

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMNM43564

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
GAUCHO 21 FED 6H9. API Well No.
30-025-44178-00-X110. Field and Pool or Exploratory Area
WC025G06S223421L-BONE SPRING11. County or Parish, State
LEA COUNTY, NM

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

DEVON ENERGY PRODUCTION COMPANY

Contact: REBECCA DEAL

Email: Rebecca.Deal@dev.com

3a. Address

333 WEST SHERIDAN AVENUE
OKLAHOMA CITY, OK 73102

3b. Phone No. (include area code)

(405) 278-8429

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

Sec 21 T22S R34E 175FSL 185FEL
32.370411 N Lat, 103.467056 W Lon

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

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

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

Devon Energy Production Co. respectfully requests the following changes to the original APD of the Gauch 21 Fed 6H:

SHL move from 175' FSL & 185' FEL to 326' FSL & 515' FEL, both 21-22S-34E

MD change from 14819' to 15,001'

Attached is an updated C-102 reflecting SHL move, Directional Plan, & Drilling plan reflecting cement volume changes, to reflect change in MD, and operational items, such as batch/preset surface casing options.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Engineering is good. Surface casing 5-55 54.5#
NRS JB 7-18-18 USE existing COA'S

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

Electronic Submission #413157 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION COMPANY, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 05/04/2018 (18PP0950SE)

Name (Printed/Typed) REBECCA DEAL

Title REGULATORY COMPLIANCE PROFESSI

Signature (Electronic Submission)

Date 05/02/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

Date

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

Office

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.

(Instructions on page 2)

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

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

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-44178	² Pool Code 97922	³ Pool Name WC-025 G-06 S223421L;BONE SPRING
⁴ Property Code 30864	⁵ Property Name GAUCHO 21 FED	
⁷ OGRID No. 6137	⁶ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁸ Well Number 6H
		⁹ Elevation 3428.1

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	21	22 S	34 E		326	SOUTH	515	EAST	LEA

¹¹ Bottom Hole Location If Different From Surface

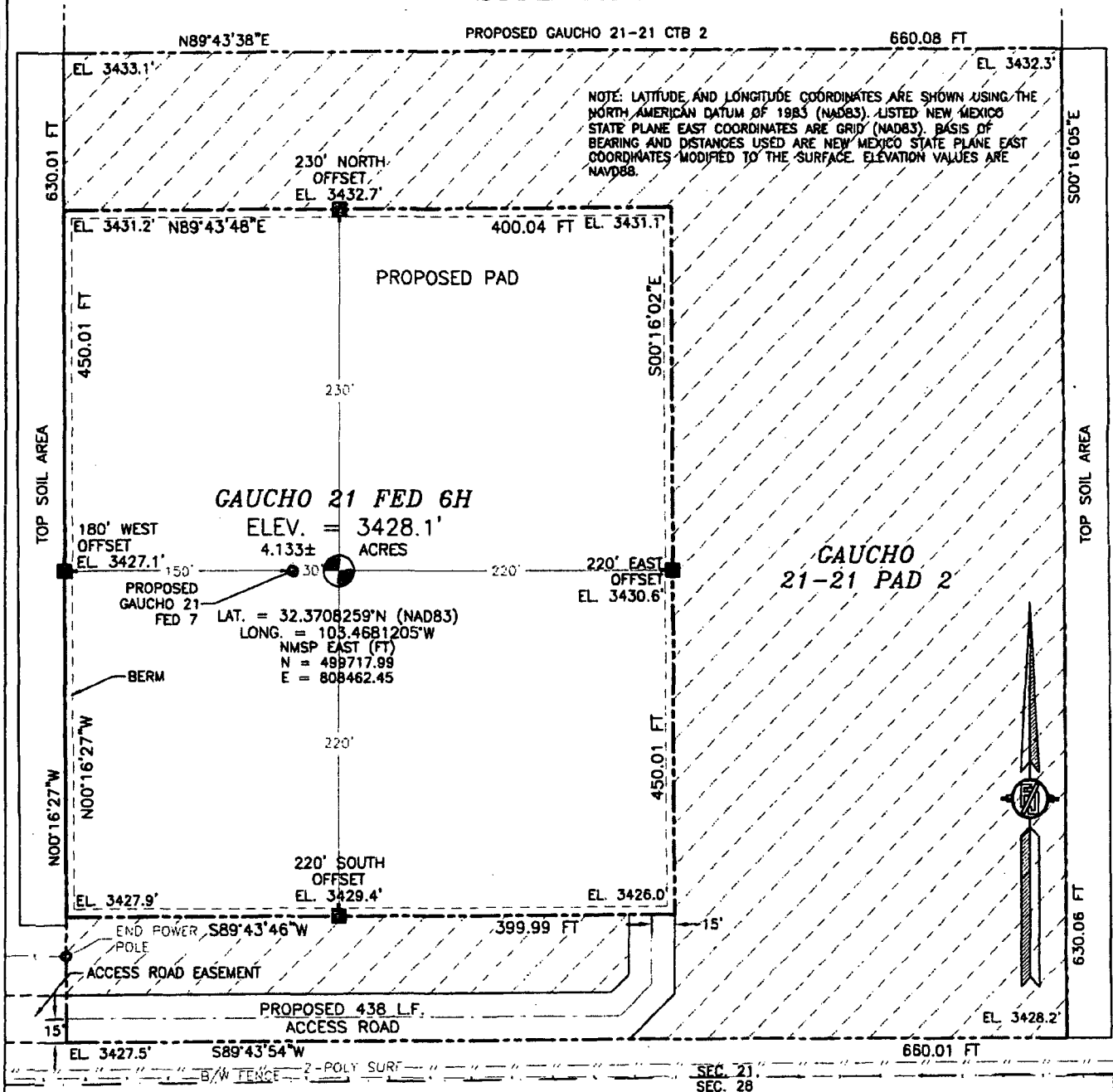
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	21	22 S	34 E		330	NORTH	380	EAST	LEA

¹² Dedicated Acres 160	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

N89°24'04"E 2638.77 FT NW CORNER SEC. 21 LAT. = 32.3844435°N LONG. = 103.4835441°W NMSP EAST (FT) N = 504634.03 E = 803661.09 N/4 CORNER SEC. 21 LAT. = 32.3844614°N LONG. = 103.4749979°W NMSP EAST (FT) N = 504661.61 E = 806299.25 W/4 CORNER SEC. 21 LAT. = 32.3771852°N LONG. = 103.4835545°W NMSP EAST (FT) N = 501993.36 E = 803678.74 SW CORNER SEC. 21 LAT. = 32.3699343°N LONG. = 103.4836025°W NMSP EAST (FT) N = 499355.33 E = 803684.98		N89°40'23"E 2651.63 FT BOTTOM OF HOLE LAT. = 32.3835399°N LONG. = 103.4676430°W NMSP EAST (FT) N = 504344.64 E = 808572.45 NE CORNER SEC. 21 LAT. = 32.3844443°N LONG. = 103.4664102°W NMSP EAST (FT) N = 504676.74 E = 808950.37 E/4 CORNER SEC. 21 LAT. = 32.3771888°N LONG. = 103.4664274°W NMSP EAST (FT) N = 502037.10 E = 808966.44 SE CORNER SEC. 21 LAT. = 32.3699327°N LONG. = 103.4664562°W NMSP EAST (FT) N = 499397.22 E = 808978.92		16 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore enacted by the division. <u>Rebecca Deal</u> 5/2/2018 Signature Date Rebecca Deal, Regulatory Analyst Printed Name <u>rebecca.deal@dvn.com</u> E-mail Address
NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. ELEVATION VALUES ARE NAVD83. GAUCHO 21 FED 6H ELEV. = 3428.1' LAT. = 32.3708259°N (NAD83) LONG. = 103.4681205°W NMSP EAST (FT) N = 499717.99 E = 808462.45 SURFACE LOCATION		17 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. <u>ELIMON F. JARAMILLO</u> Date of Survey <u>ELIMON F. JARAMILLO</u> Signature and Seal of Professional Surveyor Certificate Number: <u>ELIMON F. JARAMILLO, PLS 12797</u> SURVEY NO. 5331C		

SECTION 21, TOWNSHIP 22 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE MAP



SCALE 1" = 100'
DIRECTIONS TO LOCATION

FROM STATE HIGHWAY 128 AND CR 21 (DELAWARE BASIN) GO NORTH ON CR 21 8.0 MILES, THEN EAST 1.3 MILES, TURN LEFT AND GO NORTH-NORTHWEST 3.6 MILES, TURN RIGHT ON CALICHE ROAD AND GO EAST 0.6 OF A MILE, TURN RIGHT AND GO SOUTH 0.32 OF A MILE, TURN LEFT AND GO 0.2 OF A MILE TO EXISTING GAUCHO "21" FED. 3H & 4H PAD FROM SOUTHEAST PAD CORNER FOLLOW PROPOSED ROAD SURVEY EAST 0.68 MILE TO THE SOUTHWEST PAD CORNER FOR THIS LOCATION.

LAND STATUS: BLM

DEVON ENERGY PRODUCTION COMPANY, L.P.
GAUCHO 21 FED 6H

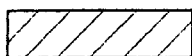
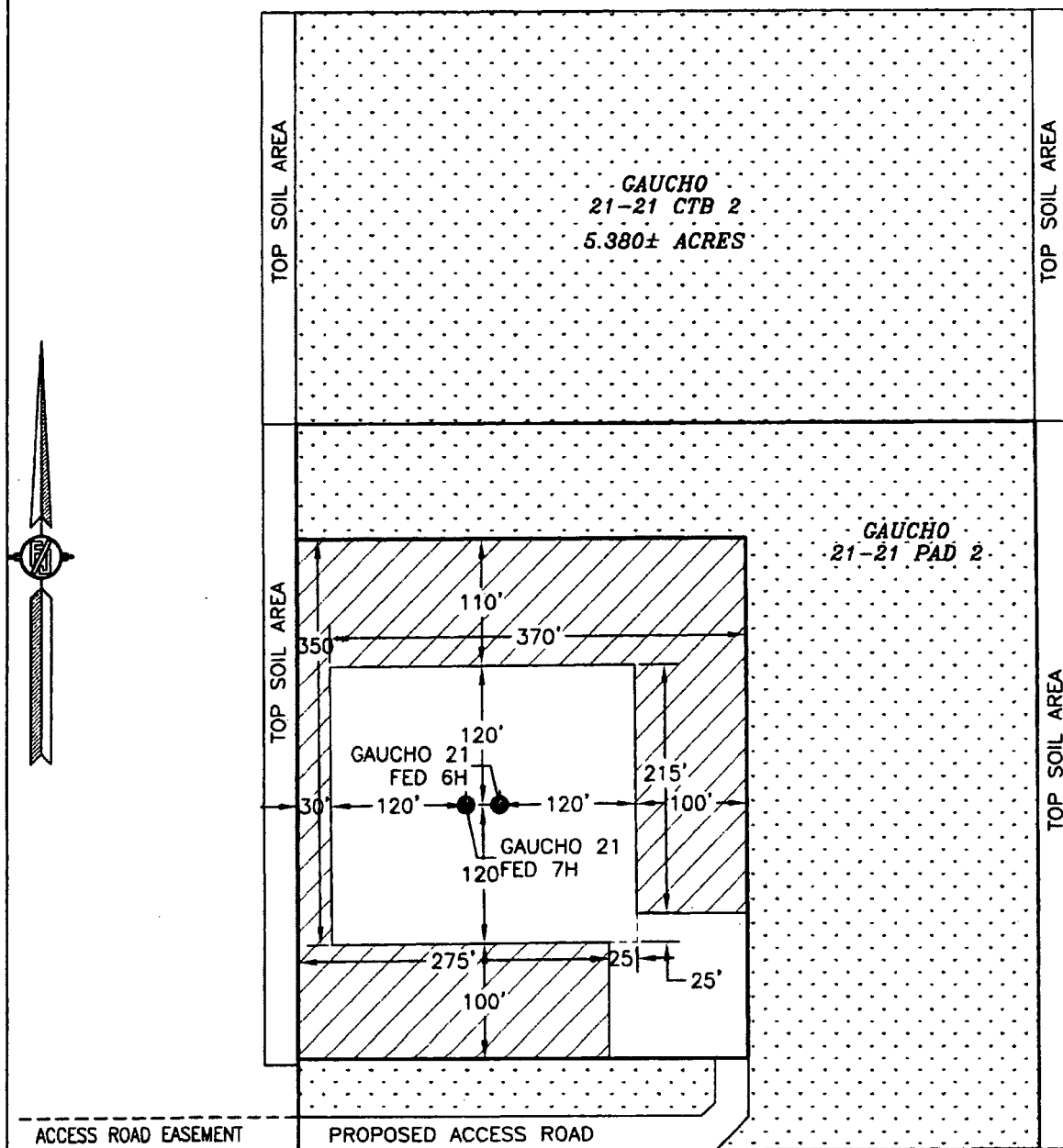
LOCATED 326 FT. FROM THE SOUTH LINE
AND 515 FT. FROM THE EAST LINE OF
SECTION 21, TOWNSHIP 22 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

MARCH 9, 2018

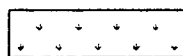
SURVEY NO. 5331C

MADRON SURVEYING, INC. 351 SOUTH CANAL
(505) 234-3341 **CARLSBAD, NEW MEXICO**

SECTION 21, TOWNSHIP 22 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN



DENOTES INTERIM PAD
RECLAMATION AREA



DENOTES GRADING SITE
RECLAMATION AREA

015 75 150 300
SCALE 1" = 150'

2.300± ACRES INTERIM PAD RECLAMATION AREA
5.112± ACRES GRADING SITE RECLAMATION AREA
2.135± ACRES NON-RECLAIMED AREA
9.547± ACRES GAUCHO 21-21 PAD 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
GAUCHO 21 FED 6H
LOCATED 326 FT. FROM THE SOUTH LINE
AND 515 FT. FROM THE EAST LINE OF
SECTION 21, TOWNSHIP 22 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

LAND STATUS: BLM

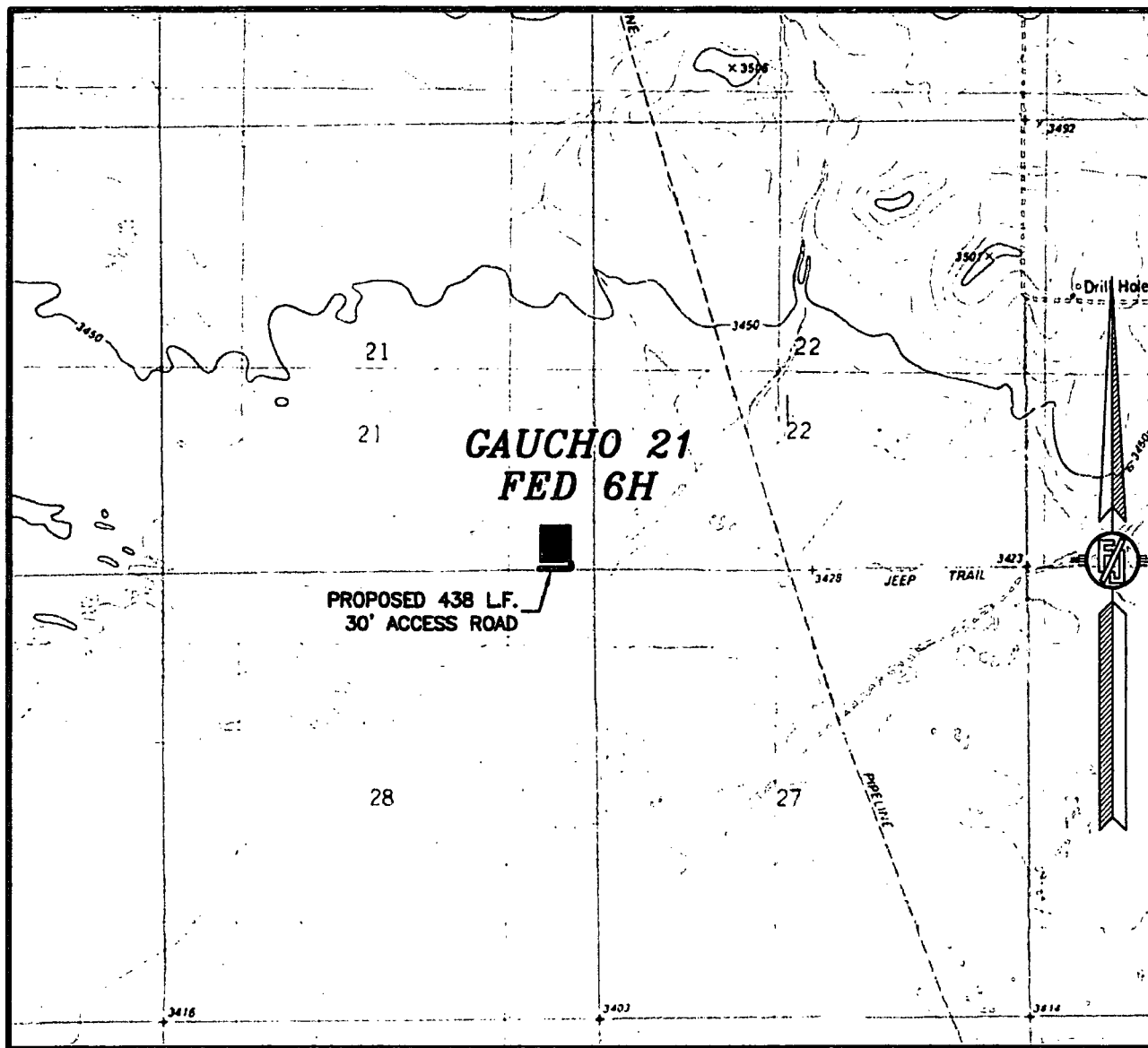
MARCH 9, 2018 SURVEY NO. 5331C

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 21, TOWNSHIP 22 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
SAN SIMON SINK
SAN SIMON RANCH

LAND STATUS: BLM

NOT TO SCALE

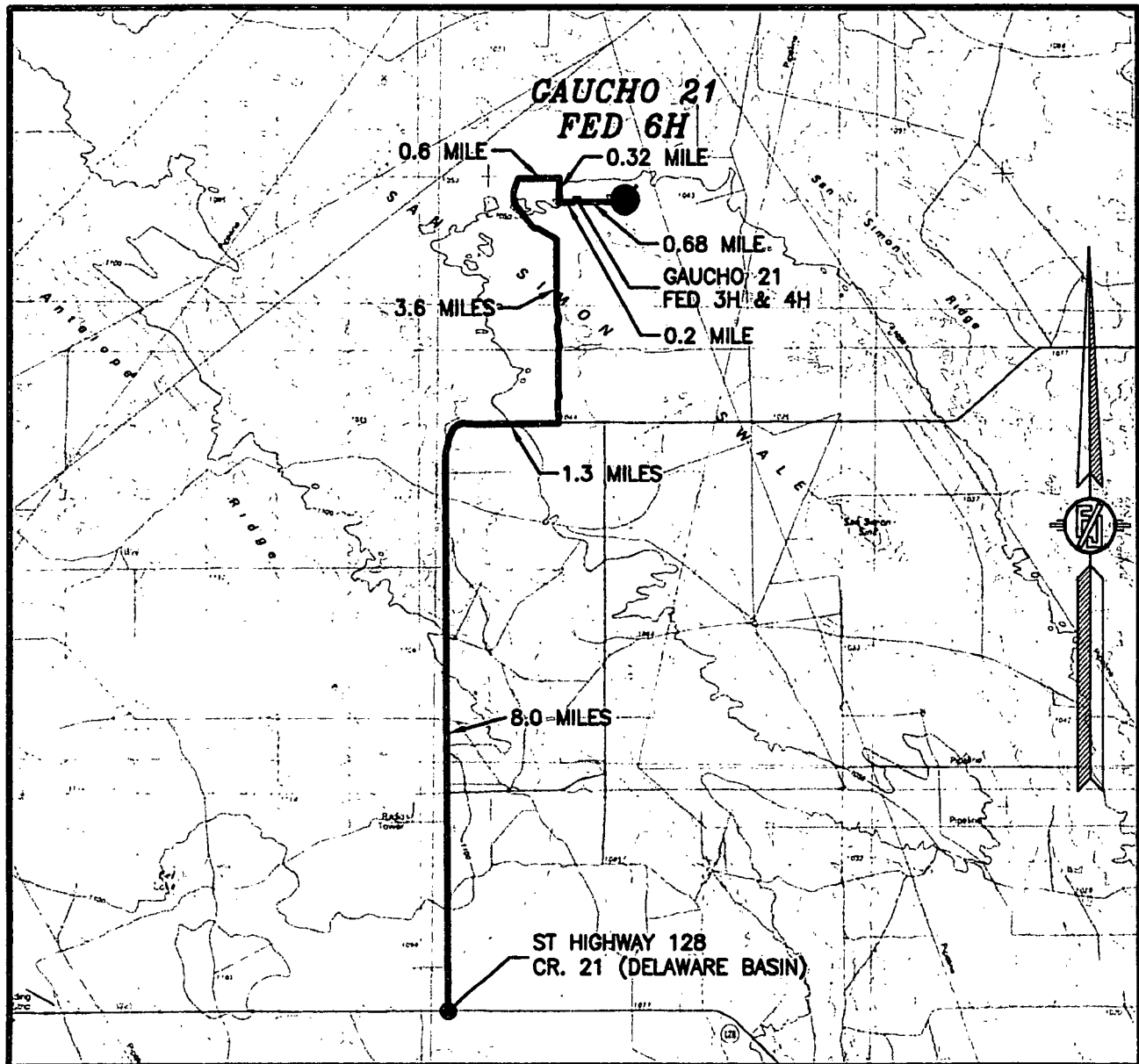
DEVON ENERGY PRODUCTION COMPANY, L.P.
GAUCHO 21 FED 6H

LOCATED 326 FT. FROM THE SOUTH LINE
AND 515 FT. FROM THE EAST LINE OF
SECTION 21, TOWNSHIP 22 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

MARCH 9, 2018

MADRON SURVEYING, INC. 331 SOUTH CANAL SURVEY NO. 5331C
(575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 21, TOWNSHIP 22 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM STATE HIGHWAY 128 AND CR 21 (DELAWARE BASIN)
GO NORTH ON CR 21 8.0 MILES, THEN EAST 1.3 MILES,
TURN LEFT AND GO NORTH-NORTHWEST 3.6 MILES, TURN
RIGHT ON CALICHE ROAD AND GO EAST 0.6 OF A MILE,
TURN RIGHT AND GO SOUTH 0.32 OF A MILE, TURN LEFT
AND GO 0.2 OF A MILE TO EXISTING GAUCHO "21" FED 3H
& 4H PAD AND FROM SOUTHEAST PAD CORNER FOLLOW
PROPOSED ROAD SURVEY EAST 0.68 MILE TO THE
SOUTHWEST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

GAUCHO 21 FED 6H

LOCATED 326 FT. FROM THE SOUTH LINE
AND 515 FT. FROM THE EAST LINE OF
SECTION 21, TOWNSHIP 22 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

MARCH 9, 2018

LAND STATUS: BLM

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

SURVEY NO. 5331C
CARLSBAD, NEW MEXICO

SECTION 21, TOWNSHIP 22 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEB. 2017

LAND STATUS: BLM

DEVON ENERGY PRODUCTION COMPANY, L.P.
GAUCHO 21 FED 6H

LOCATED 326 FT. FROM THE SOUTH LINE
AND 515 FT. FROM THE EAST LINE OF
SECTION 21, TOWNSHIP 22 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

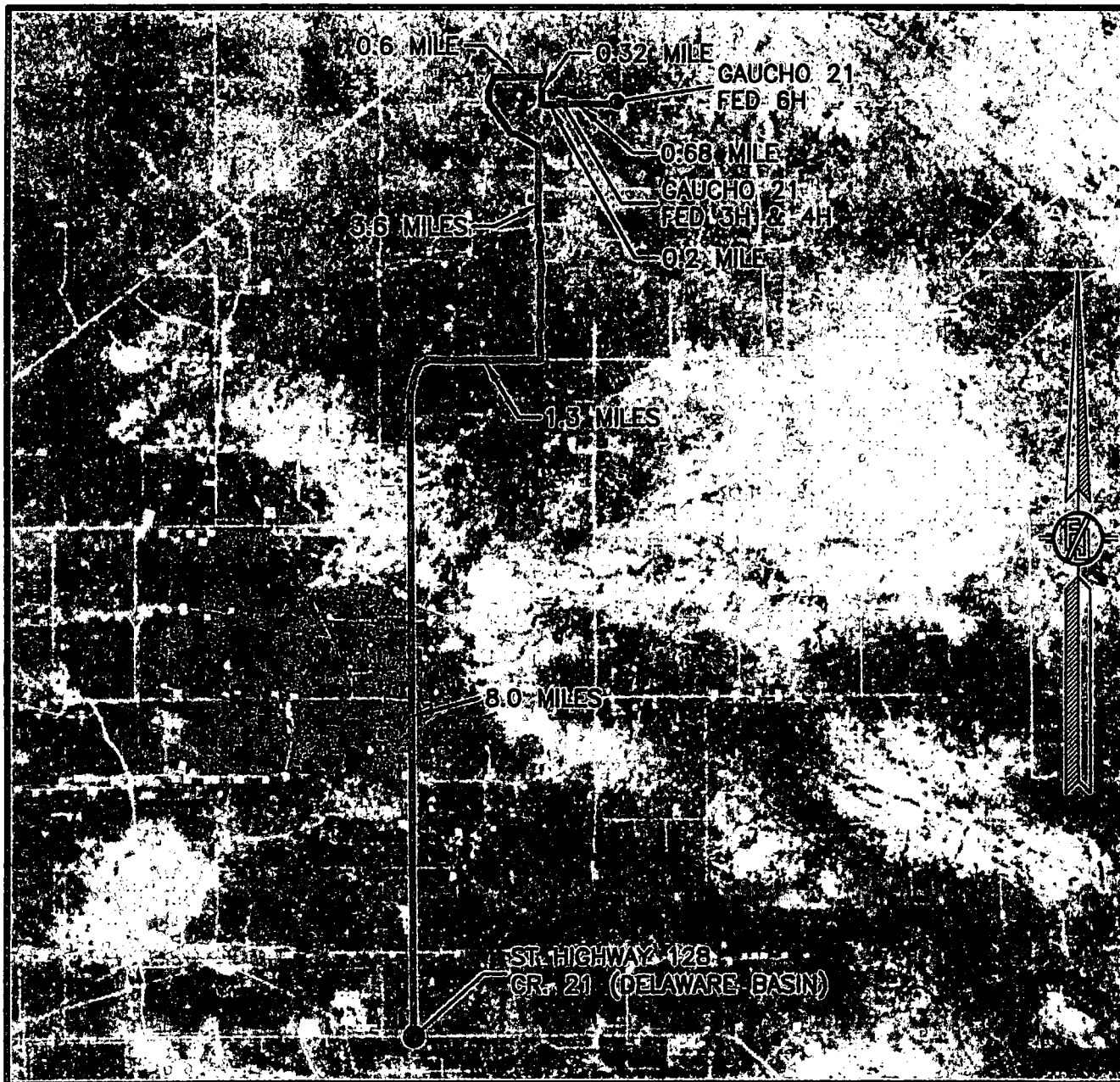
MARCH 9, 2018

SURVEY NO. 5331C

MADRON SURVEYING, INC. 301 SOUTH CANAL
(575) 234-5341

CARLSBAD, NEW MEXICO

SECTION 21, TOWNSHIP 22 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEB. 2017

LAND STATUS: BLM

DEVON ENERGY PRODUCTION COMPANY, L.P.
GAUCHO 21 FED 6H

LOCATED 326 FT. FROM THE SOUTH LINE
AND 515 FT. FROM THE EAST LINE OF
SECTION 21, TOWNSHIP 22 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

MARCH 9, 2018

SURVEY NO. 5331C

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

PLAN VIEW

GAUCHO
21-21 CTB 2

GAUCHO
21-21 PAD 2

LIMITS OF
EARTHWORK
3:1 SLOPE (TYP.)

COMBINED
PROPOSED PAD
EL. = 3431.0'

GAUCHO
21-21 CTB 2
CENTER POINT

GAUCHO
21-21 PAD 2
CENTER POINT

GAUCHO 21
FED 6H

GAUCHO 21
FED 7H

LIMITS OF
EARTHWORK
3:1 SLOPE (TYP.)

012 60 120 240
SCALE 1" = 120'

DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
FOR GAUCHO 21 FED 6H
SECTION 21, TOWNSHIP 22 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

EARTHWORK QUANTITIES
GAUCHO 21-21 PAD & CTB 2

CUT	FILL	NET
27191 CU. YD	31163 CU. YD	3972 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

LAND STATUS: BLM

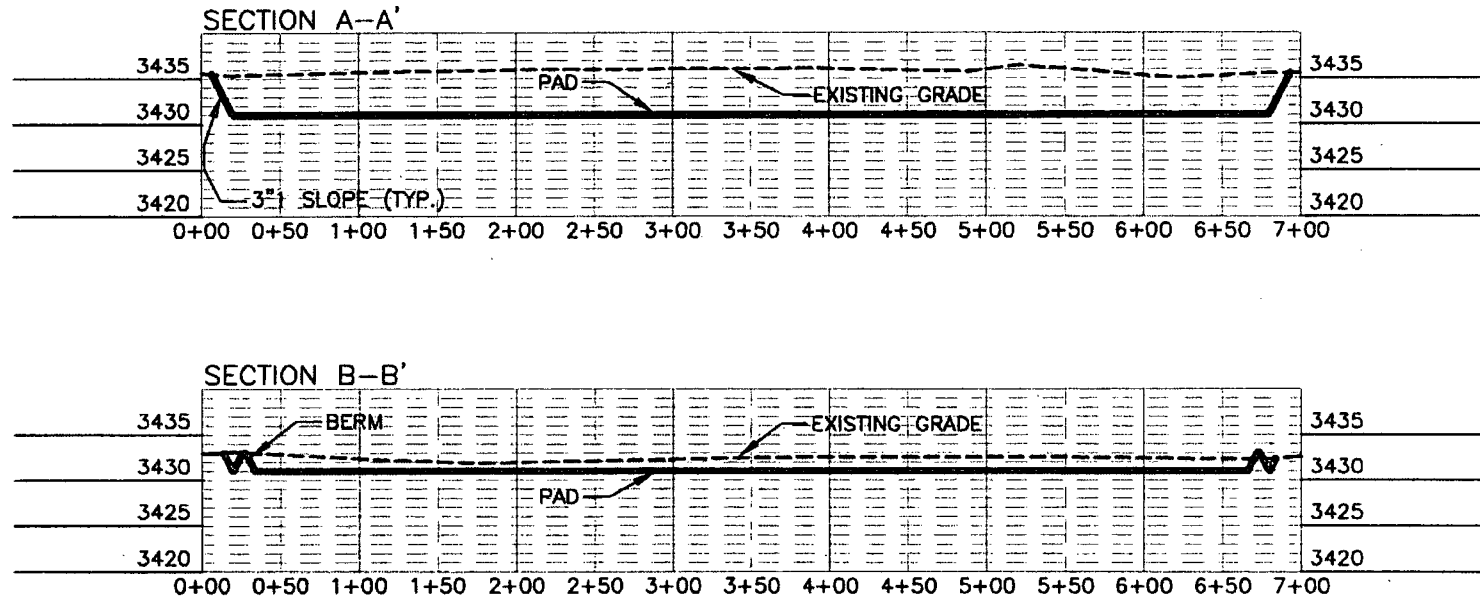
MARCH 9, 2018

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO

(575) 234-3341

SHEET 1-3
SURVEY NO. 5331C

CROSS-SECTIONS



012 60 120 240
SCALE 1" = 120' - 1" = 20' VER

LAND STATUS: BLM

DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
FOR GAUCHO 21 FED 6H
SECTION 21, TOWNSHIP 22 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

MARCH 9, 2018

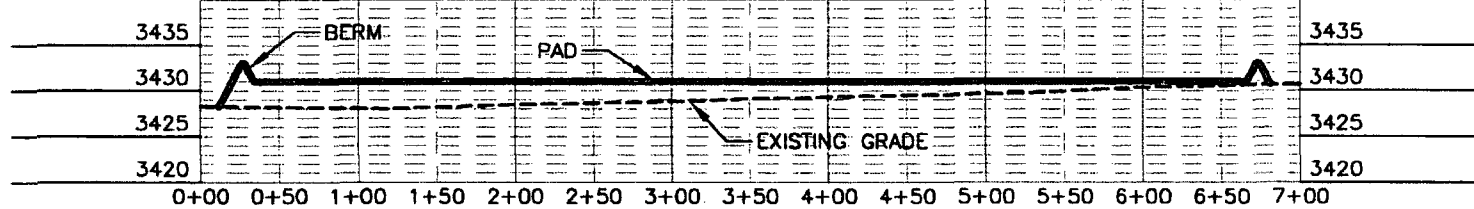
MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

EARTHWORK QUANTITIES GAUCHO 21-21 PAD & CTB 2		
CUT	FILL	NET
27191 CU. YD	31163 CU. YD	3972 CU. YD (FILL)
EARTHWORK QUANTITIES ARE ESTIMATED		

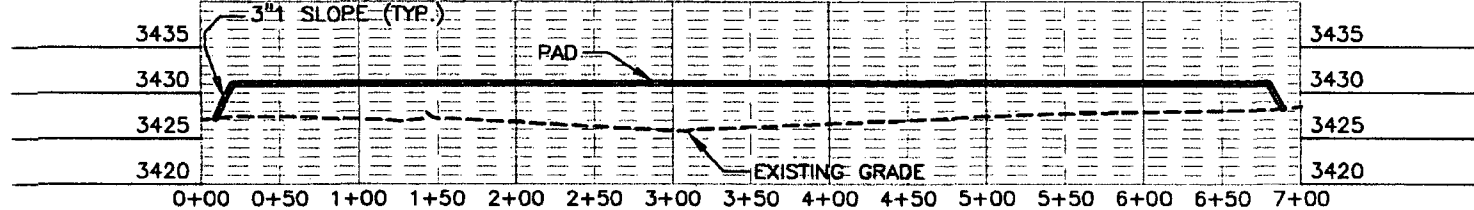
SHEET 2-3
SURVEY NO. 5331C

CROSS-SECTIONS

SECTION C-C'



SECTION D-D'



012 60 120 240
SCALE 1" = 120' - 1" = 20' VER

LAND STATUS: BLM

DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
FOR GAUCHO 21 FED 6H
SECTION 21, TOWNSHIP 22 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

EARTHWORK QUANTITIES		
GAUCHO 21-21 PAD & CTB 2		
CUT	FILL	NET
27191 CU. YD	31163 CU. YD	3972 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

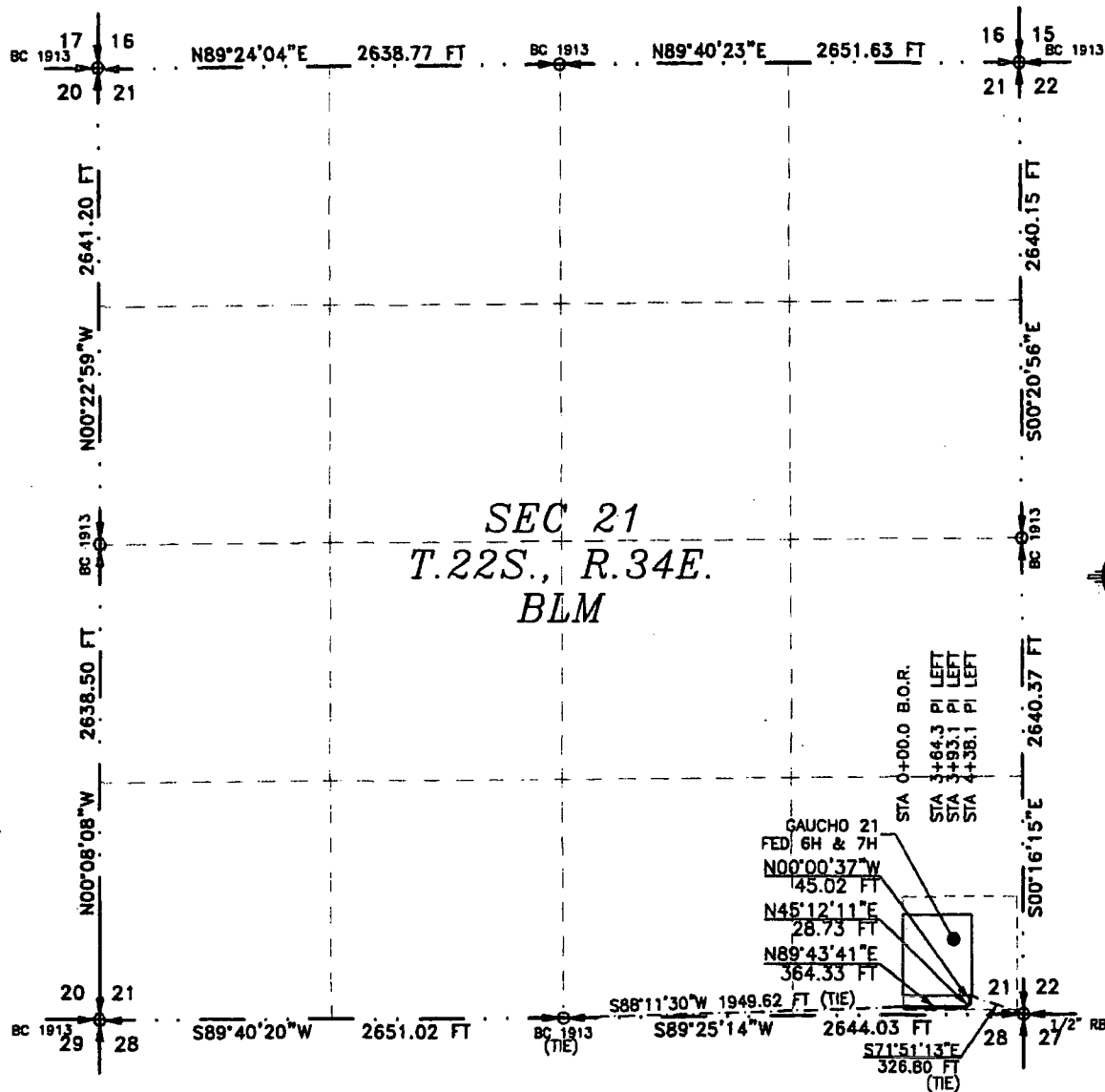
MARCH 9, 2018

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

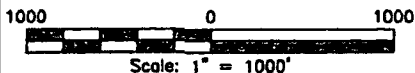
SHEET 3-3
SURVEY NO. 5331C

ACCESS ROAD PLAT
ACCESS ROAD FOR GAUCHO 21 FED 6H & 7H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 21, TOWNSHIP 22 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
MARCH 9, 2018



SEE NEXT SHEET (2-2) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-2

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 9 DAY OF MARCH 2018

FILIMON F. JARAMILLO PLS 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 5331C

ACCESS ROAD PLAT
ACCESS ROAD FOR GAUCHO 21 FED 6H & 7H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 21, TOWNSHIP 22 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
MARCH 9, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 21, TOWNSHIP 22 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SE/4 SE/4 OF SAID SECTION 21, TOWNSHIP 22 SOUTH, RANGE 34 EAST, N.M.P.M., WHENCE THE SOUTH QUARTER CORNER OF SAID SECTION 21, TOWNSHIP 22 SOUTH, RANGE 34 EAST, N.M.P.M. BEARS S88°11'30"W, A DISTANCE OF 1949.62 FEET;
THENCE N89°43'41"E A DISTANCE OF 364.33 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N45°12'11"E A DISTANCE OF 28.73 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N00°00'37"W A DISTANCE OF 45.02 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHEAST CORNER OF SAID SECTION 21, TOWNSHIP 22 SOUTH, RANGE 34 EAST, N.M.P.M. BEARS S71°51'13"E, A DISTANCE OF 326.80 FEET;

SAID STRIP OF LAND BEING 438.08 FEET OR 26.55 RODS IN LENGTH, CONTAINING 0.302 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 SE/4 438.08 L.F. 26.55 RODS 0.302 ACRES

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF THIS CERTIFICATE IS EXECUTED AT CARLSBAD,
NEW MEXICO, THIS 12 DAY OF MARCH, 2018

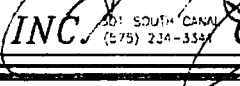

FILMON F. JARAMILLO, PLS/12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-2

MADRON SURVEYING, INC.  **SURVEY NO. 5331C**
301 SOUTH CANAL
(575) 234-3341
CARLSBAD, NEW MEXICO

Devon Energy

Project: Lea County, NM (NAD-83)
 Site: Gaucho 21 Fed
 Well: 6H
 Wellbore: OH
 Design: Plan #1

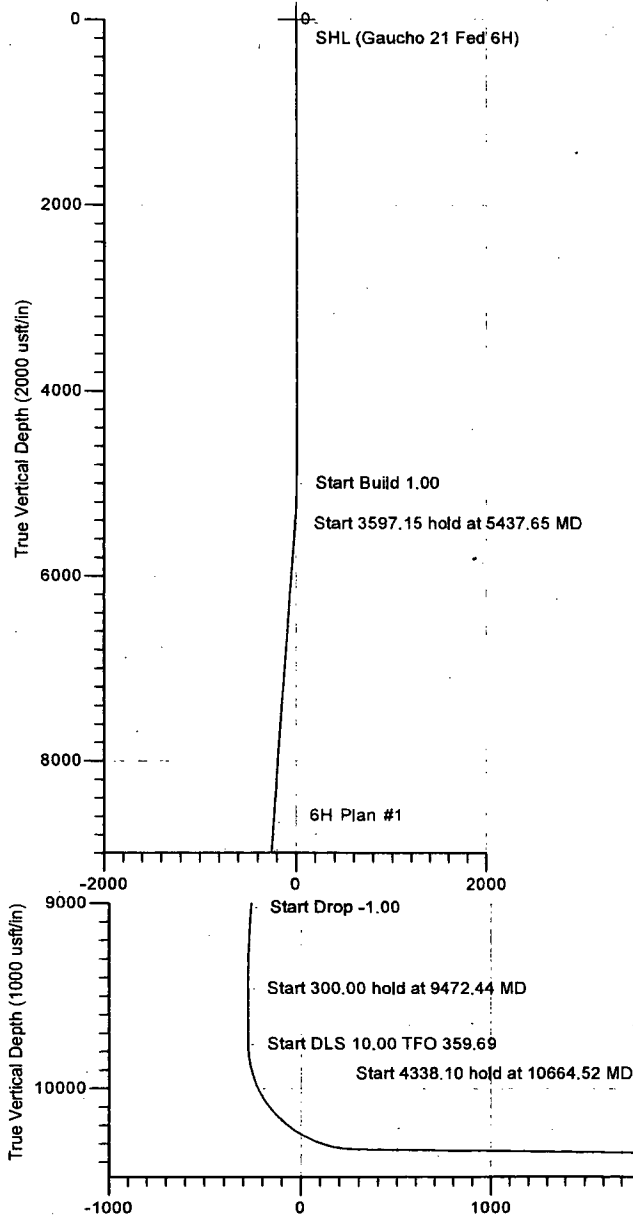
3428.1' GE + 24' KB @ 3452.10usft
 Ground Level: 3428.10



Azimuths to Grid North
 True North: -0.46°
 Magnetic North: 6.32°
 Magnetic Field
 Strength: 48148.6nT
 Dip Angle: 60.22°
 Date: 3/16/2018
 Model: HDGM

PROJECT DETAILS: Lea County, NM (NAD-83)

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone

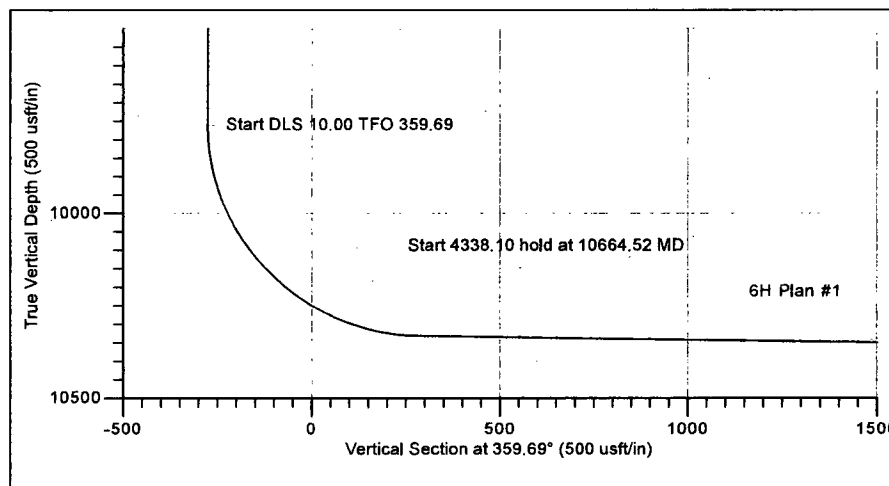


SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	0.00	
5437.65	4.38	153.68	5437.22	-14.98	7.41	1.00	153.68	-15.01	
9034.79	4.38	153.68	9023.88	-261.02	129.09	0.00	0.00	-261.72	
9472.44	0.00	0.00	9461.10	-276.00	136.50	1.00	180.00	-276.73	
9772.44	0.00	0.00	9761.10	-276.00	136.50	0.00	0.00	-276.73	
10664.52	89.21	359.69	10334.00	289.03	133.45	10.00	359.69	288.30	
15002.62	89.21	359.69	10394.00	4626.65	110.00	0.00	0.00	4625.99	

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
PBHL (Gaucho 21 Fed 6H)	10394.00	4626.65	110.00	32° 23' 0.7436 N	103° 28' 3.5148 W
SHL (Gaucho 21 Fed 6H)	0.00	0.00	0.00	32° 22' 14.9731 N	103° 28' 5.2338 W



Vertical Section at 359.69° (1000 usft/in)



LEAM DRILLING SYSTEMS LLC
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax: 936/756-7595

Plan: Plan #1 (6H/OH)
 Gaucho 21 Fed
 Created By: Dustin Autt
 Date: 10:52, March 16 2018
 Approved: _____
 Date: _____

Devon Energy, Gaucho 21 Fed 6H

1. Geologic Formations

TVD of target	10,394'	Pilot hole depth	N/A
MD at TD:	15,002'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	1606		
Top of Salt	1876		
Base of Salt	3669		
Yates	3839		
Capitan	4181		
Delaware	5284		
Brushy Canyon	5484		
Bone Spring	8503		
1st BSPG Sand	9544		
2nd BSPG Lime	9624		
2nd BSPG Sand	10084		

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

Devon Energy, Gaucho 21 Fed 6H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.
	From	To				
17.5"	0	1,625'	13.375"	48 54.5	H-40 J-55	STC
12.25"	0	5,100'	9.625"	40	J-55	LTC
8.75"	0	15,002'	5.5"	17	P-110	BTC
BLM Minimum Safety Factor				Collapse: 1.125	Burst: 1.00	Tension: 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
- Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
- Int casing shoe will be selected based on drilling data / gamma, setting depth with be revised accordingly if needed.

3. Cementing Program

Casing	# Sks	Wt. lb/gal	H ₂ O gal/sk	Yld ft ³ /sack	500# Comp. Strength (hours)	Slurry Description
13-3/8"	675	12.5	10.654	1.735	31 hr 40 mn	C + Adds
Surface	391	14.8	6.368	1.33	4 hr 48 mn	C + Adds
9-5/8"	823	12.5	10.654	1.94	31 hr 40 mn	35:65 Poz: C + Adds
Inter.	319	14.8	6.352	1.33	5 hr 48 mn	C + Adds
5-1/2"	509	9	15.442	3.569	19 hr 3 mn	C + Adds
Prod	922	13.2	5.175	1.46	9 hr 6 mn	50:50 Poz: H + Adds

If a DV tool is used, 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
13-3/8" Surface	0'	50%
9-5/8" Intermediate	0'	30%
5-1/2" Production Casing	4,900'	10%

8. Other facets of operation

Is this a walking operation? Potentially

1. If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2. The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
3. The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

1. Spudder rig will move in and drill surface hole.
 - a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the 10 ¾" surface casing is cut off and the WOC time has been reached.
4. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5. Spudder rig operations is expected to take 4-5 days per well on a multi well pad.
6. The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
 - a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

8. Other facets of operation

Is this a walking operation? Potentially

4. If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
5. The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
6. The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

8. Spudder rig will move in and drill surface hole.
 - a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
9. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
10. The wellhead will be installed and tested once the 10 3/4" surface casing is cut off and the WOC time has been reached.
11. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
12. Spudder rig operations is expected to take 4-5 days per well on a multi well pad.
13. The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
14. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
 - a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

- ☒ Directional Plan
☐ Other, describe

Devon Energy

Project: Lea County, NM (NAD-83)
Site: Gaucho 21 Fed
Well: 6H
Wellbore: OH
Design: Plan #1



Azimuths to Grid North
True North: -0.46°
Magnetic North: 6.32°

Magnetic Field
Strength: 48148.6snT
Dip Angle: 60.22°
Date: 3/16/2018
Model: HDGM



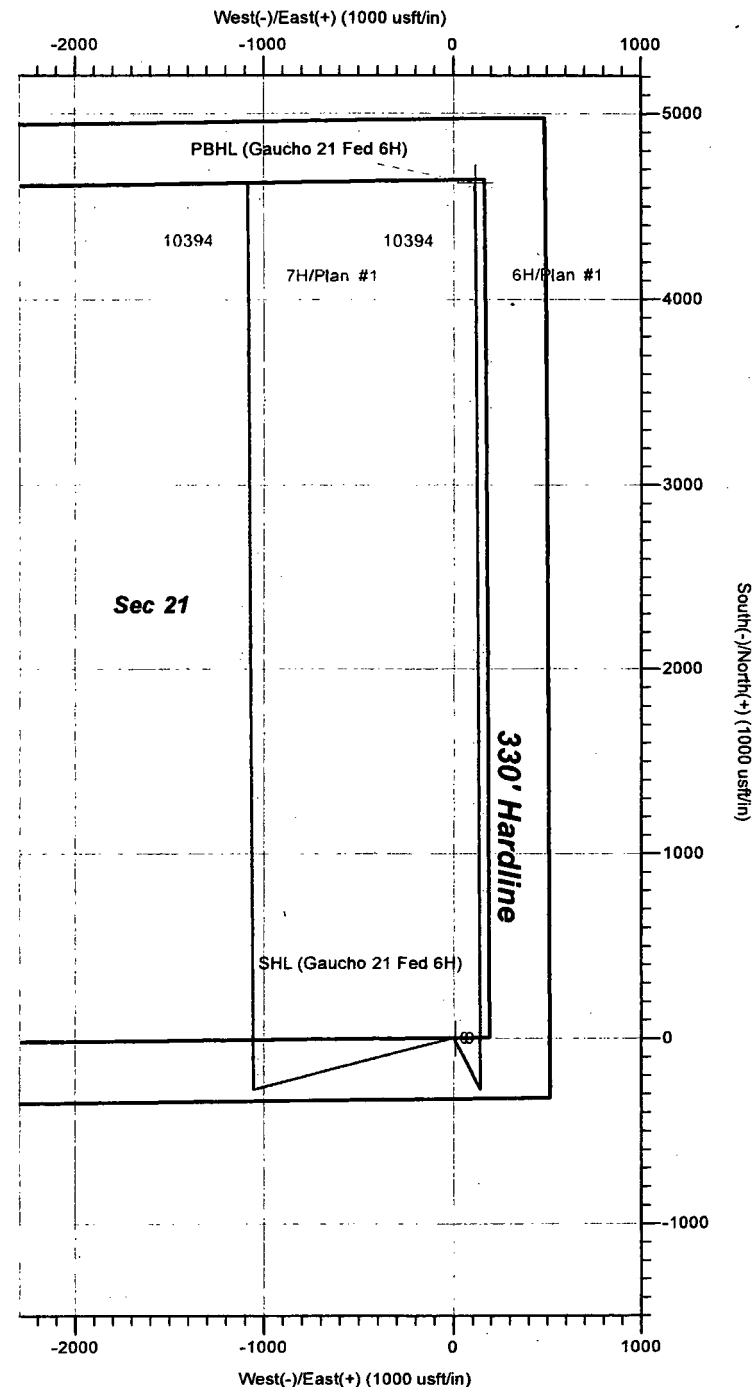
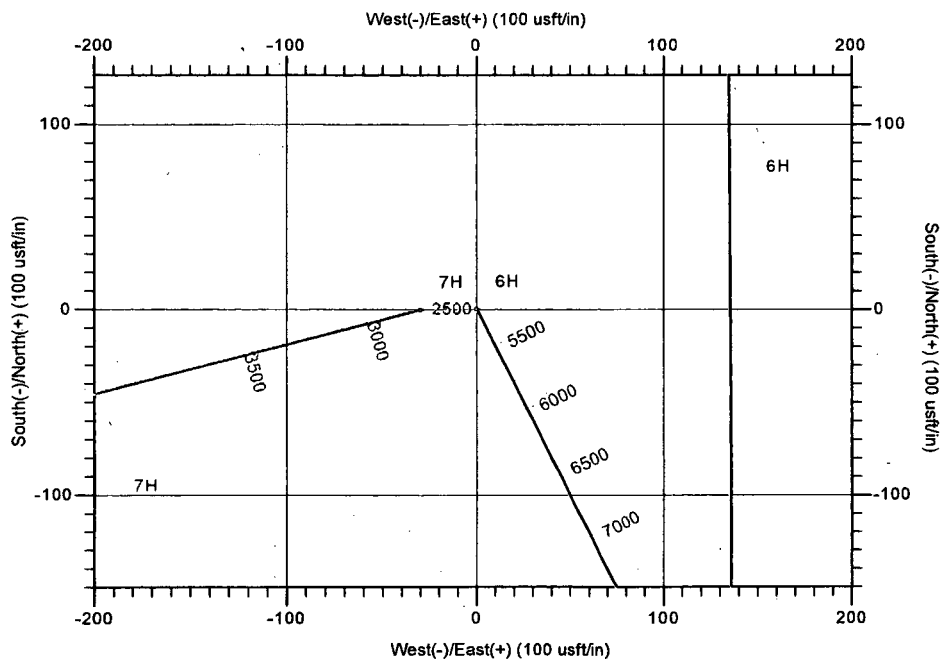
PROJECT DETAILS: Lea County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	0.00	
5437.65	4.38	153.68	5437.22	-14.98	7.41	1.00	153.68	-15.01	
9034.79	4.38	153.68	9023.88	-261.02	129.09	0.00	0.00	-261.72	
9472.44	0.00	0.00	9461.10	-276.00	136.50	1.00	180.00	-276.73	
9772.44	0.00	0.00	9761.10	-276.00	136.50	0.00	0.00	-276.73	
10664.52	89.21	359.69	10334.00	289.03	133.45	10.00	359.69	288.30	
15002.62	89.21	359.69	10394.00	4626.65	110.00	0.00	0.00	4625.99	PBHL (Gaucho 21 Fed 6H)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (Gaucho 21 Fed 6H)	10394.00	4626.65	110.00	504344.64	808572.45	32° 23' 0.7436 N	103° 28' 3.5148 W
SHL (Gaucho 21 Fed 6H)	0.00	0.00	0.00	499717.99	808462.45	32° 22' 14.9731 N	103° 28' 5.2338 W



LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax: 936/756-7595

Plan: Plan #1 (6H/OH)
Gaucho 21 Fed
Created By: Dustin Ault
Date: 10/53, March 16 2018
Approved: _____
Date: _____

Devon Energy

Lea County, NM (NAD-83)

Gaucha 21 Fed

6H

OH

Plan: Plan #1

Standard Planning Report

16 March, 2018

LEAM Drilling Services

Planning Report

Database: EDM 5000.1 Multi User Db
Company: Devon Energy
Project: Lea County, NM (NAD-83)
Site: Gaucho 21 Fed
Well: 6H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 6H
TVD Reference: 3428.1' GE + 24' KB @ 3452.10usft
MD Reference: 3428.1' GE + 24' KB @ 3452.10usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Lea County, NM (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Gaucho 21 Fed			
Site Position:		Northing:	499,563.64 usft	Latitude: 32° 22' 13.7105 N
From:	Map	Easting:	805,134.27 usft	Longitude: 103° 28' 44.0521 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.46 °

Well	6H			
Well Position	+N/-S	154.35 usft	Northing:	499,717.99 usft
	+E/-W	3,328.18 usft	Easting:	808,462.45 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level: 3,428.10 usft

Wellbore	OH			
Magnetics	Model Name	Sample Date	Declination	Dip Angle
	HDGM	3/16/2018	(°)	(°)
			6.78	60.22
				Field Strength (nT)
				48,149

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	359.69

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,437.65	4.38	153.68	5,437.22	-14.98	7.41	1.00	1.00	0.00	153.68	
9,034.79	4.38	153.68	9,023.88	-261.02	129.09	0.00	0.00	0.00	0.00	
9,472.44	0.00	0.00	9,461.10	-276.00	136.50	1.00	-1.00	0.00	180.00	
9,772.44	0.00	0.00	9,761.10	-276.00	136.50	0.00	0.00	0.00	0.00	
10,664.52	89.21	359.69	10,334.00	289.03	133.45	10.00	10.00	-0.03	359.69	
15,002.62	89.21	359.69	10,394.00	4,626.65	110.00	0.00	0.00	0.00	0.00	PBHL (Gaucho 21 Fe

LEAM Drilling Services

Planning Report

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Lea County, NM (NAD-83)
 Site: Gaucho 21 Fed
 Well: 6H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well 6H
 TVD Reference: 3428.1' GE + 24' KB @ 3452.10usft
 MD Reference: 3428.1' GE + 24' KB @ 3452.10usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (Gaucho 21 Fed 6H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	1.00	153.68	5,100.00	-0.78	0.39	-0.78	1.00	1.00	0.00
5,200.00	2.00	153.68	5,199.96	-3.13	1.55	-3.14	1.00	1.00	0.00

LEAM Drilling Services

Planning Report

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Lea County, NM (NAD-83)
 Site: Gaucho 21 Fed
 Well: 6H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well 6H
 TVD Reference: 3428.1' GE + 24' KB @ 3452.10usft
 MD Reference: 3428.1' GE + 24' KB @ 3452.10usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	3.00	153.68	5,299.86	-7.04	3.48	-7.06	1.00	1.00	0.00
5,400.00	4.00	153.68	5,399.68	-12.51	6.19	-12.54	1.00	1.00	0.00
5,437.65	4.38	153.68	5,437.22	-14.98	7.41	-15.01	1.00	1.00	0.00
5,500.00	4.38	153.68	5,499.39	-19.24	9.52	-19.29	0.00	0.00	0.00
5,600.00	4.38	153.68	5,599.10	-26.08	12.90	-26.15	0.00	0.00	0.00
5,700.00	4.38	153.68	5,698.81	-32.92	16.28	-33.01	0.00	0.00	0.00
5,800.00	4.38	153.68	5,798.52	-39.76	19.66	-39.87	0.00	0.00	0.00
5,900.00	4.38	153.68	5,898.23	-46.60	23.05	-46.72	0.00	0.00	0.00
6,000.00	4.38	153.68	5,997.93	-53.44	26.43	-53.58	0.00	0.00	0.00
6,100.00	4.38	153.68	6,097.64	-60.28	29.81	-60.44	0.00	0.00	0.00
6,200.00	4.38	153.68	6,197.35	-67.12	33.20	-67.30	0.00	0.00	0.00
6,300.00	4.38	153.68	6,297.06	-73.96	36.58	-74.16	0.00	0.00	0.00
6,400.00	4.38	153.68	6,396.77	-80.80	39.96	-81.02	0.00	0.00	0.00
6,500.00	4.38	153.68	6,496.48	-87.64	43.34	-87.87	0.00	0.00	0.00
6,600.00	4.38	153.68	6,596.19	-94.48	46.73	-94.73	0.00	0.00	0.00
6,700.00	4.38	153.68	6,695.89	-101.32	50.11	-101.59	0.00	0.00	0.00
6,800.00	4.38	153.68	6,795.60	-108.16	53.49	-108.45	0.00	0.00	0.00
6,900.00	4.38	153.68	6,895.31	-115.00	56.88	-115.31	0.00	0.00	0.00
7,000.00	4.38	153.68	6,995.02	-121.84	60.26	-122.17	0.00	0.00	0.00
7,100.00	4.38	153.68	7,094.73	-128.68	63.64	-129.02	0.00	0.00	0.00
7,200.00	4.38	153.68	7,194.44	-135.52	67.02	-135.88	0.00	0.00	0.00
7,300.00	4.38	153.68	7,294.14	-142.36	70.41	-142.74	0.00	0.00	0.00
7,400.00	4.38	153.68	7,393.85	-149.20	73.79	-149.60	0.00	0.00	0.00
7,500.00	4.38	153.68	7,493.56	-156.04	77.17	-156.46	0.00	0.00	0.00
7,600.00	4.38	153.68	7,593.27	-162.88	80.56	-163.32	0.00	0.00	0.00
7,700.00	4.38	153.68	7,692.98	-169.72	83.94	-170.17	0.00	0.00	0.00
7,800.00	4.38	153.68	7,792.69	-176.56	87.32	-177.03	0.00	0.00	0.00
7,900.00	4.38	153.68	7,892.39	-183.40	90.70	-183.89	0.00	0.00	0.00
8,000.00	4.38	153.68	7,992.10	-190.24	94.09	-190.75	0.00	0.00	0.00
8,100.00	4.38	153.68	8,091.81	-197.08	97.47	-197.61	0.00	0.00	0.00
8,200.00	4.38	153.68	8,191.52	-203.92	100.85	-204.47	0.00	0.00	0.00
8,300.00	4.38	153.68	8,291.23	-210.76	104.24	-211.32	0.00	0.00	0.00
8,400.00	4.38	153.68	8,390.94	-217.60	107.62	-218.18	0.00	0.00	0.00
8,500.00	4.38	153.68	8,490.65	-224.44	111.00	-225.04	0.00	0.00	0.00
8,600.00	4.38	153.68	8,590.35	-231.28	114.39	-231.90	0.00	0.00	0.00
8,700.00	4.38	153.68	8,690.06	-238.12	117.77	-238.76	0.00	0.00	0.00
8,800.00	4.38	153.68	8,789.77	-244.96	121.15	-245.62	0.00	0.00	0.00
8,900.00	4.38	153.68	8,889.48	-251.80	124.53	-252.47	0.00	0.00	0.00
9,000.00	4.38	153.68	8,989.19	-258.65	127.92	-259.33	0.00	0.00	0.00
9,034.79	4.38	153.68	9,023.88	-261.02	129.09	-261.72	0.00	0.00	0.00
9,100.00	3.72	153.68	9,088.92	-265.15	131.14	-265.86	1.00	-1.00	0.00
9,200.00	2.72	153.68	9,188.76	-270.20	133.63	-270.91	1.00	-1.00	0.00
9,300.00	1.72	153.68	9,288.69	-273.67	135.35	-274.40	1.00	-1.00	0.00
9,400.00	0.72	153.68	9,388.66	-275.59	136.30	-276.32	1.00	-1.00	0.00
9,472.44	0.00	0.00	9,461.10	-276.00	136.50	-276.73	1.00	-1.00	0.00
9,500.00	0.00	0.00	9,488.66	-276.00	136.50	-276.73	0.00	0.00	0.00
9,600.00	0.00	0.00	9,588.66	-276.00	136.50	-276.73	0.00	0.00	0.00
9,700.00	0.00	0.00	9,688.66	-276.00	136.50	-276.73	0.00	0.00	0.00
9,772.44	0.00	0.00	9,761.10	-276.00	136.50	-276.73	0.00	0.00	0.00
9,800.00	2.76	359.69	9,788.65	-275.34	136.50	-276.07	10.00	10.00	0.00
9,850.00	7.76	359.69	9,838.42	-270.76	136.47	-271.49	10.00	10.00	0.00
9,900.00	12.76	359.69	9,887.61	-261.86	136.42	-262.59	10.00	10.00	0.00
9,950.00	17.76	359.69	9,935.83	-248.71	136.35	-249.44	10.00	10.00	0.00
10,000.00	22.76	359.69	9,982.72	-231.40	136.26	-232.14	10.00	10.00	0.00

LEAM Drilling Services

Planning Report

Database: EDM 5000.1 Multi User Db
Company: Devon Energy
Project: Lea County, NM (NAD-83)
Site: Gaucho 21 Fed
Well: 6H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 6H
TVD Reference: 3428.1' GE + 24' KB @ 3452.10usft
MD Reference: 3428.1' GE + 24' KB @ 3452.10usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,050.00	27.76	359.69	10,027.93	-210.08	136.14	-210.81	10.00	10.00	0.00
10,100.00	32.76	359.69	10,071.11	-184.89	136.01	-185.62	10.00	10.00	0.00
10,150.00	37.76	359.69	10,111.92	-156.04	135.85	-156.77	10.00	10.00	0.00
10,200.00	42.76	359.69	10,150.07	-123.74	135.68	-124.47	10.00	10.00	0.00
10,250.00	47.76	359.69	10,185.25	-88.24	135.49	-88.97	10.00	10.00	0.00
10,300.00	52.76	359.69	10,217.21	-49.81	135.28	-50.54	10.00	10.00	0.00
10,350.00	57.76	359.69	10,245.70	-8.73	135.06	-9.46	10.00	10.00	0.00
10,400.00	62.76	359.69	10,270.50	34.66	134.82	33.93	10.00	10.00	0.00
10,450.00	67.76	359.69	10,291.42	80.06	134.58	79.33	10.00	10.00	0.00
10,500.00	72.76	359.69	10,308.30	127.10	134.32	126.38	10.00	10.00	0.00
10,550.00	77.76	359.69	10,321.03	175.44	134.06	174.71	10.00	10.00	0.00
10,600.00	82.76	359.69	10,329.48	224.70	133.79	223.98	10.00	10.00	0.00
10,650.00	87.76	359.69	10,333.62	274.52	133.52	273.79	10.00	10.00	0.00
10,664.52	89.21	359.69	10,334.00	289.03	133.45	288.30	10.00	10.00	0.00
10,700.00	89.21	359.69	10,334.49	324.51	133.25	323.78	0.00	0.00	0.00
10,800.00	89.21	359.69	10,335.88	424.50	132.71	423.77	0.00	0.00	0.00
10,900.00	89.21	359.69	10,337.26	524.48	132.17	523.76	0.00	0.00	0.00
11,000.00	89.21	359.69	10,338.64	624.47	131.63	623.75	0.00	0.00	0.00
11,100.00	89.21	359.69	10,340.03	724.46	131.09	723.74	0.00	0.00	0.00
11,200.00	89.21	359.69	10,341.41	824.45	130.55	823.73	0.00	0.00	0.00
11,300.00	89.21	359.69	10,342.79	924.44	130.01	923.72	0.00	0.00	0.00
11,400.00	89.21	359.69	10,344.18	1,024.43	129.47	1,023.71	0.00	0.00	0.00
11,500.00	89.21	359.69	10,345.56	1,124.42	128.93	1,123.70	0.00	0.00	0.00
11,600.00	89.21	359.69	10,346.94	1,224.41	128.39	1,223.69	0.00	0.00	0.00
11,700.00	89.21	359.69	10,348.32	1,324.40	127.85	1,323.68	0.00	0.00	0.00
11,800.00	89.21	359.69	10,349.71	1,424.39	127.31	1,423.68	0.00	0.00	0.00
11,900.00	89.21	359.69	10,351.09	1,524.37	126.77	1,523.67	0.00	0.00	0.00
12,000.00	89.21	359.69	10,352.47	1,624.36	126.23	1,623.66	0.00	0.00	0.00
12,100.00	89.21	359.69	10,353.86	1,724.35	125.69	1,723.65	0.00	0.00	0.00
12,200.00	89.21	359.69	10,355.24	1,824.34	125.15	1,823.64	0.00	0.00	0.00
12,300.00	89.21	359.69	10,356.62	1,924.33	124.61	1,923.63	0.00	0.00	0.00
12,400.00	89.21	359.69	10,358.01	2,024.32	124.07	2,023.62	0.00	0.00	0.00
12,500.00	89.21	359.69	10,359.39	2,124.31	123.53	2,123.61	0.00	0.00	0.00
12,600.00	89.21	359.69	10,360.77	2,224.30	122.99	2,223.60	0.00	0.00	0.00
12,700.00	89.21	359.69	10,362.15	2,324.29	122.44	2,323.59	0.00	0.00	0.00
12,800.00	89.21	359.69	10,363.54	2,424.27	121.90	2,423.58	0.00	0.00	0.00
12,900.00	89.21	359.69	10,364.92	2,524.26	121.36	2,523.57	0.00	0.00	0.00
13,000.00	89.21	359.69	10,366.30	2,624.25	120.82	2,623.56	0.00	0.00	0.00
13,100.00	89.21	359.69	10,367.69	2,724.24	120.28	2,723.55	0.00	0.00	0.00
13,200.00	89.21	359.69	10,369.07	2,824.23	119.74	2,823.54	0.00	0.00	0.00
13,300.00	89.21	359.69	10,370.45	2,924.22	119.20	2,923.53	0.00	0.00	0.00
13,400.00	89.21	359.69	10,371.84	3,024.21	118.66	3,023.52	0.00	0.00	0.00
13,500.00	89.21	359.69	10,373.22	3,124.20	118.12	3,123.51	0.00	0.00	0.00
13,600.00	89.21	359.69	10,374.60	3,224.19	117.58	3,223.50	0.00	0.00	0.00
13,700.00	89.21	359.69	10,375.98	3,324.18	117.04	3,323.49	0.00	0.00	0.00
13,800.00	89.21	359.69	10,377.37	3,424.16	116.50	3,423.48	0.00	0.00	0.00
13,900.00	89.21	359.69	10,378.75	3,524.15	115.96	3,523.47	0.00	0.00	0.00
14,000.00	89.21	359.69	10,380.13	3,624.14	115.42	3,623.47	0.00	0.00	0.00
14,100.00	89.21	359.69	10,381.52	3,724.13	114.88	3,723.46	0.00	0.00	0.00
14,200.00	89.21	359.69	10,382.90	3,824.12	114.34	3,823.45	0.00	0.00	0.00
14,300.00	89.21	359.69	10,384.28	3,924.11	113.80	3,923.44	0.00	0.00	0.00
14,400.00	89.21	359.69	10,385.67	4,024.10	113.26	4,023.43	0.00	0.00	0.00
14,500.00	89.21	359.69	10,387.05	4,124.09	112.72	4,123.42	0.00	0.00	0.00
14,600.00	89.21	359.69	10,388.43	4,224.08	112.18	4,223.41	0.00	0.00	0.00

LEAM Drilling Services

Planning Report

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Lea County, NM (NAD-83)
 Site: Gaucho 21 Fed
 Well: 6H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well 6H
 TVD Reference: 3428.1' GE + 24' KB @ 3452.10usft
 MD Reference: 3428.1' GE + 24' KB @ 3452.10usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,700.00	89.21	359.69	10,389.81	4,324.07	111.64	4,323.40	0.00	0.00	0.00
14,800.00	89.21	359.69	10,391.20	4,424.05	111.10	4,423.39	0.00	0.00	0.00
14,900.00	89.21	359.69	10,392.58	4,524.04	110.55	4,523.38	0.00	0.00	0.00
15,002.62	89.21	359.69	10,394.00	4,626.65	110.00	4,625.99	0.00	0.00	0.00
PBHL (Gaucho 21 Fed 6H)									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (Gaucho 21 Fed 6H - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	499,717.99	808,462.45	32° 22' 14.9731 N	103° 28' 5.2338 W
PBHL (Gaucho 21 Fed 6 - plan hits target center - Point	0.00	0.00	10,394.00	4,626.65	110.00	504,344.64	808,572.45	32° 23' 0.7436 N	103° 28' 3.5148 W

Devon Energy

Lea County, NM (NAD-83)

Gaucho 21 Fed

6H

OH

Plan #1

Anticollision Report

16 March, 2018

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 6H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3428.1' GE + 24' KB @ 3452.10usft
Reference Site:	Gaucha 21 Fed	MD Reference:	3428.1' GE + 24' KB @ 3452.10usft
Site Error:	0.00.usft	North Reference:	Grid
Reference Well:	6H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.00usft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 2,000.00 usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic
Casing Method:	Not applied

Survey Tool Program	Date	3/16/2018
From (usft)	To (usft)	Survey (Wellbore)
0.00	15,002.62	Plan #1 (OH)
Tool Name	Description	
LEAM MWD+HDGM	MWD+HDGM	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Gaucha 21 Fed						
1 (offset) - 1 OH - 1 OH						Out of range
2H (offset) - 2H OH - 2H OH						Out of range
3H - OH - OH						Out of range
4H - OH - OH						Out of range
7H - OH - Plan #1	2,500.00	2,500.00	29.97	19.01	2.735	CC, ES
7H - OH - Plan #1	2,600.00	2,599.49	30.81	19.43	2.706	SF

Offset Design														Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD+HDGM														Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
0.00	0.00	0.00	0.00	0.00	0.00	-90.59	-0.31	-29.97	29.97						
100.00	100.00	100.00	100.00	0.09	0.09	-90.59	-0.31	-29.97	29.97	29.80	0.17	175.455			
200.00	200.00	200.00	200.00	0.31	0.31	-90.59	-0.31	-29.97	29.97	29.35	0.62	48.314			
300.00	300.00	300.00	300.00	0.53	0.53	-90.59	-0.31	-29.97	29.97	28.90	1.07	28.014			
400.00	400.00	400.00	400.00	0.76	0.76	-90.59	-0.31	-29.97	29.97	28.45	1.52	19.726			
500.00	500.00	500.00	500.00	0.98	0.98	-90.59	-0.31	-29.97	29.97	28.00	1.97	15.222			
600.00	600.00	600.00	600.00	1.21	1.21	-90.59	-0.31	-29.97	29.97	27.55	2.42	12.393			
700.00	700.00	700.00	700.00	1.43	1.43	-90.59	-0.31	-29.97	29.97	27.10	2.87	10.450			
800.00	800.00	800.00	800.00	1.66	1.66	-90.59	-0.31	-29.97	29.97	26.65	3.32	9.034			
900.00	900.00	900.00	900.00	1.88	1.88	-90.59	-0.31	-29.97	29.97	26.20	3.77	7.956			
1,000.00	1,000.00	1,000.00	1,000.00	2.11	2.11	-90.59	-0.31	-29.97	29.97	25.75	4.22	7.108			
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-90.59	-0.31	-29.97	29.97	25.31	4.67	6.423			
1,200.00	1,200.00	1,200.00	1,200.00	2.56	2.56	-90.59	-0.31	-29.97	29.97	24.86	5.12	5.859			
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-90.59	-0.31	-29.97	29.97	24.41	5.57	5.386			
1,400.00	1,400.00	1,400.00	1,400.00	3.01	3.01	-90.59	-0.31	-29.97	29.97	23.96	6.01	4.983			
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-90.59	-0.31	-29.97	29.97	23.51	6.46	4.637			
1,600.00	1,600.00	1,600.00	1,600.00	3.46	3.46	-90.59	-0.31	-29.97	29.97	23.06	6.91	4.335			
1,700.00	1,700.00	1,700.00	1,700.00	3.68	3.68	-90.59	-0.31	-29.97	29.97	22.61	7.36	4.070			
1,800.00	1,800.00	1,800.00	1,800.00	3.91	3.91	-90.59	-0.31	-29.97	29.97	22.16	7.81	3.836			
1,900.00	1,900.00	1,900.00	1,900.00	4.13	4.13	-90.59	-0.31	-29.97	29.97	21.71	8.26	3.627			
2,000.00	2,000.00	2,000.00	2,000.00	4.36	4.36	-90.59	-0.31	-29.97	29.97	21.26	8.71	3.440			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Gaucho 21 Fed
Site Error: 0.00 usft
Reference Well: 6H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 6H
TVD Reference: 3428.1' GE + 24' KB @ 3452.10usft
MD Reference: 3428.1' GE + 24' KB @ 3452.10usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Gaucho 21 Fed - 7H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)			
2,100.00	2,100.00	2,100.00	2,100.00	4.58	4.58	-90.59	-0.31	-29.97	29.97	20.81	9.16	3.271	
2,200.00	2,200.00	2,200.00	2,200.00	4.81	4.81	-90.59	-0.31	-29.97	29.97	20.36	9.61	3.118	
2,300.00	2,300.00	2,300.00	2,300.00	5.03	5.03	-90.59	-0.31	-29.97	29.97	19.91	10.06	2.979	
2,400.00	2,400.00	2,400.00	2,400.00	5.26	5.26	-90.59	-0.31	-29.97	29.97	19.46	10.51	2.852	
2,500.00	2,500.00	2,500.00	2,500.00	5.48	5.48	-90.59	-0.31	-29.97	29.97	19.01	10.96	2.735 CC, ES	
2,600.00	2,600.00	2,599.49	2,599.48	5.70	5.69	-90.99	-0.53	-30.80	30.81	19.43	11.39	2.706 SF	
2,700.00	2,700.00	2,698.91	2,698.87	5.93	5.88	-92.07	-1.20	-33.31	33.35	21.55	11.80	2.826	
2,800.00	2,800.00	2,798.22	2,798.08	6.15	6.07	-93.53	-2.31	-37.47	37.59	25.38	12.21	3.079	
2,900.00	2,900.00	2,897.35	2,897.03	6.38	6.27	-95.10	-3.87	-43.28	43.55	30.94	12.61	3.453	
3,000.00	3,000.00	2,996.23	2,995.61	6.60	6.47	-96.58	-5.85	-50.72	51.24	38.23	13.02	3.937	
3,100.00	3,100.00	3,094.83	3,093.76	6.83	6.68	-97.88	-8.27	-59.77	60.67	47.25	13.42	4.522	
3,200.00	3,200.00	3,193.07	3,191.38	7.05	6.89	-98.97	-11.12	-70.42	71.81	57.99	13.81	5.198	
3,300.00	3,300.00	3,290.90	3,288.40	7.28	7.11	-99.87	-14.38	-82.62	84.66	70.46	14.21	5.958	
3,400.00	3,400.00	3,388.28	3,384.72	7.50	7.35	-100.61	-18.05	-96.36	99.22	84.62	14.60	6.795	
3,500.00	3,500.00	3,485.13	3,480.29	7.73	7.59	-101.21	-22.12	-111.59	115.46	100.47	14.99	7.702	
3,600.00	3,600.00	3,582.83	3,576.46	7.95	7.84	-101.70	-26.56	-128.21	133.03	117.63	15.40	8.636	
3,700.00	3,700.00	3,681.25	3,673.32	8.18	8.11	-102.09	-31.06	-145.06	150.73	134.89	15.84	9.517	
3,800.00	3,800.00	3,779.67	3,770.18	8.40	8.38	-102.39	-35.56	-161.91	168.44	152.16	16.27	10.350	
3,900.00	3,900.00	3,878.08	3,867.04	8.63	8.66	-102.63	-40.07	-178.77	186.14	169.43	16.71	11.138	
4,000.00	4,000.00	3,976.50	3,963.90	8.85	8.95	-102.83	-44.57	-195.62	203.85	186.70	17.15	11.884	
4,100.00	4,100.00	4,074.92	4,060.75	9.08	9.24	-103.00	-49.07	-212.47	221.57	203.97	17.60	12.592	
4,200.00	4,200.00	4,173.34	4,157.61	9.30	9.54	-103.15	-53.57	-229.32	239.28	221.24	18.04	13.264	
4,300.00	4,300.00	4,271.75	4,254.47	9.53	9.84	-103.27	-58.08	-246.17	256.99	238.51	18.49	13.903	
4,400.00	4,400.00	4,370.17	4,351.33	9.75	10.15	-103.38	-62.58	-263.02	274.71	255.78	18.93	14.510	
4,500.00	4,500.00	4,468.59	4,448.19	9.98	10.46	-103.48	-67.08	-279.87	292.43	273.04	19.38	15.088	
4,600.00	4,600.00	4,567.00	4,545.05	10.20	10.78	-103.56	-71.58	-296.73	310.14	290.31	19.83	15.639	
4,700.00	4,700.00	4,665.42	4,641.91	10.42	11.09	-103.64	-76.08	-313.58	327.86	307.58	20.28	16.164	
4,800.00	4,800.00	4,763.84	4,738.77	10.65	11.41	-103.71	-80.59	-330.43	345.58	324.84	20.74	16.666	
4,900.00	4,900.00	4,862.25	4,835.63	10.87	11.74	-103.77	-85.09	-347.28	363.30	342.11	21.19	17.145	
5,000.00	5,000.00	4,960.67	4,932.49	11.10	12.06	-103.82	-89.59	-364.13	381.02	359.37	21.64	17.603	
5,100.00	5,100.00	5,059.05	5,029.31	11.30	12.39	-103.82	-94.09	-380.98	398.92	376.85	22.07	18.073	
5,200.00	5,199.96	5,157.34	5,126.04	11.47	12.72	-103.82	-98.59	-397.81	417.20	394.73	22.48	18.562	
5,300.00	5,299.86	5,255.51	5,222.66	11.64	13.05	-103.82	-103.08	-414.61	435.88	412.99	22.88	19.049	
5,400.00	5,399.68	5,353.53	5,319.13	11.82	13.38	-103.82	-107.56	-431.40	454.98	431.68	23.29	19.534	
5,500.00	5,499.39	5,451.41	5,415.45	11.99	13.71	-103.82	-112.04	-448.16	474.47	450.76	23.71	20.015	
5,600.00	5,599.10	5,549.27	5,511.77	12.17	14.05	-103.82	-116.52	-464.91	494.07	469.95	24.12	20.480	
5,700.00	5,698.81	5,647.14	5,608.08	12.36	14.39	-103.82	-121.00	-481.67	513.75	489.21	24.55	20.930	
5,800.00	5,798.52	5,745.00	5,704.40	12.54	14.72	-103.82	-125.47	-498.43	533.50	508.53	24.97	21.363	
5,900.00	5,898.23	5,842.86	5,800.71	12.73	15.06	-103.82	-129.95	-515.18	553.31	527.90	25.40	21.781	
6,000.00	5,997.93	5,940.73	5,897.03	12.92	15.40	-103.82	-134.43	-531.94	573.16	547.33	25.84	22.185	
6,100.00	6,097.64	6,038.59	5,993.34	13.11	15.74	-103.82	-138.90	-548.70	593.07	566.80	26.27	22.574	
6,200.00	6,197.35	6,136.45	6,089.66	13.31	16.09	-103.82	-143.38	-565.45	613.02	586.31	26.71	22.949	
6,300.00	6,297.06	6,234.32	6,185.97	13.50	16.43	-103.82	-147.86	-582.21	633.01	605.85	27.16	23.310	
6,400.00	6,396.77	6,332.18	6,282.28	13.70	16.77	-103.82	-152.34	-598.97	653.03	625.43	27.60	23.659	
6,500.00	6,496.48	6,430.05	6,378.60	13.90	17.12	-103.82	-156.81	-615.72	673.09	645.04	28.05	23.996	
6,600.00	6,596.19	6,527.91	6,474.91	14.11	17.46	-103.82	-161.29	-632.48	693.17	664.67	28.50	24.321	
6,700.00	6,695.89	6,625.77	6,571.23	14.31	17.81	-103.82	-165.77	-649.23	713.29	684.33	28.95	24.634	
6,800.00	6,795.60	6,723.64	6,667.54	14.52	18.16	-103.82	-170.24	-665.99	733.42	704.01	29.41	24.937	
6,900.00	6,895.31	6,821.50	6,763.86	14.73	18.50	-103.82	-174.72	-682.75	753.58	723.72	29.87	25.230	
7,000.00	6,895.02	6,819.36	6,860.17	14.94	18.85	-103.82	-179.20	-699.50	773.77	743.44	30.33	25.512	
7,100.00	7,094.73	7,017.23	6,956.49	15.15	19.20	-103.82	-183.68	-716.26	793.97	763.17	30.79	25.785	
7,200.00	7,194.44	7,115.09	7,052.80	15.36	19.55	-103.82	-188.15	-733.02	814.19	782.93	31.26	26.049	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Gaucho 21 Fed
Site Error: 0.00 usft
Reference Well: 6H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 6H
TVD Reference: 3428.1' GE + 24' KB @ 3452.10usft
MD Reference: 3428.1' GE + 24' KB @ 3452.10usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Gaucho 21 Fed - 7H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toothface (')	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
7,300.00	7,294.14	7,212.96	7,149.11	15.57	19.90	112.03	-192.63	-749.77	834.42	802.70	31.72	26.304	
7,400.00	7,393.85	7,310.82	7,245.43	15.79	20.25	112.28	-197.11	-766.53	854.67	822.48	32.19	26.550	
7,500.00	7,493.56	7,408.68	7,341.74	16.01	20.60	112.51	-201.58	-783.29	874.94	842.28	32.66	26.789	
7,600.00	7,593.27	7,506.55	7,438.06	16.23	20.95	112.74	-206.06	-800.04	895.22	862.08	33.13	27.020	
7,700.00	7,692.98	7,604.41	7,534.37	16.44	21.31	112.95	-210.54	-816.80	915.51	881.90	33.60	27.243	
7,800.00	7,792.69	7,702.27	7,630.69	16.67	21.66	113.16	-215.01	-833.56	935.81	901.73	34.08	27.460	
7,900.00	7,892.39	7,800.14	7,727.00	16.89	22.01	113.35	-219.49	-850.31	956.12	921.57	34.56	27.669	
8,000.00	7,992.10	7,898.00	7,823.32	17.11	22.36	113.54	-223.97	-867.07	976.45	941.42	35.03	27.872	
8,100.00	8,091.81	7,995.86	7,919.63	17.33	22.72	113.72	-228.45	-883.83	996.78	961.27	35.51	28.069	
8,200.00	8,191.52	8,093.73	8,015.94	17.56	23.07	113.89	-232.92	-900.58	1,017.12	981.13	35.99	28.260	
8,300.00	8,291.23	8,191.59	8,112.26	17.78	23.42	114.06	-237.40	-917.34	1,037.48	1,001.00	36.47	28.445	
8,400.00	8,390.94	8,289.46	8,208.57	18.01	23.78	114.22	-241.88	-934.10	1,057.84	1,020.88	36.96	28.624	
8,500.00	8,490.65	8,387.32	8,304.89	18.24	24.13	114.37	-246.35	-950.85	1,078.20	1,040.76	37.44	28.798	
8,600.00	8,590.35	8,485.18	8,401.20	18.47	24.49	114.52	-250.83	-967.61	1,098.58	1,060.65	37.92	28.967	
8,700.00	8,690.06	8,595.38	8,509.71	18.70	24.86	114.69	-255.78	-986.13	1,118.67	1,080.20	38.46	29.083	
8,800.00	8,789.77	8,716.84	8,629.70	18.93	25.17	114.89	-260.66	-1,004.38	1,136.97	1,097.95	39.02	29.141	
8,900.00	8,889.48	8,839.15	8,750.90	19.16	25.47	115.12	-264.90	-1,020.28	1,153.25	1,113.69	39.55	29.158	
9,000.00	8,989.19	8,962.20	8,873.15	19.39	25.75	115.37	-268.50	-1,033.75	1,167.49	1,127.41	40.07	29.134	
9,100.00	9,088.92	9,085.91	8,996.34	19.62	26.01	115.70	-271.44	-1,044.73	1,179.52	1,138.95	40.57	29.070	
9,200.00	9,188.76	9,210.30	9,120.41	19.83	26.25	115.98	-273.69	-1,053.18	1,188.78	1,147.73	41.05	28.961	
9,300.00	9,288.69	9,335.19	9,245.15	20.05	26.47	116.17	-275.26	-1,059.04	1,195.18	1,153.69	41.50	28.803	
9,400.00	9,388.66	9,460.39	9,370.31	20.26	26.67	116.28	-276.12	-1,062.28	1,198.71	1,156.80	41.92	28.597	
9,500.00	9,488.66	9,578.75	9,488.66	20.46	26.85	-90.01	-276.31	-1,062.97	1,199.47	1,157.15	42.32	28.346	
9,600.00	9,588.66	9,678.75	9,588.66	20.67	27.01	-90.01	-276.31	-1,062.97	1,199.47	1,156.76	42.71	28.083	
9,700.00	9,688.66	9,778.75	9,688.66	20.87	27.17	-90.01	-276.31	-1,062.97	1,199.47	1,156.36	43.11	27.823	
9,798.10	9,786.72	9,876.62	9,786.52	21.08	27.33	-89.79	-275.75	-1,062.97	1,199.46	1,155.97	43.49	27.578	
9,800.00	9,788.65	9,878.45	9,788.35	21.08	27.33	-89.71	-275.66	-1,062.97	1,199.47	1,155.96	43.51	27.571	
9,900.00	9,887.61	9,977.38	9,888.28	21.25	27.47	-89.71	-262.47	-1,063.05	1,199.47	1,155.64	43.83	27.366	
10,000.00	9,982.72	10,076.35	9,980.52	21.39	27.56	-89.73	-232.63	-1,063.21	1,199.47	1,155.40	44.07	27.219	
10,100.00	10,071.11	10,175.40	10,068.28	21.49	27.62	-89.75	-187.01	-1,063.46	1,199.47	1,155.22	44.25	27.108	
10,200.00	10,150.07	10,274.54	10,146.97	21.57	27.66	-89.78	-126.90	-1,063.79	1,199.47	1,155.06	44.41	27.007	
10,300.00	10,217.21	10,373.81	10,214.20	21.65	27.67	-89.82	-54.04	-1,064.19	1,199.47	1,154.86	44.62	26.884	
10,400.00	10,270.50	10,473.22	10,267.94	21.78	27.68	-89.86	29.45	-1,064.64	1,199.48	1,154.56	44.91	26.706	
10,500.00	10,308.30	10,572.80	10,306.51	22.00	27.72	-89.91	121.12	-1,065.14	1,199.48	1,154.14	45.35	26.452	
10,600.00	10,329.48	10,672.56	10,328.67	22.32	27.80	-89.96	218.26	-1,065.68	1,199.49	1,153.55	45.94	26.110	
10,700.00	10,334.49	10,772.50	10,334.41	22.73	27.96	-90.00	317.95	-1,066.22	1,199.49	1,152.79	46.70	25.682	
10,800.00	10,335.88	10,872.50	10,335.79	23.25	28.22	-90.00	417.94	-1,066.77	1,199.50	1,151.82	47.67	25.160	
10,900.00	10,337.26	10,972.50	10,337.18	23.86	28.58	-90.00	517.92	-1,067.31	1,199.51	1,150.67	48.84	24.560	
11,000.00	10,338.64	11,072.50	10,338.56	24.57	29.05	-90.00	617.91	-1,067.86	1,199.51	1,149.32	50.19	23.899	
11,100.00	10,340.03	11,172.50	10,339.95	25.37	29.62	-90.00	717.90	-1,068.41	1,199.52	1,147.80	51.72	23.194	
11,200.00	10,341.41	11,272.50	10,341.33	26.24	30.29	-90.00	817.89	-1,068.95	1,199.52	1,146.13	53.40	22.463	
11,300.00	10,342.79	11,372.50	10,342.72	27.18	31.04	-90.00	917.88	-1,069.50	1,199.53	1,144.31	55.23	21.721	
11,400.00	10,344.18	11,472.50	10,344.10	28.19	31.87	-90.00	1,017.87	-1,070.05	1,199.54	1,142.36	57.18	20.978	
11,500.00	10,345.56	11,572.50	10,345.49	29.26	32.77	-90.00	1,117.86	-1,070.60	1,199.54	1,140.29	59.25	20.244	
11,600.00	10,346.94	11,672.50	10,346.87	30.37	33.74	-90.00	1,217.85	-1,071.14	1,199.55	1,138.12	61.43	19.527	
11,700.00	10,348.32	11,772.50	10,348.26	31.53	34.76	-90.00	1,317.84	-1,071.69	1,199.56	1,135.85	63.70	18.830	
11,800.00	10,349.71	11,872.50	10,349.64	32.73	35.82	-90.00	1,417.82	-1,072.24	1,199.56	1,133.50	66.06	18.159	
11,900.00	10,351.09	11,972.50	10,351.03	33.97	36.94	-90.00	1,517.81	-1,072.78	1,199.57	1,131.08	68.49	17.514	
12,000.00	10,352.47	12,072.50	10,352.41	35.24	38.09	-90.00	1,617.80	-1,073.33	1,199.58	1,128.58	70.99	16.897	
12,100.00	10,353.86	12,172.50	10,353.80	36.54	39.28	-90.00	1,717.79	-1,073.88	1,199.58	1,126.03	73.56	16.309	
12,200.00	10,355.24	12,272.50	10,355.18	37.87	40.50	-90.00	1,817.78	-1,074.42	1,199.59	1,123.42	76.17	15.749	
12,300.00	10,356.62	12,372.50	10,356.57	39.22	41.75	-90.00	1,917.77	-1,074.97	1,199.60	1,120.76	78.84	15.216	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
 Project: Lea County, NM (NAD-83)
 Reference Site: Gaucho 21 Fed
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #1

Local Co-ordinate Reference: Well 6H
 TVD Reference: 3428.1' GE + 24' KB @ 3452.10usft
 MD Reference: 3428.1' GE + 24' KB @ 3452.10usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design: Gaucho 21 Fed - 7H - OH - Plan #1														Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM														Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Tooface (")	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
12,400.00	10,358.01	12,472.50	10,357.96	40.59	43.02	-90.00	2,017.76	-1,075.52	1,199.60	1,118.05	81.55	14.710		
12,500.00	10,359.39	12,572.50	10,359.34	41.98	44.32	-90.00	2,117.75	-1,076.06	1,199.61	1,115.31	84.30	14.230		
12,600.00	10,360.77	12,672.50	10,360.73	43.39	45.64	-90.00	2,217.74	-1,076.61	1,199.61	1,112.53	87.09	13.775		
12,700.00	10,362.15	12,772.50	10,362.11	44.81	46.99	-90.00	2,317.73	-1,077.16	1,199.62	1,109.71	89.91	13.343		
12,800.00	10,363.54	12,872.50	10,363.50	46.25	48.35	-90.00	2,417.71	-1,077.71	1,199.63	1,106.87	92.76	12.933		
12,900.00	10,364.92	12,972.50	10,364.88	47.70	49.72	-90.00	2,517.70	-1,078.25	1,199.63	1,104.00	95.64	12.544		
13,000.00	10,366.30	13,072.50	10,366.27	49.16	51.12	-90.00	2,617.69	-1,078.80	1,199.64	1,101.10	98.54	12.174		
13,100.00	10,367.69	13,172.50	10,367.65	50.64	52.52	-90.00	2,717.68	-1,079.35	1,199.65	1,098.18	101.46	11.823		
13,200.00	10,369.07	13,272.50	10,369.04	52.12	53.94	-90.00	2,817.67	-1,079.89	1,199.65	1,095.24	104.41	11.490		
13,300.00	10,370.45	13,372.50	10,370.42	53.61	55.38	-90.00	2,917.66	-1,080.44	1,199.66	1,092.28	107.38	11.172		
13,400.00	10,371.84	13,472.50	10,371.81	55.11	56.82	-90.00	3,017.65	-1,080.99	1,199.67	1,089.30	110.36	10.870		
13,500.00	10,373.22	13,572.50	10,373.19	56.62	58.27	-90.00	3,117.64	-1,081.53	1,199.67	1,086.31	113.36	10.583		
13,600.00	10,374.60	13,672.50	10,374.58	58.14	59.74	-90.00	3,217.63	-1,082.08	1,199.68	1,083.30	116.38	10.309		
13,700.00	10,375.98	13,772.50	10,375.96	59.66	61.21	-90.00	3,317.61	-1,082.63	1,199.69	1,080.28	119.41	10.047		
13,800.00	10,377.37	13,872.50	10,377.35	61.19	62.69	-90.00	3,417.60	-1,083.17	1,199.69	1,077.24	122.45	9.798		
13,900.00	10,378.75	13,972.50	10,378.73	62.72	64.18	-90.00	3,517.59	-1,083.72	1,199.70	1,074.20	125.50	9.559		
14,000.00	10,380.13	14,072.50	10,380.12	64.26	65.67	-90.00	3,617.58	-1,084.27	1,199.70	1,071.14	128.57	9.331		
14,100.00	10,381.52	14,172.50	10,381.50	65.80	67.17	-90.00	3,717.57	-1,084.82	1,199.71	1,068.07	131.64	9.114		
14,200.00	10,382.90	14,272.50	10,382.89	67.35	68.68	-90.00	3,817.56	-1,085.36	1,199.72	1,064.99	134.73	8.905		
14,300.00	10,384.28	14,372.50	10,384.27	68.90	70.19	-90.00	3,917.55	-1,085.91	1,199.72	1,061.91	137.82	8.705		
14,400.00	10,385.67	14,472.50	10,385.66	70.46	71.71	-90.00	4,017.54	-1,086.46	1,199.73	1,058.81	140.92	8.514		
14,500.00	10,387.05	14,572.50	10,387.04	72.02	73.24	-90.00	4,117.53	-1,087.00	1,199.74	1,055.71	144.03	8.330		
14,600.00	10,388.43	14,672.50	10,388.43	73.58	74.77	-90.00	4,217.51	-1,087.55	1,199.74	1,052.60	147.15	8.153		
14,700.00	10,389.81	14,772.50	10,389.81	75.15	76.30	-90.00	4,317.50	-1,088.10	1,199.75	1,049.48	150.27	7.984		
14,800.00	10,391.20	14,872.50	10,391.20	76.72	77.84	-90.00	4,417.49	-1,088.64	1,199.76	1,046.35	153.40	7.821		
14,900.00	10,392.58	14,972.50	10,392.58	78.29	79.38	-90.00	4,517.48	-1,089.19	1,199.76	1,043.22	156.54	7.664		
15,000.00	10,393.96	15,072.50	10,393.97	79.87	80.93	-90.00	4,617.47	-1,089.74	1,199.77	1,040.09	159.68	7.514		
15,002.62	10,394.00	15,074.83	10,394.00	79.91	80.96	-90.00	4,619.80	-1,089.75	1,199.77	1,040.01	159.76	7.510		

LEAM Drilling Services

Anticollision Report

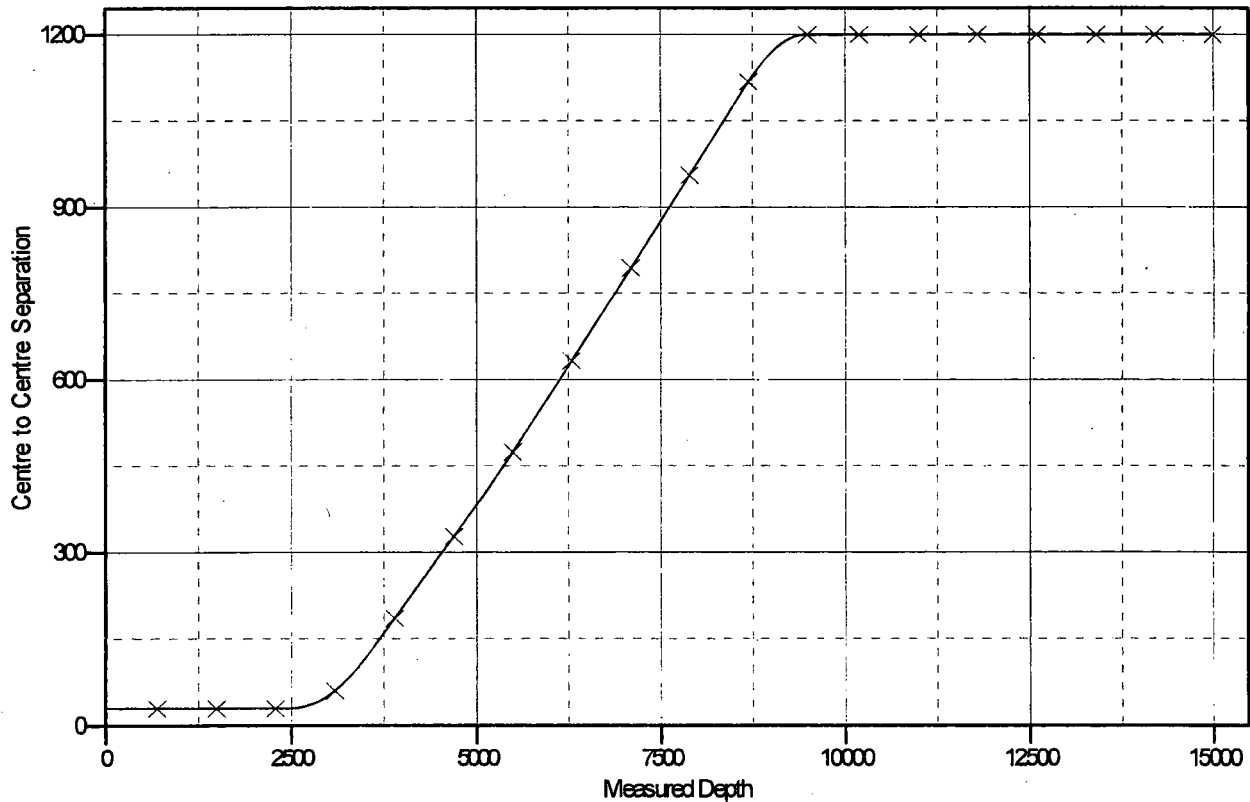
Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Gaucho 21 Fed
Site Error: 0.00 usft
Reference Well: 6H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 6H
TVD Reference: 3428.1' GE + 24' KB @ 3452.10usft
MD Reference: 3428.1' GE + 24' KB @ 3452.10usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to 3428.1' GE + 24' KB @ 3452.10usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.0000 W

Coordinates are relative to: 6H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.46°

Ladder Plot



LEGEND

✱ 7H, OH, Plan #1 V0

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
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Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to 3428.1' GE + 24' KB @ 3452.10usft

Offset Depths are relative to Offset Datum

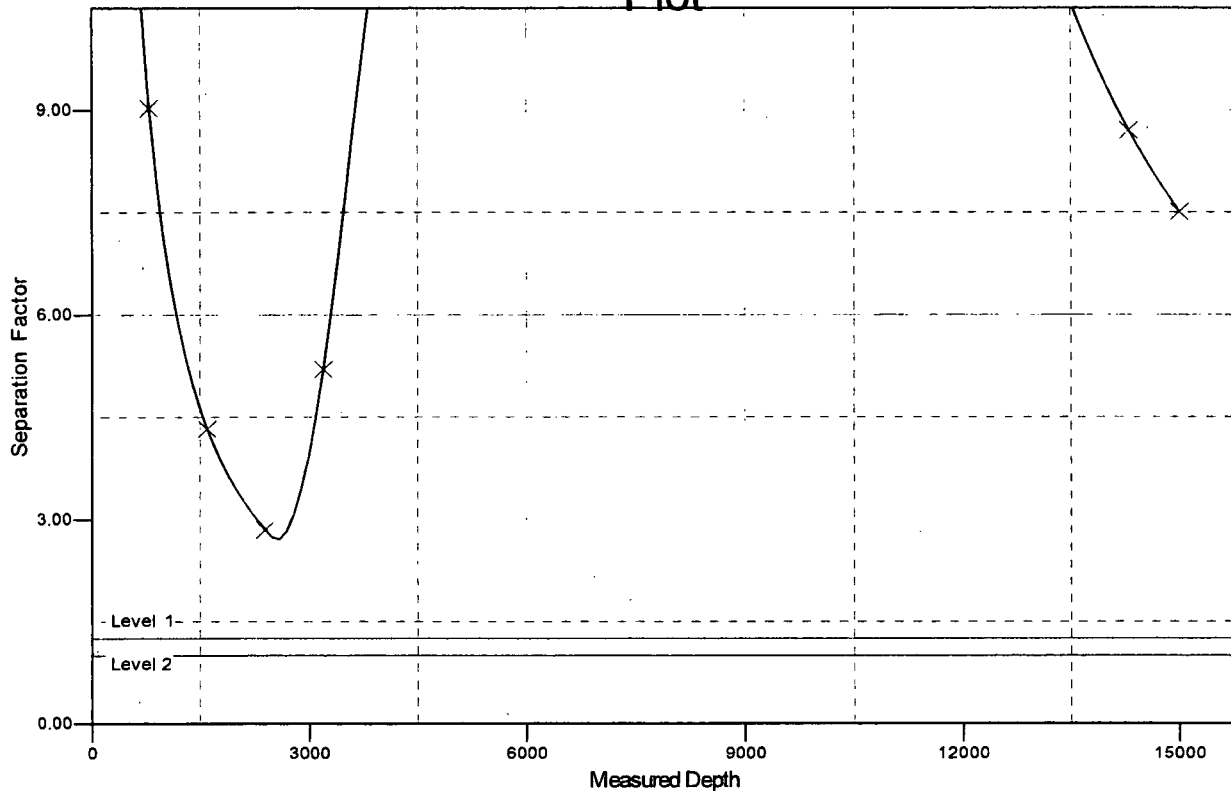
Central Meridian is 104° 19' 60.0000 W

Coordinates are relative to: 6H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.46°

Separation Factor Plot



LEGEND

* 7H, OH, Plan #1 V0

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY
LEASE NO.:	NMNM43564
WELL NAME & NO.:	GAUCHO 21 FEDERAL 6H
SURFACE HOLE FOOTAGE:	326' FSL & 515' FEL
BOTTOM HOLE FOOTAGE:	330' FNL & 380' FEL
LOCATION:	Section 21, T. 22 S., R 34 E., NMPM
COUNTY:	Lea County, New Mexico

COA

All previous COAs still apply expect the following:

H2S	☐ Yes	☒ No	
Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	☐ Both
Other	☐ 4 String Area	☒ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The 13-3/8 inch surface casing shall be set at approximately 1625 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - 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 will be a minimum of 8 hours or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

- 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 9-5/8 inch intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Additional cement maybe required. Excess calculates to 19%.**
- Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
(Use this for 3 string wells in the Capitan Reef, if 4 string well ensure FW based mud used across the capitan interval)

- Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
 - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.
3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
- Cement should tie-back at least 50 feet above the Capitan Reef (**Capitan Reef top estimated at 4077ft**) into previous casing string. Operator shall provide method of verification. **Additional cement maybe required. Excess calculates to 13%.**

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. 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**.

GENERAL 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)

☒ Chaves and Roosevelt Counties

Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

☒ Eddy County

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

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

- 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. Additional cement maybe required. Excess calculates to 19%.**

1.

- a. **In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).**
- b. **The operator proposes to set surface casing with Spudder Rig**
 - **Notify the BLM when moving in and removing the Spudder Rig.**
 - **Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.**
 - **BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.**

- 2. 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 are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) 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.

A. CASING

1. 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.
2. Wait on cement (WOC) for Potash Areas: 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 for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. 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. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. 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.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. 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. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. 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.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. 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.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - 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. 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.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

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. In potash areas, 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. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
 - c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
 - d. 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.
 - 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. This test shall be performed prior to the test at full stack pressure.
 - g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. 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.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

ZS 07/18/2018

Cap KFC

13 3/8	surface csg in a	17 1/2	inch hole.	Design Factors			SURFACE		
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight	
"A"	54.50	J 55	ST&C	5.80	1.49	0.94	1,625	88,563	
"B"							0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,202				Tail Cmt	does not	circ to sfc.	Totals:	1,625 88,563	
Comparison of Proposed to Minimum Required Cement Volumes									
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
17 1/2	0.6946	1066	1688	1183	43	9.00	1792	2M	1.56
Burst Frac Gradient(s) for Segment(s) A, B = 1.68, b All > 0.70, OK.									

9 5/8 casing inside the 13 3/8					Design Factors			INTERMEDIATE	
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight	
"A"	40.00	J 55	LT&C	2.55	1.32	0.79	5,100	204,000	
"B"							0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig:						Totals:	5,100	204,000	
The cement volume(s) are intended to achieve a top of					0	ft from surface or a		1625	overlap.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
12 1/4	0.3132	1142	2021	1696	19	11.00	2735	3M	0.81
*Assumed 1/3 Fluid Filled for Collapse Calculation									
Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.77, b, c, d All > 0.70, OK.									

5 1/2 casing inside the 9 5/8					Design Factors			PRODUCTION	
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight	
"A"	17.00	P 110	BUTT	3.09	1.58	2.12	9,772	166,124	
"B"	17.00	P 110	BUTT	7.87	1.36	2.12	5,230	88,910	
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,150						Totals:	15,002	255,034	
B would be:				51.64	1.49	if it were a vertical wellbore.			
No Pilot Hole Planned			MTD	Max VTD	Csg VD	Curve KOP	Dogleg°	Severity°	MEOC
			15002	10394	10394	9772	89	10	10665
The cement volume(s) are intended to achieve a top of					4027	ft from surface or a		1073	overlap.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
8 3/4	0.2526	1431	3158	2787	13	9.30			1.35
Class 'H' tail cmt yld > 1.20									