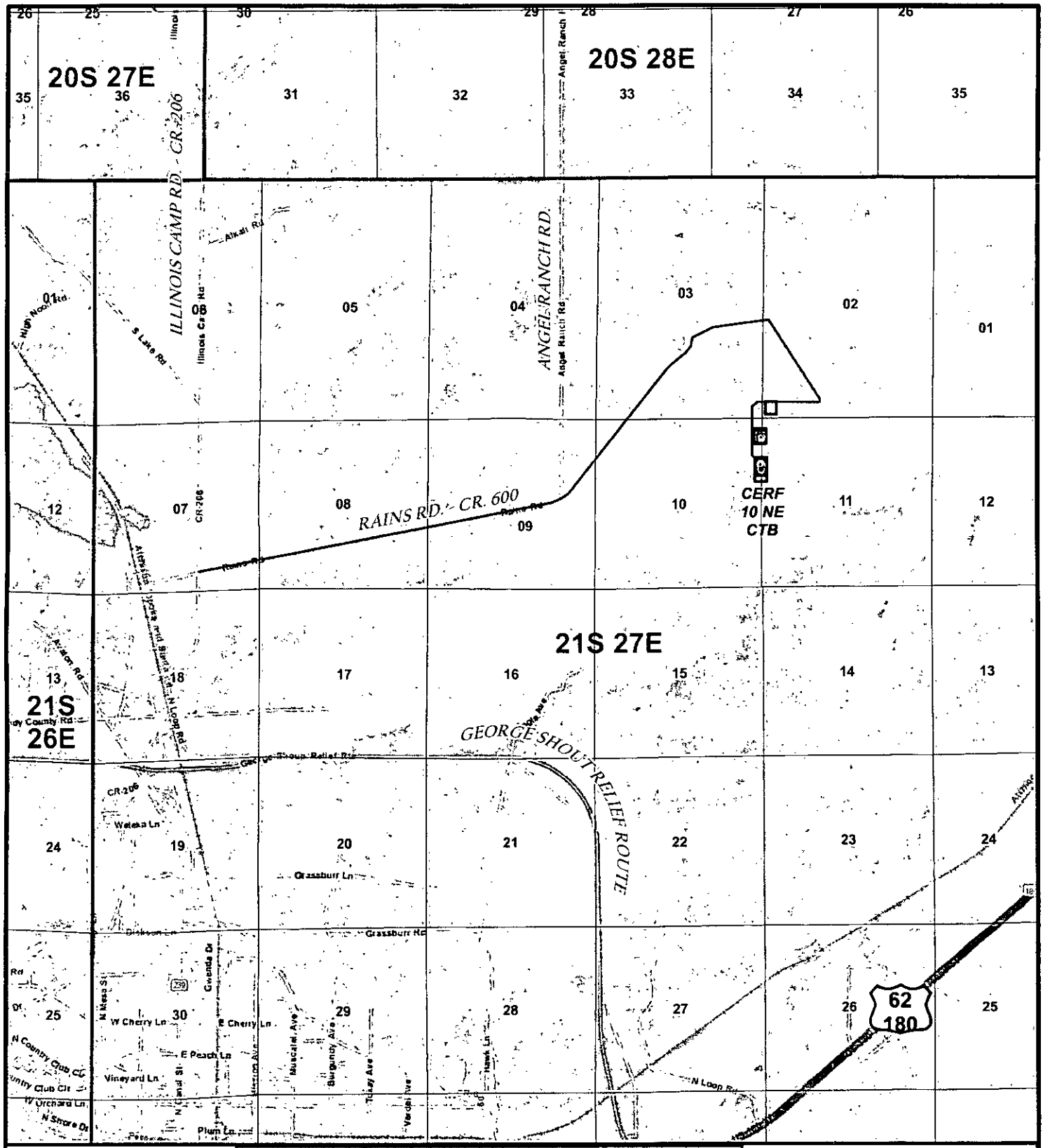

LEGEND

- WELL
- WELLPAD
- TANK BATTERY
- EXISTING ROAD
- PROPOSED ROAD

CERF 10 NE CTB

SEC: 10 & 11 TWP: 21 S. RGE: 27 E. ELEVATION: 3247.1'

STATE: NEW MEXICO CO: EDDY 1800' FNL & 30' FEL(SEC. 10)

W.O. # 15-781 LEASE: CERF 10 NE SURVEY: N.M.P.M

0 2,500 5,000 7,500 10,000 FEET

0 0.275 0.55 1.1 Miles

1 IN = 4,000 FT

VICINITY MAP 07/08/2015 S.P.

N

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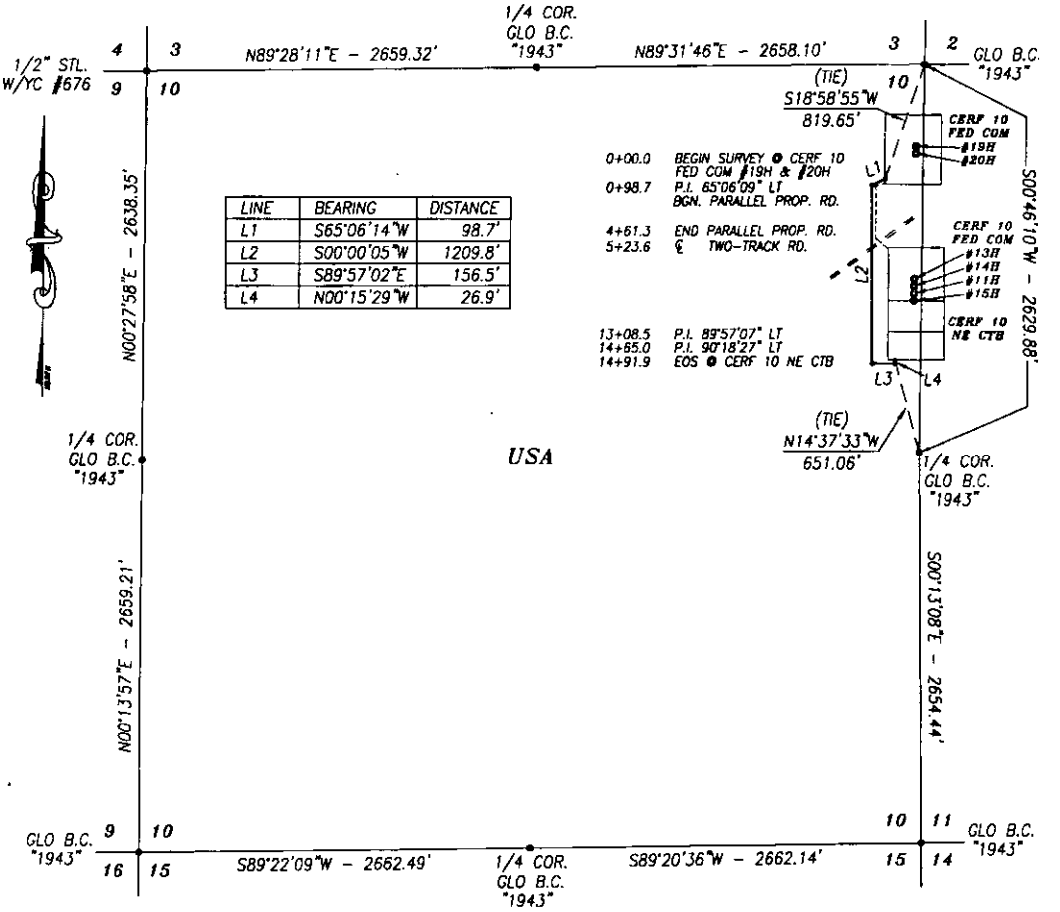
ORIG: 07/08/2015

FLOWLINE PLAT
DEVON ENERGY PRODUCTION CO., L.P.

FOUR(4) – 6" BURIED POLY FLEX FLOWLINES FROM THE CERF 10 FED COM #19H & #20H TO THE CERF 10 NE CTB IN

SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.,

EDDY COUNTY, NEW MEXICO.



LINE	BEARING	DISTANCE
L1	S65°06'14"W	98.7'
L2	S00°00'05"W	1209.8'
L3	S89°57'02"E	156.5'
L4	N00°15'29"W	26.9'

DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE AND 1491.9 FEET OR 90.42 RODS OR 0.283 MILES IN LENGTH CROSSING USA LAND IN SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE GRID VALUES.

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CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

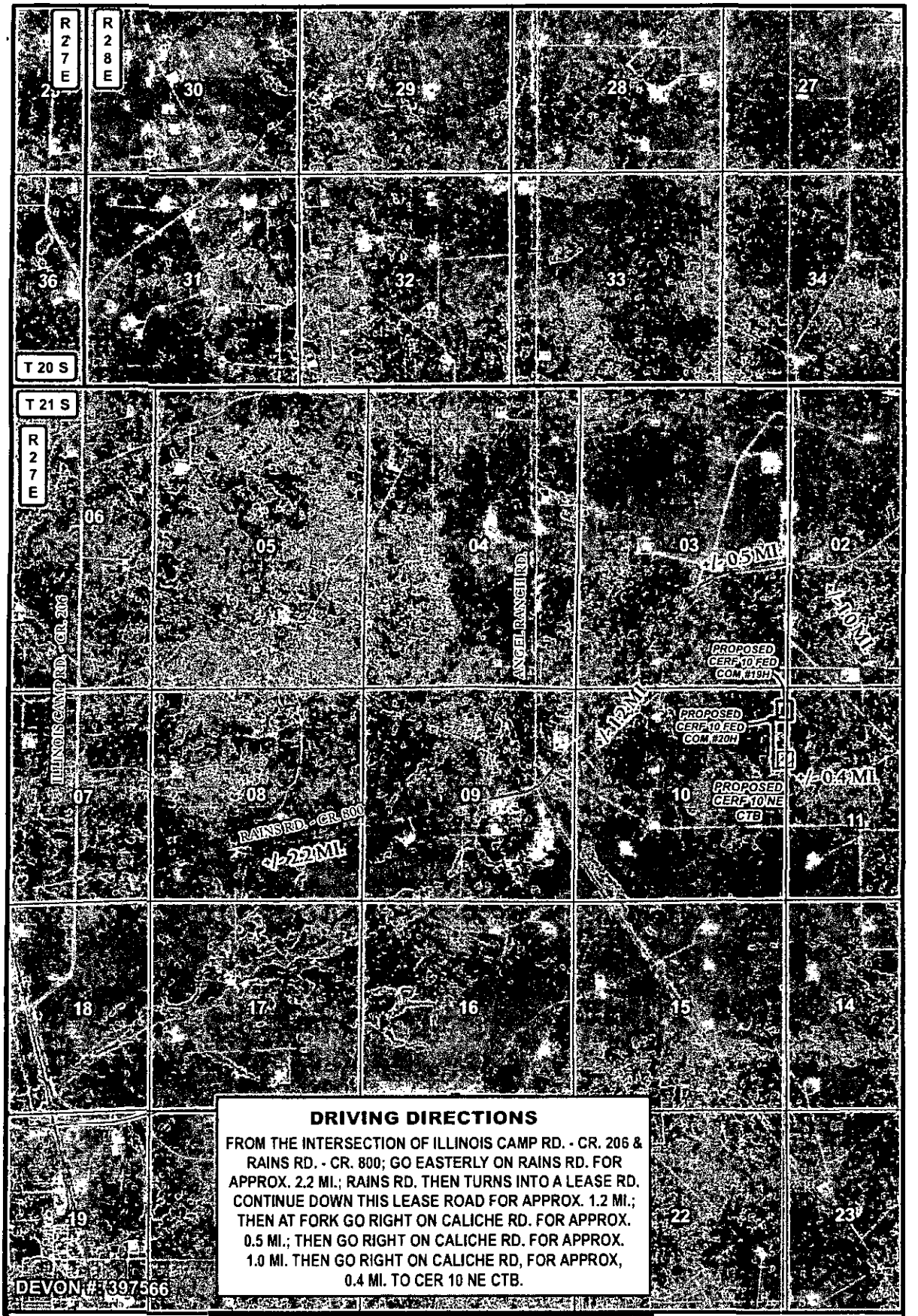
Chad Harcrow 8/24/15
CHAD HARCROW N.M.P.S. NO. 17777 DATE

1000 0 1000 2000 FEET
SCALE: 1"=1000'

DEVON ENERGY PRODUCTION CO., L.P.

SURVEY OF 4 PROPOSED FLOWLINES LOCATED IN SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST, EDDY COUNTY, NMPM, NEW MEXICO

SURVEY DATE: AUGUST 20, 2015	DEVON #397566
DRAFTING DATE: AUGUST 22, 2015	PAGE 1 OF 4
APPROVED BY: CH / DRAWN BY: SP	FILE: 15-1008



DRIVING DIRECTIONS

FROM THE INTERSECTION OF ILLINOIS CAMP RD. - CR. 206 & RAINS RD. - CR. 800; GO EASTERLY ON RAINS RD. FOR APPROX. 2.2 MI.; RAINS RD. THEN TURNS INTO A LEASE RD. CONTINUE DOWN THIS LEASE ROAD FOR APPROX. 1.2 MI.; THEN AT FORK GO RIGHT ON CALICHE RD. FOR APPROX. 0.5 MI.; THEN GO RIGHT ON CALICHE RD. FOR APPROX. 1.0 MI. THEN GO RIGHT ON CALICHE RD, FOR APPROX, 0.4 MI. TO CER 10 NE CTB.

LEGEND

- FLOWLINE
- WELL
- WELLPAD
- TANK BATTERY

CERF 10 FED COM #19H & #20H FLOWLINE

SECTION: 10	TOWNSHIP: 21 S.	RANGE: 27 E.
STATE: NEW MEXICO	COUNTY: EDDY	SURVEY: N.M.P.M
W.O. # 15-1008		LEASE: CERF 10 FED COM

0 2,500 5,000 FEET

0 0.175 0.35 0.7 Miles

1 IN = 2,750 FT

DRIVING DIRECTIONS | IMAGERY | S.P.

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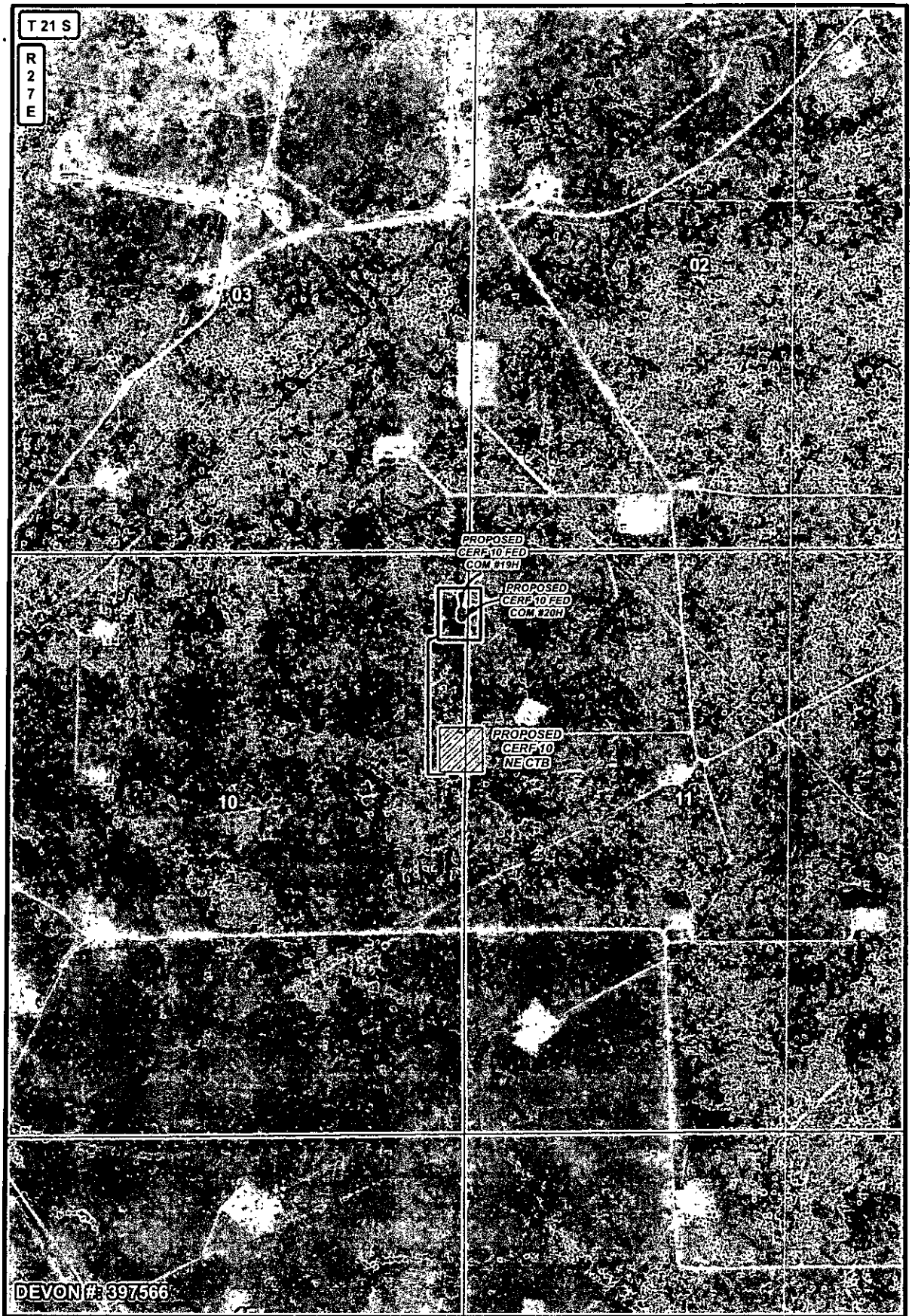
ORIG: 08/24/2015 | PAGE: 2 OF 4



LEGEND

- FLOWLINE
- WELL
- WELLPAD
- TANK BATTERY

CERF 10 FED COM #19H & #20H FLOWLINE

SECTION: 10	TOWNSHIP: 21 S.	RANGE: 27 E.
STATE: NEW MEXICO	COUNTY: EDDY	SURVEY: N.M.P.M
W.O. # 15-1008		LEASE: CERF 10 FED COM

0 2,500 FEET

0 0.05 0.1 0.2 Miles 1 IN = 1,000 FT

PIPELINE OVERVIEW IMAGERY S.P.

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ENERGY PRODUCTION CO. L.P.

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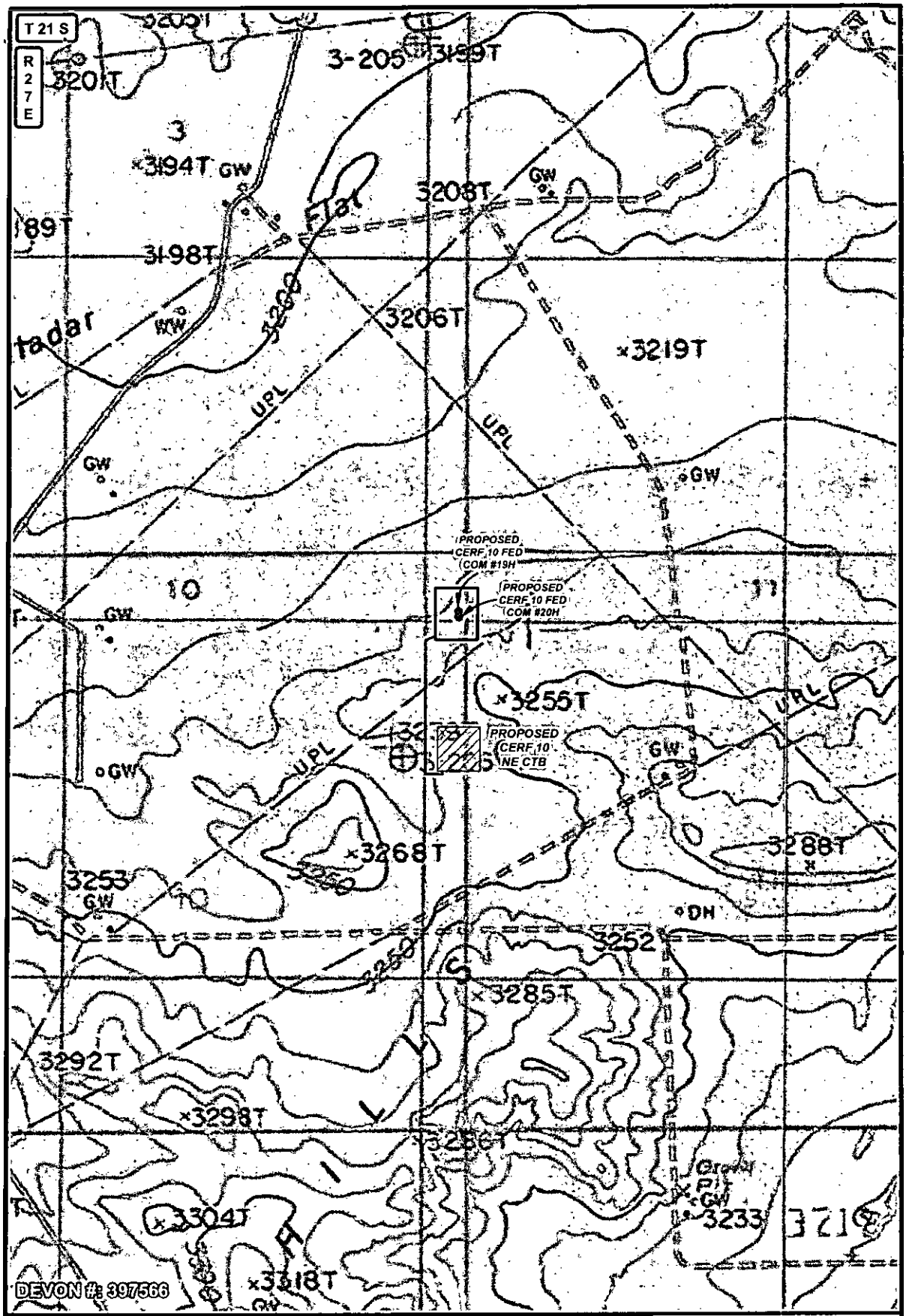

LEGEND

- FLOWLINE
- WELL
- WELLPAD
- TANK BATTERY
- PRIVATE
- STATE OF NM
- US BLM

CERF 10 FED COM #19H & #20H FLOWLINE

SECTION: 10	TOWNSHIP: 21 S.	RANGE: 27 E.
STATE: NEW MEXICO	COUNTY: EDDY	SURVEY: N.M.P.M
W.O. # 15-1008		LEASE: CERF 10 FED COM

0 2,500 FEET

0 0.05 0.1 0.2 Miles 1 IN = 1,000 FT

PIPELINE OVERVIEW | LAND STATUS | S.P.

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ORIG: 08/24/2015 | PAGE: 4 OF 4

SURFACE USE PLAN

Devon Energy Production Company, L.P.
The on-site inspection for these projects was performed on – 4/7/2015 by CEHMM

CERF 10 FED COM 20H

1. **Existing Roads:**
   a. The well site and elevation plat for the proposed well are reflected on the "Site Map". The well was staked by Harcrow Surveying, LLC.
   b. All roads into the location are depicted on the "Vicinity Map". The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattle guards, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.
   c. Directions to Location: Please see "Site Map". From the intersection of Rains Road and Illinois Camp Road (CR 206), go EastNorthEast on Rains Road for approximately 2.4 miles passing Angel Ranch Road; then turn Left (Northeast) onto a caliche road and go approximately 1.3 miles to a "Y" intersection; then turn Right (East) and go approximately 0.5 miles; then turn Right (Southeast) and go approximately 0.6 miles; then turn Right (West) and go approximately 0.4 miles to proposed road on the Left (South); proposed well is approximately 0.2 miles South.

2. **New or Reconstructed Access Roads:**
   a. The "Site Map" and "Access Road Plat" shows new constructed access road, which will be approximately 1866.9 feet from the existing lease road and will also serve the Cerf 10 Fed Com 11H, 13H, 14H, 15H & 19H wells. See "Access Road Plat". The SF299 for the Access Road ROW is attached.
   b. The maximum driving width of the access road will be 14 feet. The maximum width of surface disturbance when constructing the access road will not exceed 25 feet. The road will be crowned and ditched with 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 3 feet wide with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.
   c. When cutting fences separating ownership lines of the rancher(s), Devon will install cattle guards to prevent the loss of cattle. Devon will assume responsibility for any damages that occur to fences when moving a rig in or out of the area. No turnouts are planned.

3. **Location of Existing Wells:**
   The attached "One Mile Radius Map" shows all existing and proposed wells within a one-mile radius of the proposed location.

4. **Location of Existing and/or Proposed Production Facilities:**
   a. In the event the well is found productive, the Cerf 10 NE Central Tank Battery would be utilized and shared, located in Sec 10-T21S-R27E. See "Central Tank Battery Plat". This well will be padded with the Cerf 10 Fed Com 19H.

b. Four – 6" buried poly flex flowlines to carry water, oil & gas will run 4354.19' from the Cerf 10 Fed Com 19H & 20H to the Cerf 10 NE Central Tank Battery. See "Flowline Plat".
c. The well will be operated by means of an electric distribution line and take-off point. We will connect to the electric distribution line that is on the West side of the pad. The run is 139.9 ft., coming on the West side of the pad. See "Powerline Survey". The SF299 for the Powerline Survey ROW is attached.
d. All flow lines will adhere to API standards.
e. If the well is productive, rehabilitation plans are as follows:
    i. A closed loop system will be utilized.
    ii. The original topsoil from the well site will be returned to the location. The drill site will then be contoured as close as possible to the original state.

5. Location and Types of Water Supply:

This location will be drilled using a combination of water mud systems (outlined in the Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using the existing and proposed roads described and depicted on the "Vicinity Map". On occasion, water will be obtained from a pre-existing water well, running a pump directly to the drill rig. In cases where a poly pipeline is used to transport water for drilling purposes, proper authorizations will be secured. If a poly pipeline is used, the size, distance, and map showing route will be provided to the BLM via sundry notice.

6. Construction Materials:

Obtaining caliche: One primary wy of obtaining caliche to build locations and roads will be by "turning over" the location. This means caliche will be obtained from the actual well site. Actual amounts will vary for each pad. The procedure below has been approved by BLM personnel:

a. The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
b. Subsoil is removed and stockpiled within the surveyed well pad.
c. When caliche is found, material will be stock piled within the pad site to build the location and road.
d. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
e. Once well is drilled, the stock piled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced.
f. Neither caliche, nor subsoil will be stock piled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in the Well Site Layout or survey plat.

In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit or other established mineral pit. A BLM mineral material permit will be acquired prior to obtaining any mineral material from BLM pits or land.

7. Methods of Handling Waste Material:

a. Drill cuttings will be safely contained in a closed loop system and disposed of properly at a NMOCD approved disposal site.

b. All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary landfill.
c. The supplier will pick up salts remaining after completion of well, including broken sacks.
d. A Porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
e. Remaining drilling fluids will be sent to a closed loop system. Water produced during completion will be put into a closed loop system. Oil and condensate produced will be put into a storage tank and sold.
f. Fluids will be transported to an NMOCD approved facility and properly disposed.

8. **Ancillary Facilities:** No campsite or other facilities will be constructed as a result of this well.

9. **Well Site Layout**
a. The Rig Location Layout attachment shows the proposed well site layout and pad dimensions.
b. The Rig Location Layout attachment proposes location of sump pits and living facilities.
c. Mud pits in the active circulating system will be steel pits.
d. A closed loop system will be utilized. Devon will provide a copy of the Design Plan to the BLM.

10. **Plans for Surface Reclamation:**
a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography.
b. The location and road will be rehabilitated as recommended by the BLM.
c. If the well is deemed commercially productive, caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography. See "Interim Reclamation Diagram".
d. All disturbed areas not needed for active support of production operations will undergo interim reclamation. The portions of the cleared well site not needed for operational and safety purposes will be recontoured to a final or intermediate contour that blends with the surrounding topography as much as possible. Topsoil will be respread over areas not needed for all-weather operations. See "Interim Reclamation Diagram".

11. **Surface Ownership**
a. The surface is owned by the US Government and is administered by the Bureau of Land Management. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas.
b. The proposed road routes and the surface location will be restored as directed by the BLM.

12. Other Information:

a. The area surrounding the well site is grassland. The topsoil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, sage bush, yucca and miscellaneous weeds. No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.
b. There is no permanent or live water in the general proximity of the location.
c. There are no dwellings within 2 miles of location.
d. A Cultural Resources Examination will be completed by Lone Mountain Archaeological Services, Inc. and forwarded to the BLM office in Carlsbad, New Mexico.

13. Bond Coverage:

Bond Coverage is Nationwide; Bond # is CO-1104.

Operators Representative:

The Devon Energy Production Company, L.P. representatives responsible for ensuring compliance of the surface use plan are listed below.

James Allbee – Project Supervisor
Devon Energy Production Company, L.P.
333 W. Sheridan
Oklahoma City, OK 73102-5010
(405) 228-8698 (office)
(405) 820-8682 (Cellular)

Don Mayberry - Superintendent
Devon Energy Production Company, L.P.
Post Office Box 250
Artesia, NM 88211-0250
(575) 748-3371 (office)
(575) 746-4945 (home)

Certification

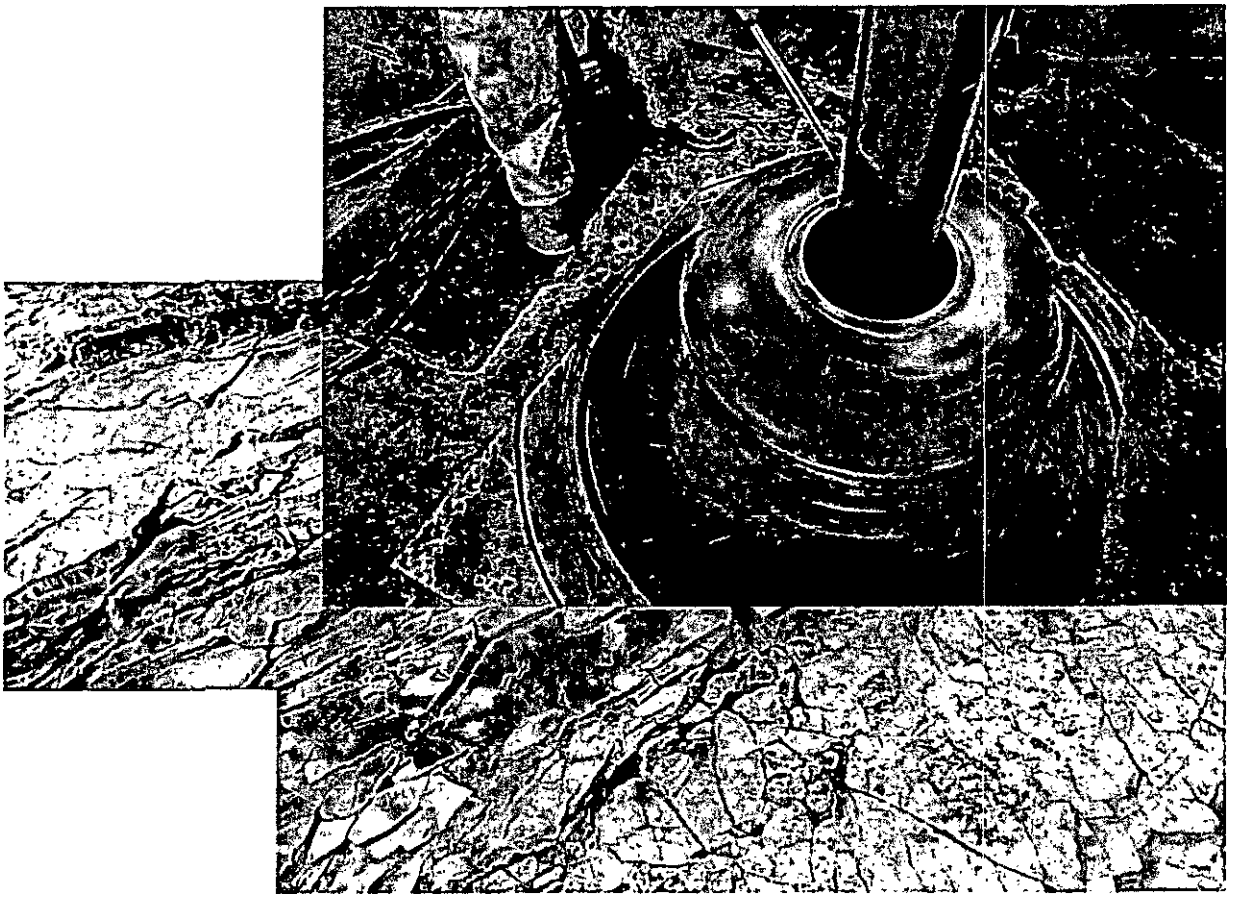
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or Devon Energy Production Company, L.P. am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

I hereby also certify that I, or Devon Energy Production Company, L.P. have made a good faith effort to provide the surface owner with a copy of the Surface Use Plan of Operations and any Conditions of Approval that are attached to the APD.

Executed this 3rd day of December, 2015.
Printed Name: Linda Good
Signed Name: Linda Good
Position Title: Regulatory Compliance Specialist
Address: 333 W. Sheridan, OKC OK 73102
Telephone: (405)-552-6558

devon

Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
June 2010

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

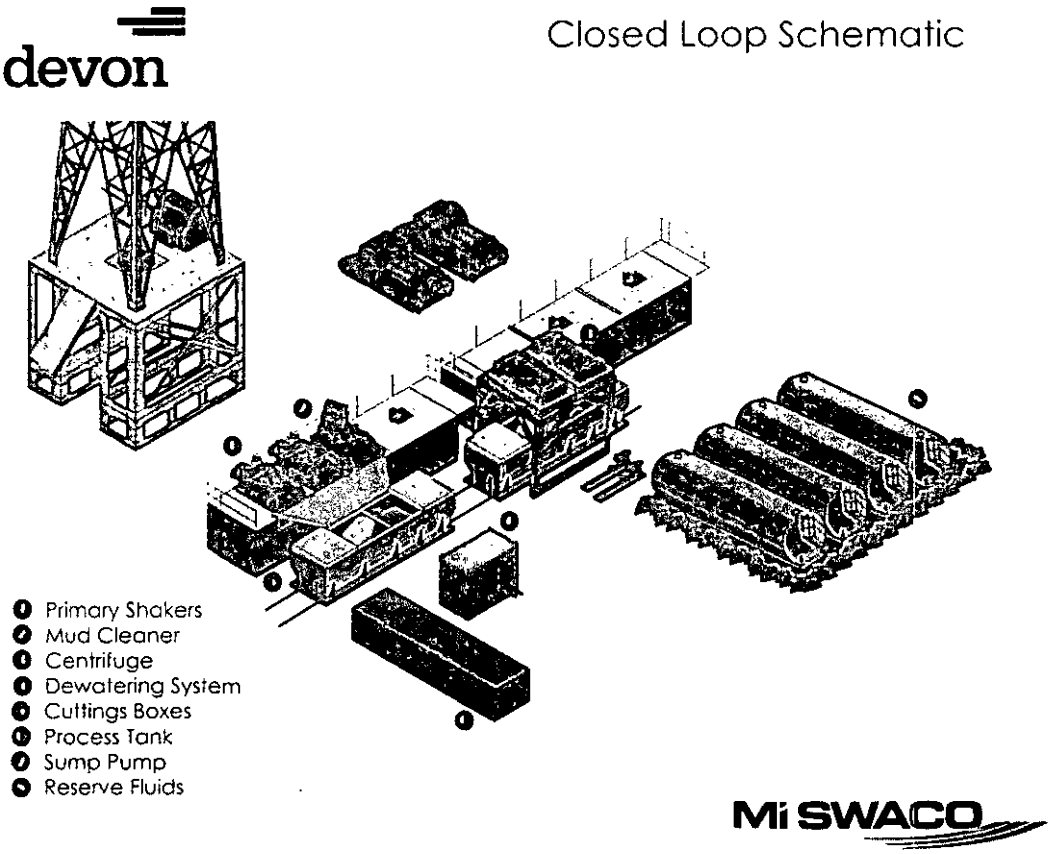
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.

NM OIL CONSERVATION
ARTESIA DISTRICT
MAY 16 2016
RECEIVED

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company, L.P.
LEASE NO.:	NMNM14768
WELL NAME & NO.:	20H-Cerf 10 Fed Com
SURFACE HOLE FOOTAGE:	600'/N & 50'/E
BOTTOM HOLE FOOTAGE	380'/N & 2310'/E
LOCATION:	Section 10, T.21 S., R.27 E., NMPM
COUNTY:	Eddy County, New Mexico

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

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Communitization Agreement:

1. The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

2. If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.

3. In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

Cave and Karst Conditions of Approval:

** 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, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

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

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

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

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

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

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

assess the situation and work with the operator on corrective actions to resolve the problem.

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

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

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

Watershed

- The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.
- Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

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

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

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

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

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

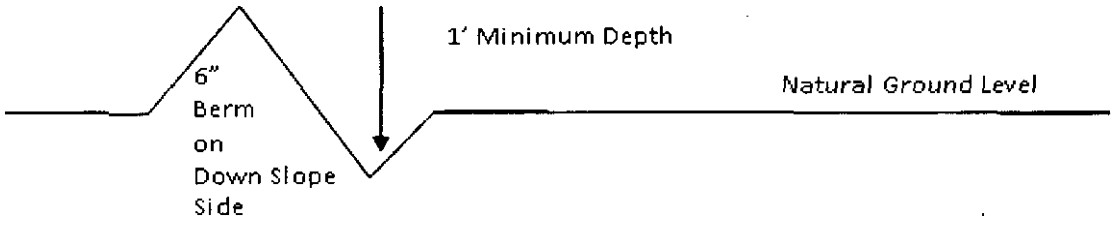
Ditching
Ditching shall be required on both sides of the road.

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

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

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

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

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

Construction Steps

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

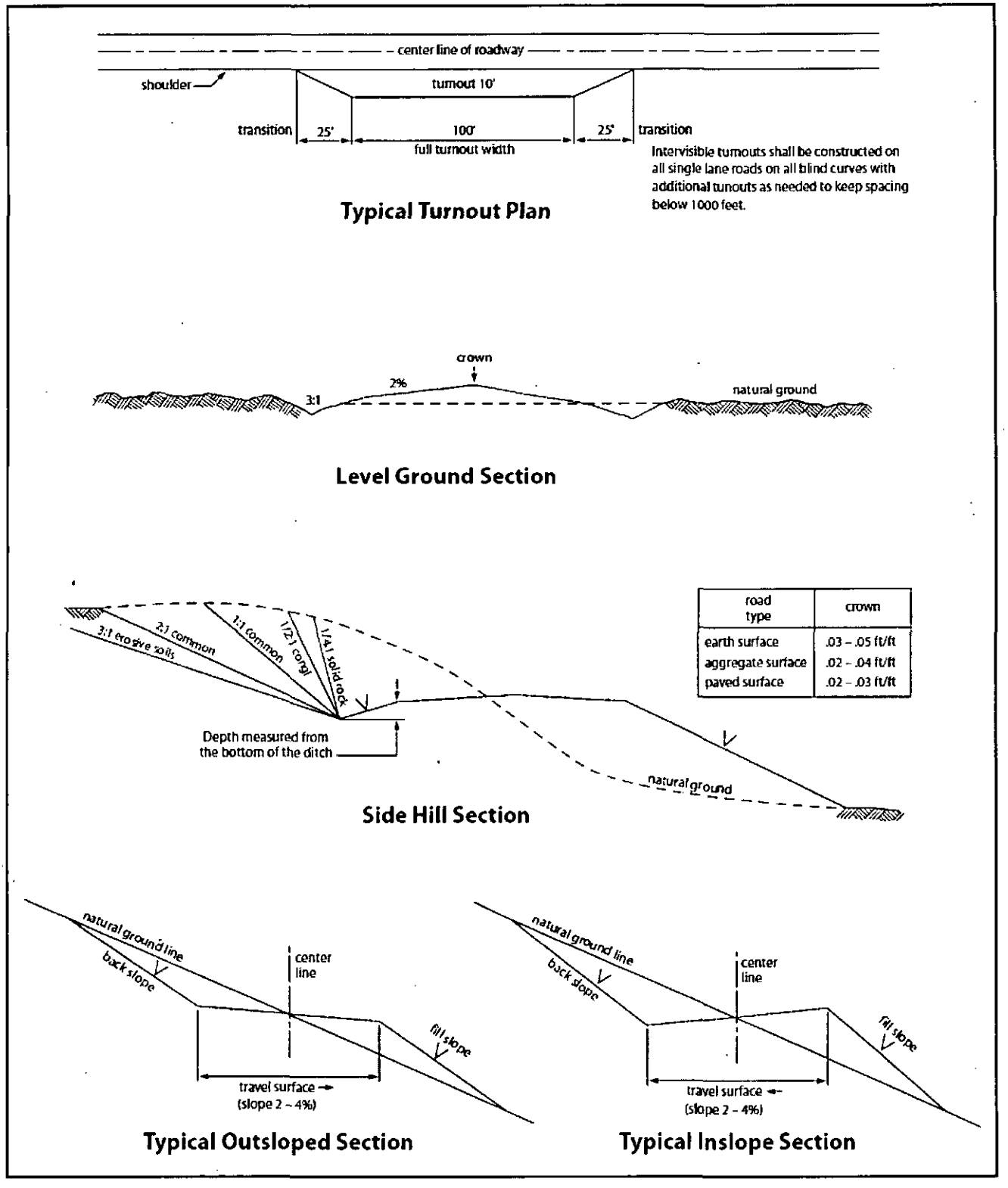


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

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

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated **500** feet prior to drilling into the **Delaware** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

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

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report. *This well assist in better understanding the shelf geologic* stratigraphy.**

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. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE.

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.

Risks:
Possibility of water flows from the Castile and the Salado.
Possibility of lost circulation from the Rustler, the Red Beds, and the Delaware.

HIGH CAVE/ KARST: 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.

ON A THREE STRING OR GREATER DESIGN: IF THE PRIMARY CEMENT JOB ON THE SURFACE CASING DOES NOT CIRCULATE, THEN THE NEXT TWO CASING STRINGS MUST BE CEMENTED TO SURFACE.

Freshwater mud to be used to setting depth of the surface casing.

1. The **20** inch surface casing shall be set at approximately **360** feet **(to protect all usable ware and cave/ karst zones, and if salt is encountered, set casing at least 25 feet above the salt)** and cemented to the surface. **Excess calculates to negative 10% - Additional cement shall be required.**

    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.

2. The minimum required fill of cement behind the **13 3/8** inch first (1st) intermediate casing which shall be set at **720** feet **(to avoid setting in the Reef, and to allow more room for DV Tool if severe lost circulation occurs)** is:

    ☒ 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.**

3. The minimum required fill of cement behind the **9 5/8** inch second (2nd) intermediate casing is:

Option 1 (Single Stage):

☒ 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.**

Option 2 (Two Stage):

DV tool shall be set a minimum of 50 feet below previous shoe and a minimum of 200 feet above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

Operator proposed DV tool depth of 700 feet does not meet the setting criteria. Operator shall adjust cement proportionately considering the described requirements.

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 approved top of cement 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. Additional cement may be required since excess was calculated to be 2%.**

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

4. The minimum required fill of cement behind the **5-1/2** inch production casing is:

Option 1 (Single Stage):

☒ Cement tie-back is appropriate as proposed. Operator shall provide method of verification. **Additional cement may be required since excess was calculated to be 21%.**

Option 2 (Two Stage):

Operator has proposed DV tool at depth of 750 feet, but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50 feet below previous shoe and a minimum of 200 feet above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

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 approved top of cement on the next stage.

b. Second stage above DV tool:

☒ Cement tie-back is appropriate as proposed. Operator shall provide method of verification. **Excess calculates to 0% - Additional cement shall be required.**

5. 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. **For H&P rigs – the stump test is not an approved BOP test. Equipment shall be tested when mounted on well head.**

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. **A variance is granted for the use of a diverter on the 20 inch surface casing.**

4. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the 13 3/8 inch intermediate casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi.**
    a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
    b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
    c. **Manufacturer representative shall install the test plug for the initial BOP test.**
    d. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
    e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

    d. The results of the test shall be reported to the appropriate BLM office.

    e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

    f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

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

E. 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.

KGR 05082016

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install

effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

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

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

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

B. PIPELINES
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.

( ) seed mixture 1	( ) seed mixture 3
(X) seed mixture 2	( ) seed mixture 4
( ) seed mixture 2/LPC	( ) 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).

Seed Mixture 2, for Sandy Sites

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

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

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

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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

NMOCD CONDITION OF APPROVAL

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