

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTOCD Hobbs
HOBBS OCDFORM 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.
NMLC061869

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
NMNM1371518. Well Name and No.
MORAB 29-20 FED COM 2H9. API Well No.
30-025-43775-00-X110. Field and Pool or Exploratory Area
PADUCA11. County or Parish, State
LEA COUNTY, NM

SUBMIT IN TRIPLICATE - Other instructions on page 2

RECEIVED

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

DEVON ENERGY PRODUCTION COMPANY

Contact: LINDA GOOD
Email: linda.good@devn.com

3a. Address

333 WEST SHERIDAN AVENUE
OKLAHOMA CITY, OK 73102

3b. Phone No. (include area code)

Ph: 405.552.6571

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

Sec 29 T25S R32E SENW 2455FNL 2643FWL
32.101864 N Lat, 103.697334 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☐ Subsequent Report☐ Final Abandonment Notice☐ Acidize☐ Alter Casing☐ Casing Repair☐ Change Plans☐ Convert to Injection☐ Deepen☐ Hydraulic Fracturing☐ New Construction☐ Plug and Abandon☐ Plug Back☐ Production (Start/Resume)☐ Reclamation☐ Recomplete☐ Temporarily Abandon☐ Water Disposal☐ Water Shut-Off☐ Well Integrity☒ Other
Change to Original A
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.

ATTENTION: Jesse Bassett

Devon Energy Production Co., L.P. respectfully requests to change the surface hole location from 2455 FNL 2643 FWL to 2317 FNL 2653 FWL. Please find the revised C-102 plats, Drilling Plan and Directional Plan.

Eng OK 1/2/18 CRW

NRS OK JTB 12-4-17 USE Existing COA's (Not approved to grade whole pad)

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

Electronic Submission #391305 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 11/07/2017 (18PP0198SE)

Name (Printed/Typed) LINDA GOOD

Title REGULATORY COMPLIANCE SPECIALI

Signature

(Electronic Submission)

Date 10/10/2017

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

CARL FIELD MANAGER

Date

01/04/18

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 CARLSBAD FIELD 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.

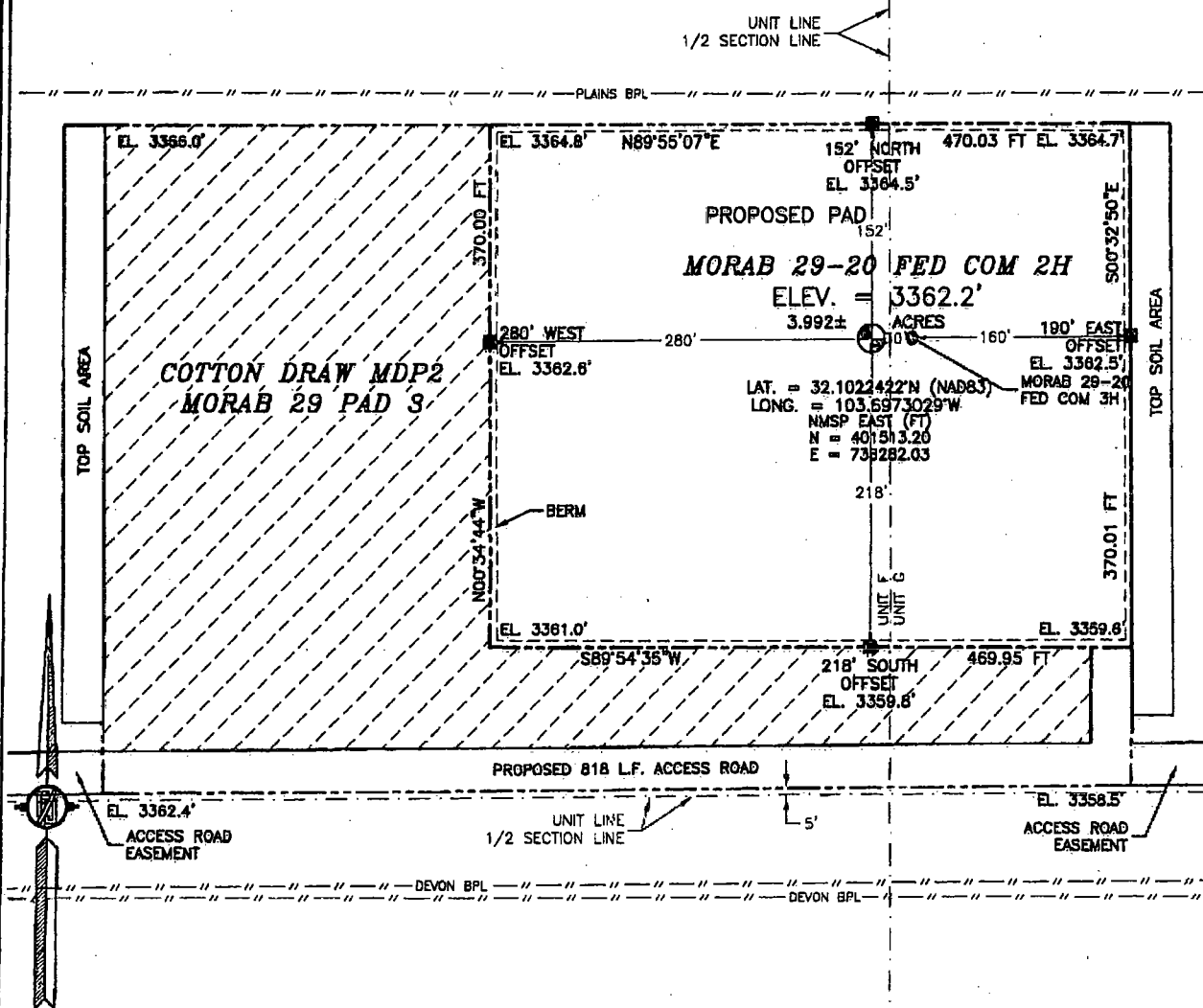
(Instructions on page 2)

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

SURVEY NO. 3990C

**SECTION 29, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE MAP**

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.



012 60 120 240

SCALE 1" = 120'

DIRECTIONS TO LOCATION

FROM STATE HWY. 128 AND CR. 1 (ORLA RD.), GO SOUTH ON CR. 1 6.1 MILES, TURN RIGHT AND GO WEST ON CALICHE ROAD (MONSANTO RD.) 2.4 MILES, TURN LEFT AND GO SOUTH 1.55 MILES TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS EAST 0.42 MILE TO THE SOUTHWEST PAD CORNER FOR COTTON DRAW MDP2 MORAB 29 PAD 3, THEN EAST 738', THEN NORTH 83' TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

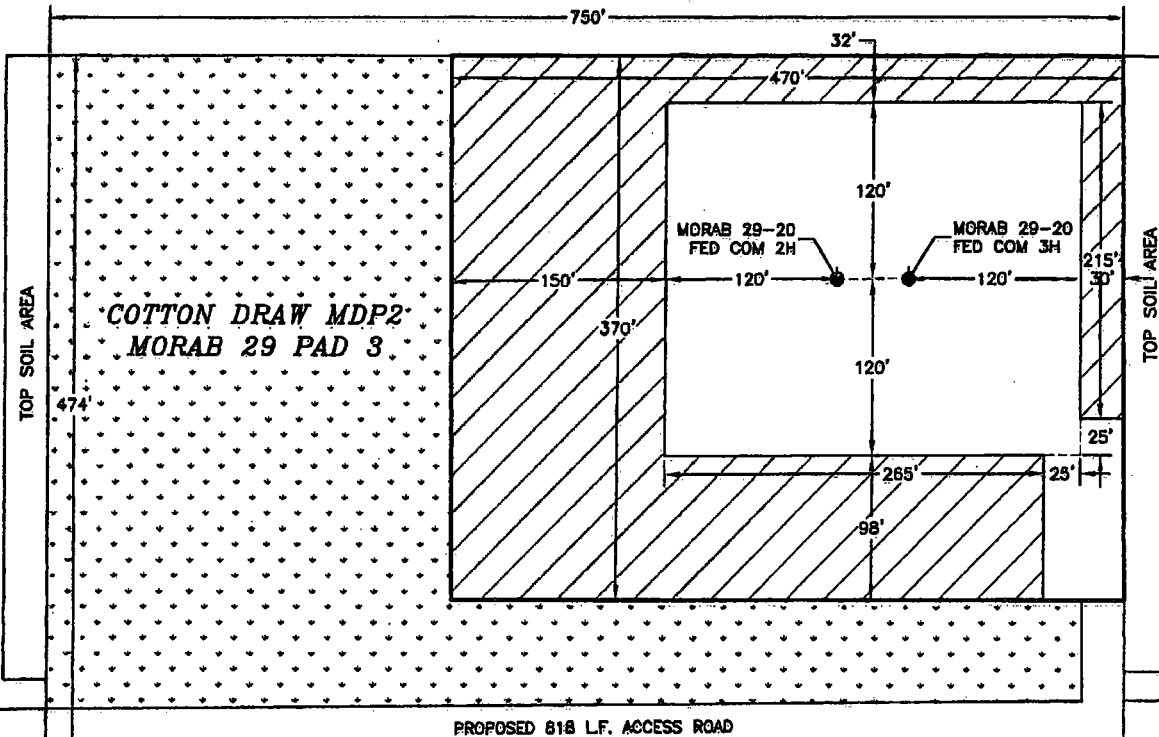
**DEVON ENERGY PRODUCTION COMPANY, L.P.
MORAB 29-20 FED COM 2H
LOCATED 2317 FT. FROM THE NORTH LINE
AND 2653 FT. FROM THE WEST LINE OF
SECTION 29, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO**

SEPTEMBER 25, 2017

SURVEY NO. 3980C

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

SECTION 29, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
INTERIM SITE RECLAMATION



DENOTES INTERIM PAD
RECLAMATION AREA



DENOTES GRADING SITE
RECLAMATION AREA

012 60 120 240
SCALE 1" = 120'

2.250± ACRES INTERIM PAD RECLAMATION AREA
3.554± ACRES GRADING SITE RECLAMATION AREA
2.308± ACRES NON-RECLAIMED AREA
8.112± ACRES COTTON DRAW MDP 2 MORAB 29 PAD 3

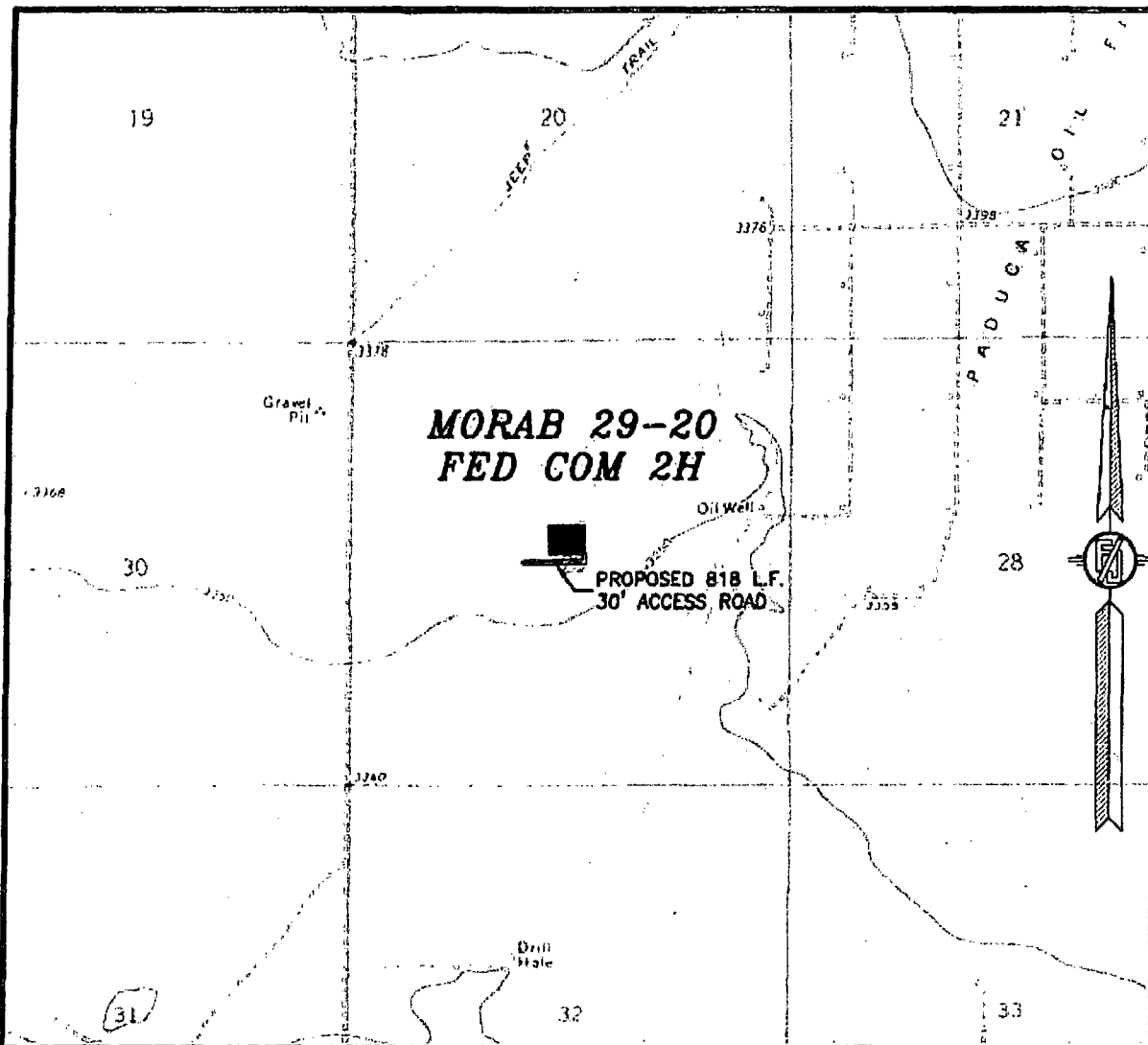
DEVON ENERGY PRODUCTION COMPANY, L.P.
MORAB 29-20 FED COM 2H
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AND 2653 FT. FROM THE WEST LINE OF
SECTION 29, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

SEPTEMBER 25, 2017

SURVEY NO. 8990C

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

SECTION 29, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
PADUCA BREAKS WEST

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
MORAB 29-20 FED COM 2H

LOCATED 2317 FT. FROM THE NORTH LINE
AND 2653 FT. FROM THE WEST LINE OF
SECTION 29, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

SEPTEMBER 25, 2017

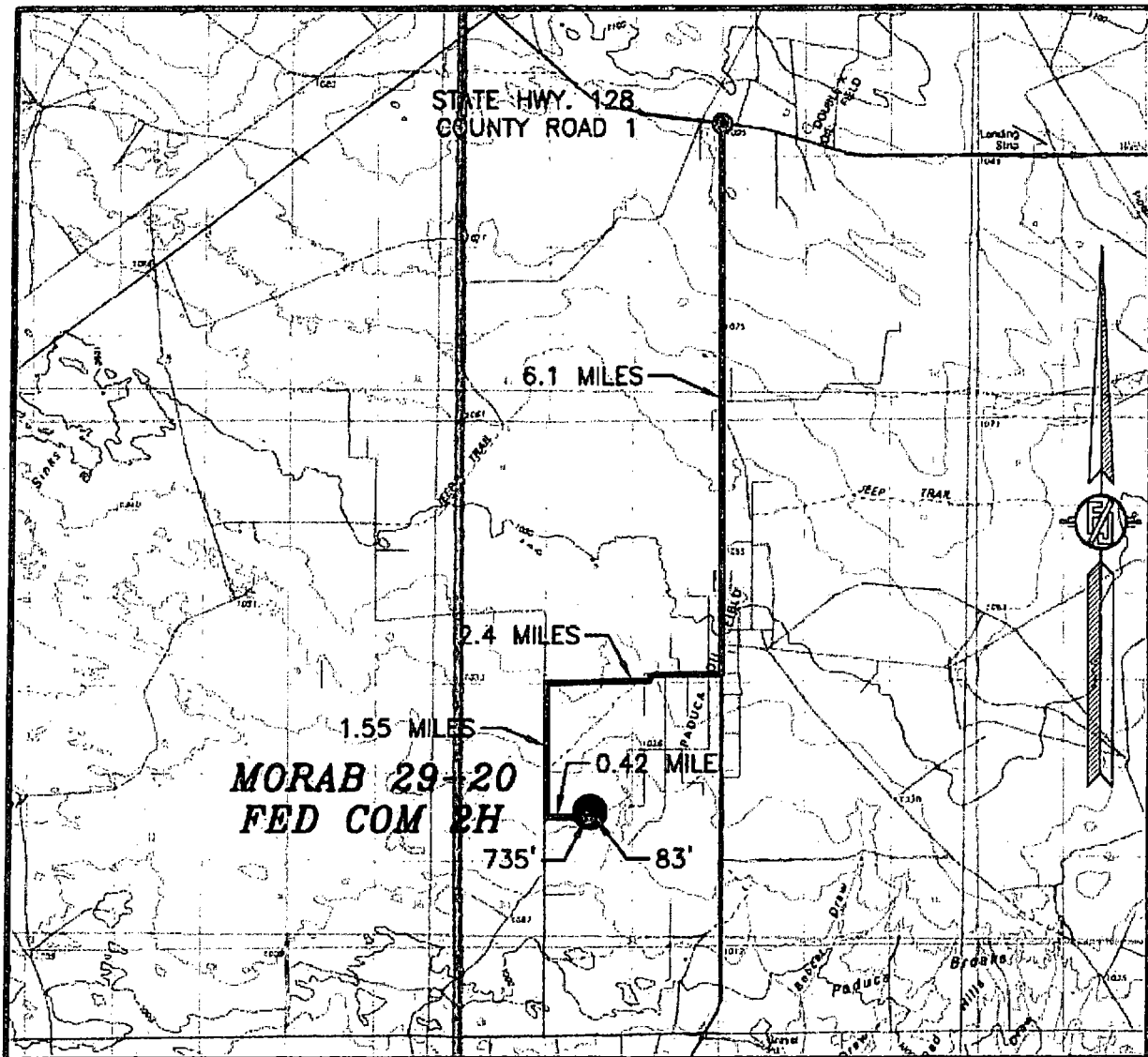
MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

SURVEY NO. 3990C

SECTION 29, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION
FROM STATE HWY. 128 AND CR. 1 (ORLA RD.), GO SOUTH ON CR. 1
6.1 MILES, TURN RIGHT AND GO WEST ON CALICHE ROAD (MONSANTO
RD.) 2.4 MILES, TURN LEFT AND GO SOUTH 1.55 MILES TO A
PROPOSED ROAD SURVEY AND FOLLOW FLAGS EAST 0.42 MILE TO
THE SOUTHWEST PAD CORNER FOR COTTON DRAW MDP2 MORAB 29
PAD 3, THEN EAST 735', THEN NORTH 83' TO THE SOUTHEAST PAD
CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.
MORAB 29-20 FED COM 2H

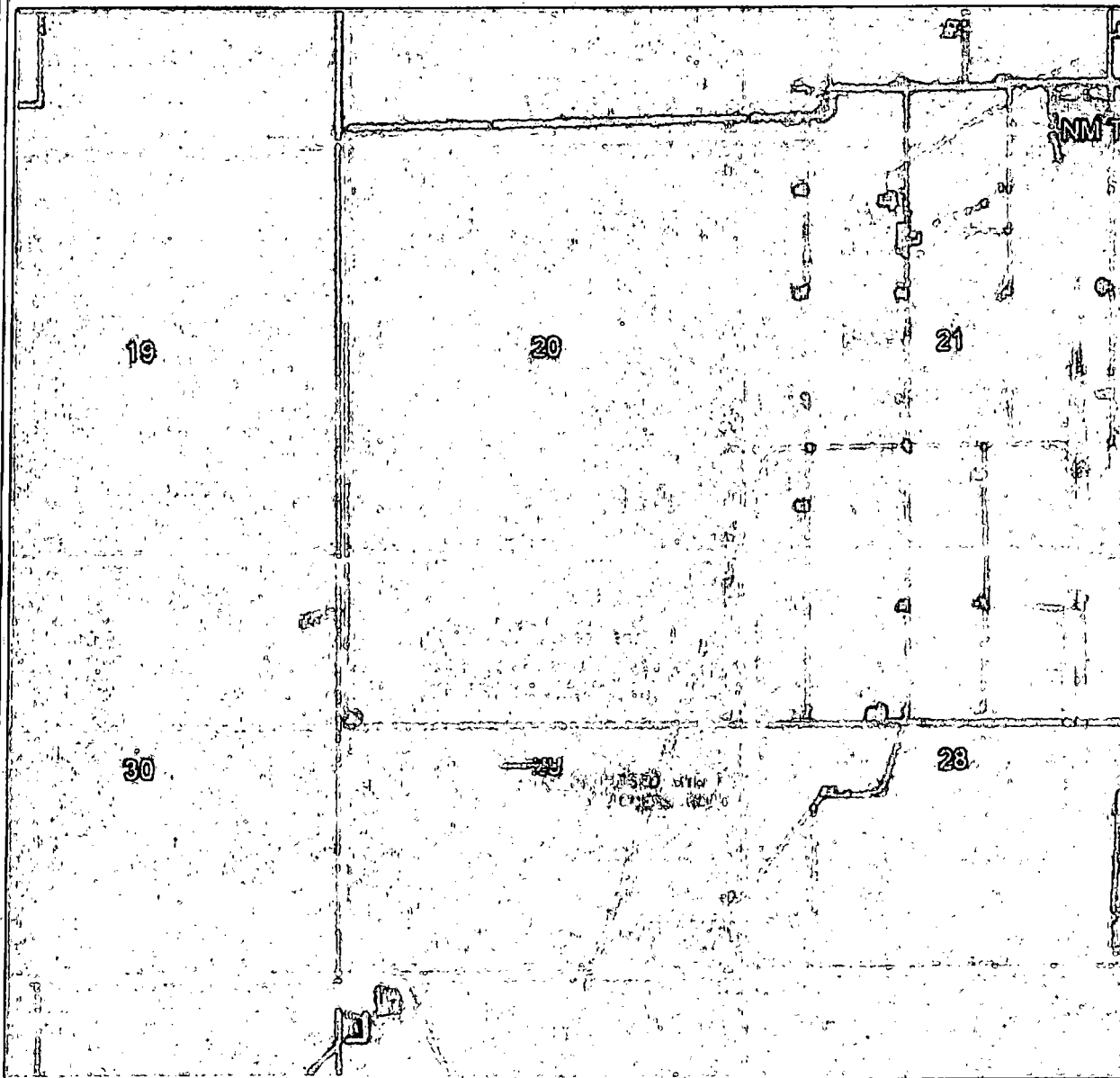
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LEA COUNTY, STATE OF NEW MEXICO

SEPTEMBER 25, 2017

SURVEY NO. 3990C

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

SECTION 29, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEB. 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.
MORAB 29-20 FED COM 2H

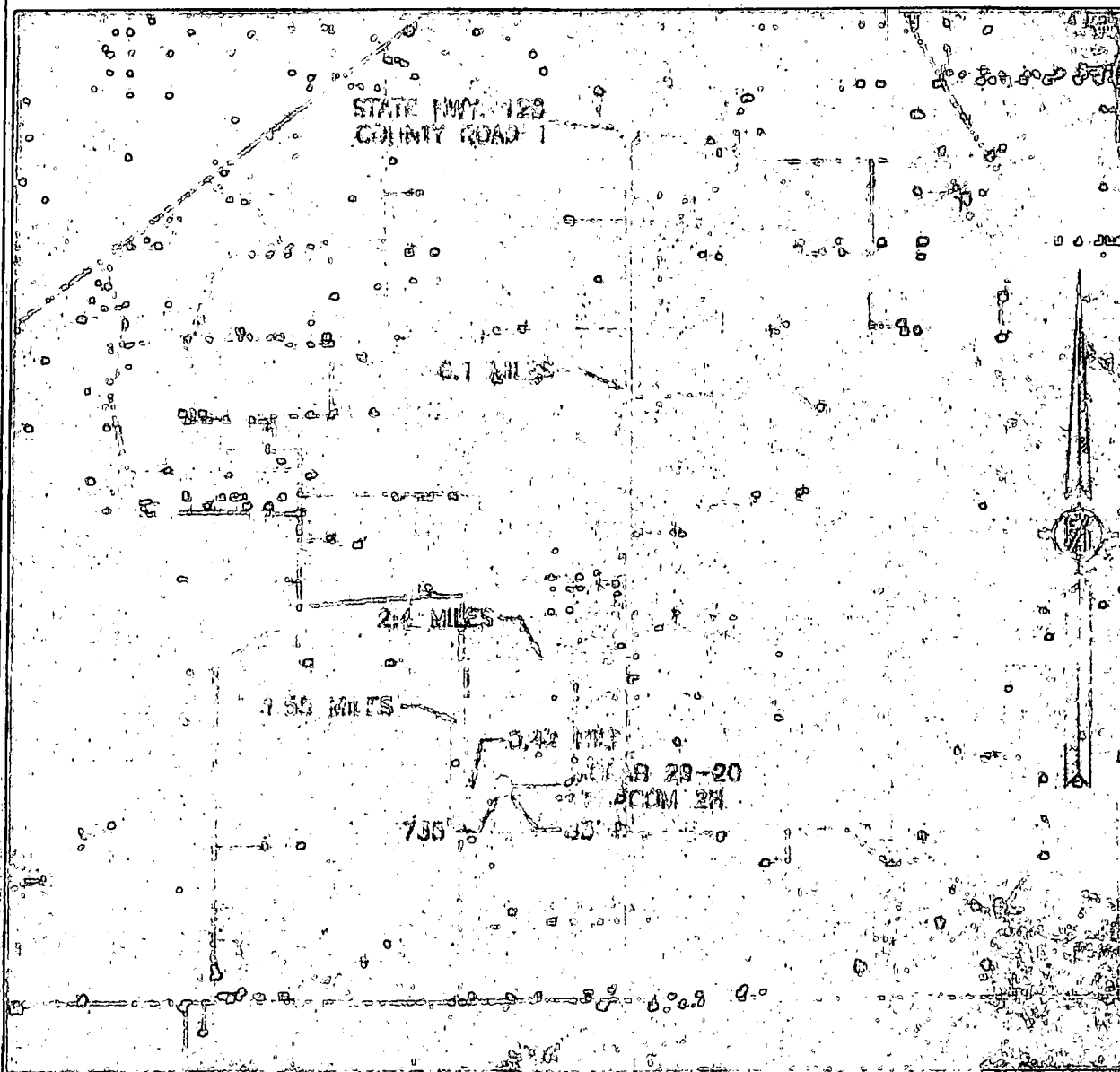
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SECTION 29, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

SEPTEMBER 25, 2017

SURVEY NO. 3990C

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

SECTION 29, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEB. 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.
MORAB 29-20 FED COM 2H

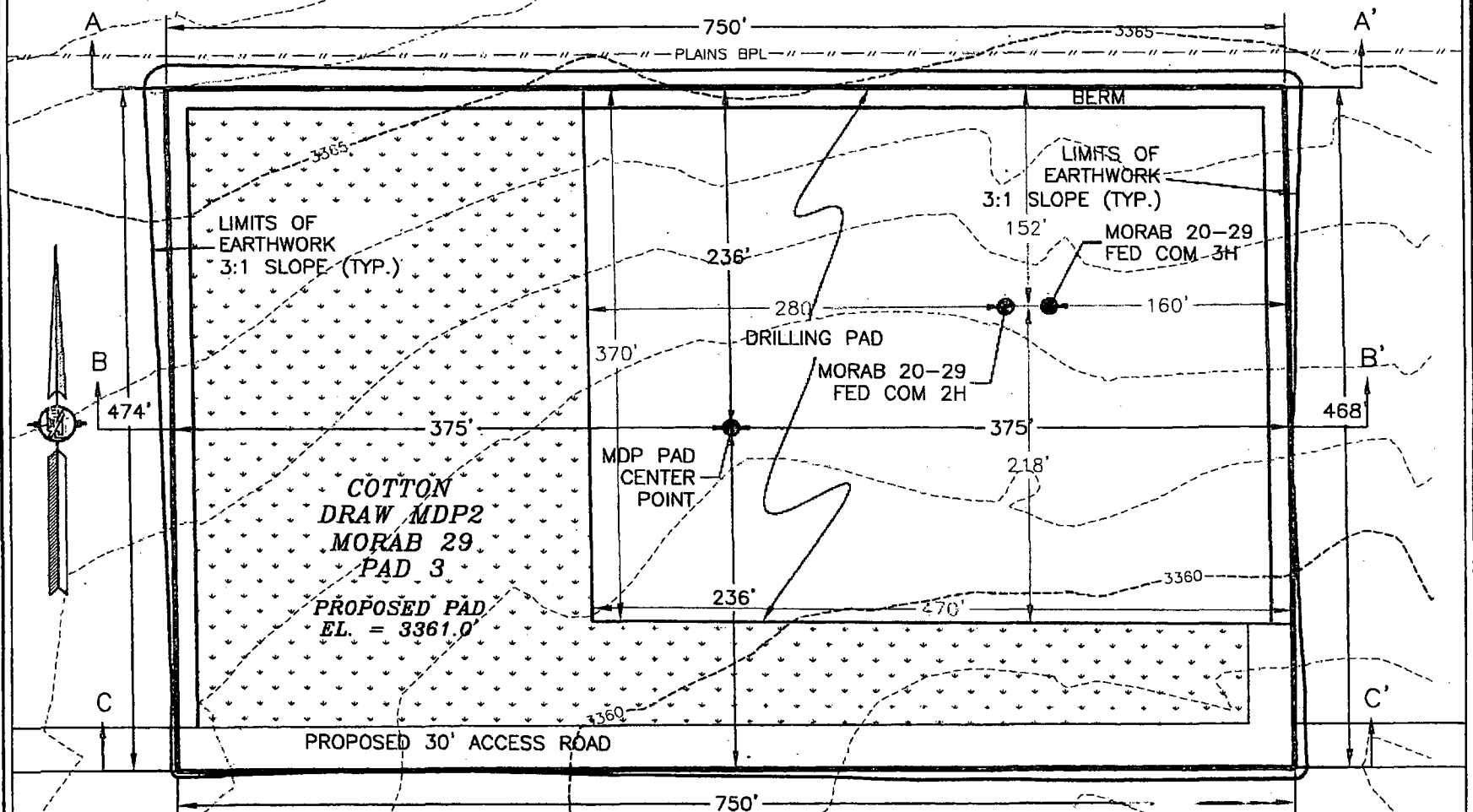
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RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

SEPTEMBER 25, 2017

SURVEY NO. 3990C

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

PLAN VIEW



0 10 50 100 200
SCALE 1" = 100'

DEVON ENERGY PRODUCTION COMPANY, L.P.
PAD GRADING PLAN AND CROSS SECTIONS
FOR MORAB 29-20 FED COM 2H
SECTION 29, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

EARTHWORK QUANTITIES

COTTON DRAW MDP2 MORAB 29 PAD 3		
CUT	FILL	NET
17929 CU. YD	4691 CU. YD	1323.8 CU. YD (CUT)

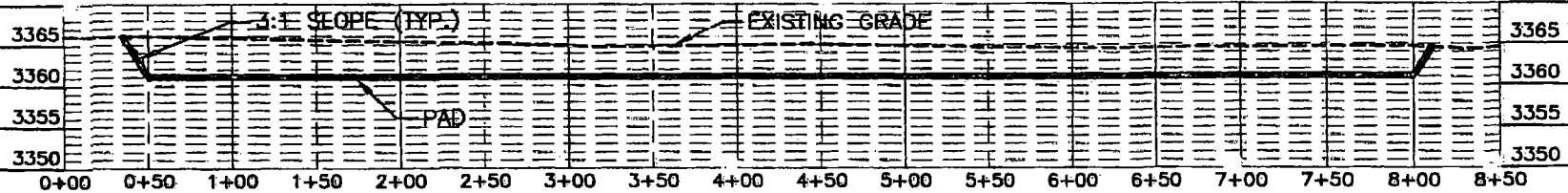
EARTHWORK QUANTITIES ARE ESTIMATED

SEPTEMBER 25, 2017
MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

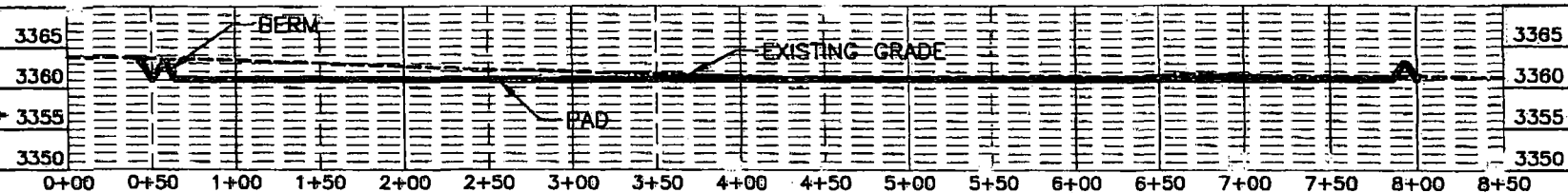
SHEET 1-2
SURVEY NO. 3990C

CROSS-SECTIONS

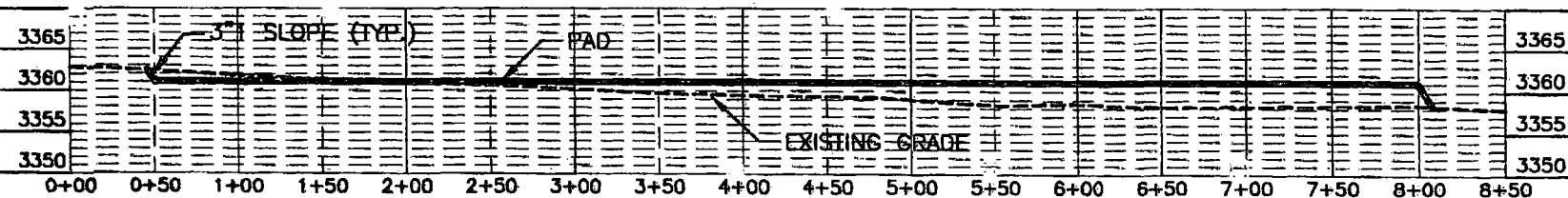
SECTION A-A'



SECTION B-B'



SECTION C-C'



0 50 100 200
SCALE 1" = 100' - 1" = 20' VER

DEVON ENERGY PRODUCTION COMPANY, L.P.
PAD GRADING PLAN AND CROSS SECTIONS
FOR MORAB 29-20 FED COM 2H
SECTION 29, TOWNSHIP 26 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

EARTHWORK QUANTITIES		
COTTON DRAW MDP2 MORAB 29 PAD 3		
CUT	FILL	NET
17929 CU. YD	4691 CU. YD	1323.8 CU. YD (CUT)
EARTHWORK QUANTITIES ARE ESTIMATED		

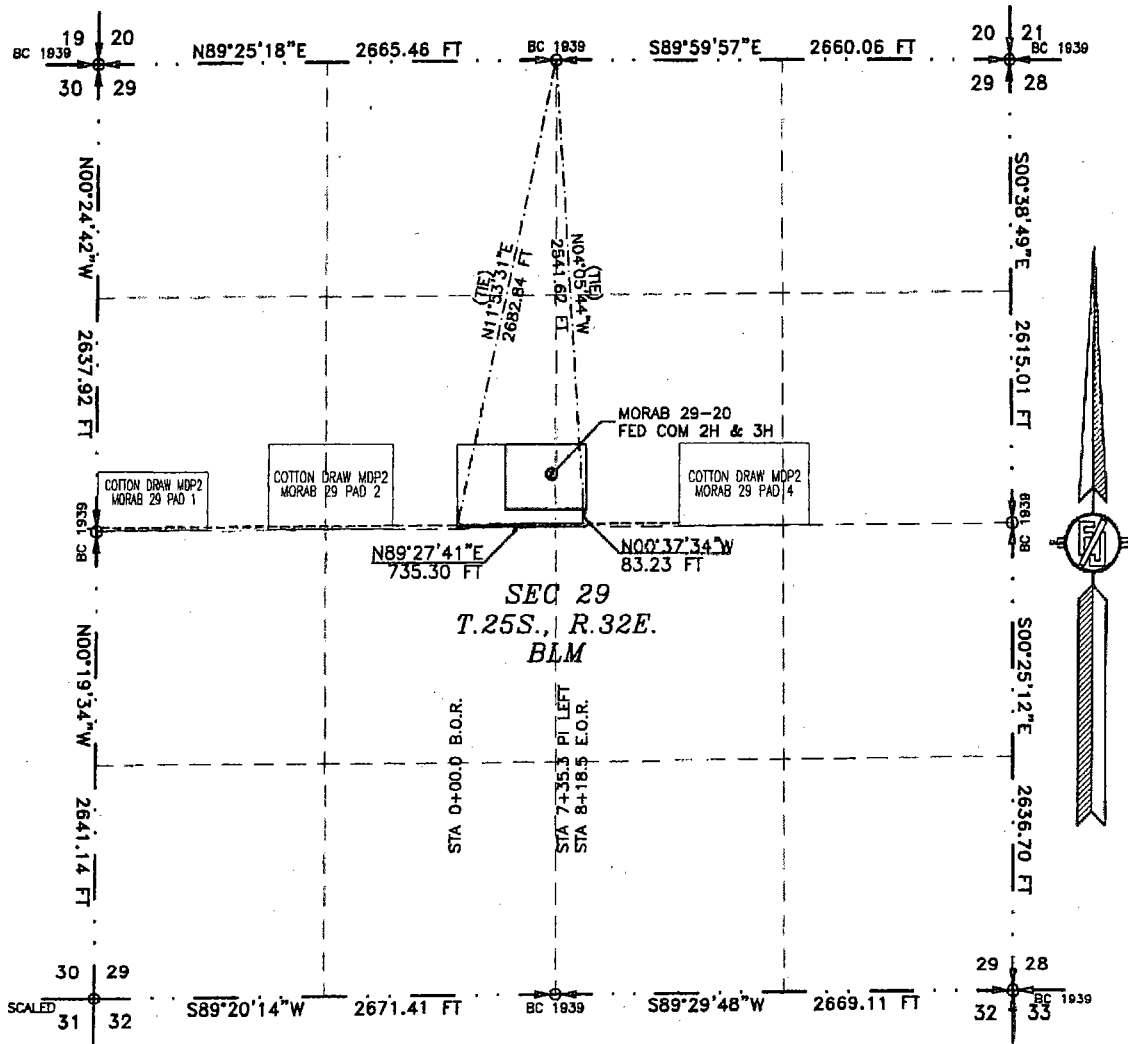
SEPTEMBER 25, 2017
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SHEET 2-2
SURVEY NO. 3990C

ACCESS ROAD PLAT

ACCESS ROAD FOR MORAB 29-20 FED COM 2H & 3H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 29, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SEPTEMBER 25, 2017



SEE NEXT SHEET (2-2) FOR DESCRIPTION

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 26 DAY OF SEPTEMBER, 2017

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

SURVEY NO. 3990C



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

ACCESS ROAD PLAT

ACCESS ROAD FOR MORAB 29-20 FED COM 2H & 3H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 29, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SEPTEMBER 25, 2017

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 29, TOWNSHIP 25 SOUTH, RANGE 32 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 NW/4 OF SAID SECTION 29, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 29, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N11°53'31"E, A DISTANCE OF 2682.84 FEET;
THENCE N89°27'41"E A DISTANCE OF 735.30 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N00°37'34"W A DISTANCE OF 83.23 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 29, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N04°05'44"W, A DISTANCE OF 2541.62 FEET;

SAID STRIP OF LAND BEING 818.53 FEET OR 49.61 RODS IN LENGTH, CONTAINING 0.564 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 NW/4	572.68 L.F.	34.71 RODS	0.394 ACRES
SW/4 NE/4	245.85 L.F.	14.90 RODS	0.169 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 25 DAY OF SEPTEMBER 2017

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.

301 SOUTH CANAL
(575) 234-3341

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

SURVEY NO. 3990C

CARLSBAD, NEW MEXICO

Devon Energy, Morab 29-20 Fed Com 2H

1. Geologic Formations

TVD of target	10526	Pilot hole depth	N/A
MD at TD:	17803	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	978	Barren	
Top of Salt	1231	Barren	
Base of Salt	4291	Barren	
Bell Canyon	4564	Oil & Gas	
Cherry Canyon	5452		
Brushy Canyon	6599	Oil & Gas	
1 st Bone Spring Lime	8403		
1 st Bone Spring Sand	9503	Oil & Gas	
2 nd Bone Spring Lime	9726	Oil & Gas	
2 nd Bone Spring Sand	10083	Oil & Gas	
KOP	10015		
2 nd Bone Spring Target (Heel)	10526	Oil & Gas	
2 nd Bone Spring Target (Toe)	10496	Oil & Gas	

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

Devon Energy, Morab 29-20 Fed Com 2H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	1000	13.375"	48	J55	STC	1.74	2.45	4.13
12.25"	0	4315	9.625"	40	J55	LTC	1.19	1.42	3.98
8.75"	0	17803	5.5"	17	P-110	BTC	2.18	2.7	3.21
BLM Minimum Safety Factor							1.10	1.10	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?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd 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 2 nd 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

Devon Energy, Morab 29-20 Fed Com 2H

Casing	# Sks	Wt. lb/gal	H ₂ O gal/sk	Yld ft ³ /sack	500# Comp. Strength (hours)	Slurry Description
Surf.	778	14.8	6.32	1.33	7	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
Inter.	730	12.9	9.81	1.85	17	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	320	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
5-1/2" Prod	612	9	13.5	3.27	21	Lead: Tuned Light® Cement
	1962	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
Prod.	810	12.5	10.86	1.96	30	1 st Lead: (65:35) Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake
	2030	14.5	5.31	1.2	25	1 st 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/ECP Tool 5000'					
	80	11	14.81	2.55	22	2 nd stage Lead: Tuned Light® Cement + 0.125 lb/sk Pol-E-Flake
	120	14.8	6.32	1.33	6	2 nd stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake

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
Surface	0'	100%
Intermediate	0'	75%
Production	1 st Stage = 5000' / 2 nd Stage = 4100'	25%

Devon Energy, Morab 29-20 Fed Com 2H

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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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.
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Devon Energy, Morab 29-20 Fed Com 2H

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?
Y	A multibowl wellhead may be 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 wellhead representatives. - If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. - Wellhead representative will install the test plug for the initial BOP test. - Wellhead company 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 Energy, Morab 29-20 Fed Com 2H

	Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron. 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.
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5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	1000	FW Gel	8.6-8.8	28-34	N/C
1000	4315	Saturated Brine	10.0-10.2	28-34	N/C
4315	17803	WBM	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/Pason/Visual Monitoring
---	-----------------------------

6. Logging and Testing Procedures

Logging, Coring and Testing.	
x	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain ~100 RSWC planned to be taken in pilot hole; depth to be chosen based on logs

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

Devon Energy, Morab 29-20 Fed Com 2H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4750 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.

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

☒ Directional Plan

☐ Other, describe



Devon Energy
Morab 29-20 Fed Com 2H
Lea Co, NM



Plan Data for Morab 29-20 Fed Com 2H

Plan Point Information:										
DogLeg Severity Unit: %/100.00ft										
Position offsets from Slot centre										
MD	Inc	Az	TVD	+N/-S	+E/-W	Northing	Easting	VSec	DLS	Comments
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(DLSU)	
0.00	0.00	0.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	0.00	
4100.00	0.00	0.00	4100.00	-0.00	-0.00	401513.20	738282.03	0.00	0.00	Nudge 1° DLS
4554.02	4.54	245.79	4553.55	-7.37	-16.40	401505.83	738265.63	-6.60	1.00	Hold
9123.59	4.54	245.79	9108.77	-155.70	-346.31	401357.50	737935.72	-139.46	0.00	Drop .5° DLS
10031.63	0.00	0.00	10015.87	-170.44	-379.11	401342.76	737902.92	-152.66	0.50	KOP- Build 10° DLS
10231.63	20.00	357.34	10211.83	-135.92	-380.71	401377.28	737901.32	-118.11	18.00	Build 12° DLS
10817.02	90.25	357.34	10525.99	314.31	-401.61	401827.51	737880.42	332.61	12.00	Landing Pt
17803.88	90.25	357.34	10496.00	7293.60	-725.47	408806.80	737556.56	7319.41	0.00	PBHL 2H

Plan Data for Morab 29-20 Fed Com 2H

Field: Lea Co, NM Nad 83 NMEZ
Map Unit: USFt Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / New Mexico East (ftUS)

Site: Morab 29-20 Fed Com 2H
Unit: USFeet TVD Reference:
Company Name: Devon Energy
Position: Northing: 401513.20USft Latitude: 32.102242°
Easting: 738282.03USft Longitude: -103.697303°
North Reference: Grid Grid Convergence: 0.34°
Elevation Above VRD: 3362.20USft

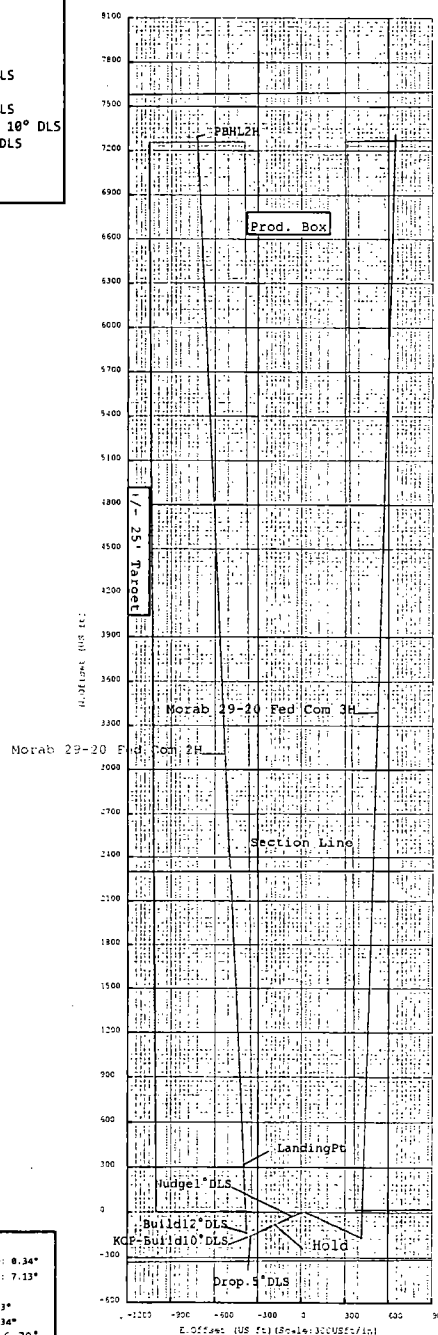
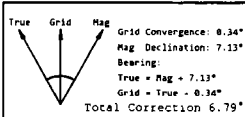
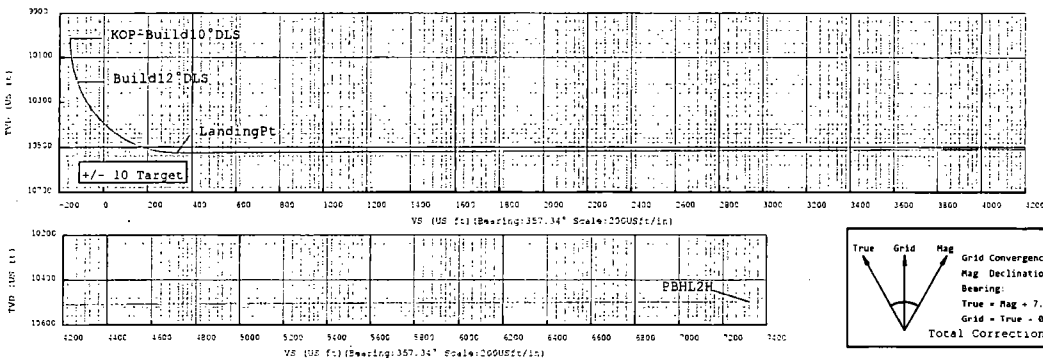
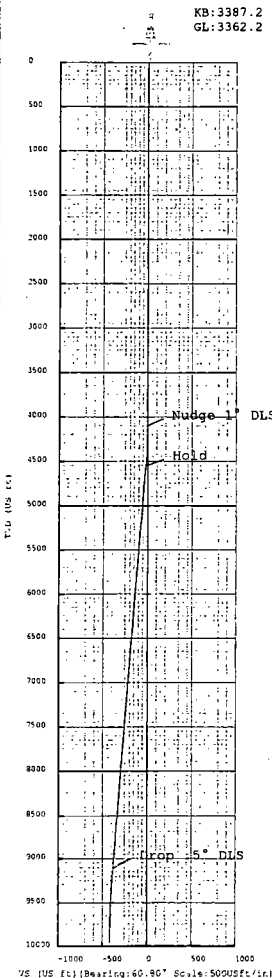
Slot: Morab 29-20 Fed Com 2H
Position:
Offset is from Site centre
Northing: 401513.20USft Latitude: 32.102242°
+E/-W: 0.00USft Easting: 738282.03USft Longitude: -103.697303°
Elevation Above VRD: 3362.20USft

Well: Morab 29-20 Fed Com 2H
Type: Main-Well
File Number:

Plan Folder: P1 Plan: P1:V2
Vertical Section: Position offset of origin from Slot centre:
+N/-S: -0.00USft Azimuth: 357.34°
+E/-W: -0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
bggm2016 48004(NT) 7.13° 59.94° 2016-11-15

Plan Data for Morab 29-20 Fed Com 2H

Target Set Information:						
Name: Morab 29-20 Fed Com 2H Tgts						
Position offsets from Slot centre						
Name	TVD	Elevation	+N/-S	+E/-W	Northing	Easting
(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)
PBHL 2H	10496.00	-7108.80	7293.60	-725.47	408806.80	737556.56
VP	10015.87	-6628.67	-170.44	-379.11	401342.76	737902.92



**5D Plan Report****Devon Energy****Field Name:** *Lea Co, NM Nad 83 NMEZ***Site Name:** *Morab 29-20 Fed Com 2H***Well Name:** *Morab 29-20 Fed Com 2H***Plan:** *P1:V2*

6 October 2017

**Weatherford®**



devon

Weatherford
Morab 29-20 Fed Com 2H

Field Name: Lea Co, NM Nad 83 NMEZ	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: Morab 29-20 Fed Com 2H	Units: US ft	North Reference: Grid	Convergence Angle: 0.34	
	Position:	Northing: 401513.20 US ft	Latitude: 32.102242158	
		Easting: 738282.03 US ft	Longitude: -103.697302866	
	Elevation above MSL: 3362.20 US ft		Comment:	
Slot: Morab 29-20 Fed Com 2H	Position (Relative to Site Centre)			
	+N/-S: 0.00 US ft	Northing: 401513.20 US ft	Latitude: 32.102242158	
	+E/-W: 0.00 US ft	Easting: 738282.03 US ft	Longitude: -103.697302866	
	Slot TVD Reference: Ground Elevation			
	Elevation above MSL: 3362.20 US ft			
Well: Morab 29-20 Fed Com 2H	Type: Main well		UWI:	Plan: P1:V2
	File Number:	Comment:		
	Closure Distance: 7329.59 US ft		Closure Azimuth: 354.32°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: -0.00 US ft	+E/-W: -0.00 US ft	Az: 357.34°	
	Magnetic Parameters:			
	Model: bggm2016	Field Strength: 48004.5nT	Declination: 7.13°	Dip: 59.94°
	Date: 15/Nov/2016			

Drill floor: Plan: P1:V2

Rig Height (Drill Floor): 25.00 US ft	Elevation above MSL: 3387.20 US ft	Inclination: 0.00°	Azimuth: 0.00°
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Target set: Morab 29-20 Fed Com 2H Tgts Comment:

Target Name:	Shape:	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	Comment
PBHL 2H	Point	10496.00	7293.60	-725.47	408806.80	737556.56	
VP	Point	10015.87	-170.44	-379.11	401342.76	737902.92	

Wellpath created using minimum curvature.
Tie Point:

MD: 0.00 US ft	Inclination: 0.00°	Azimuth: 0.00°	TVD: 0.00 US ft	North Offset: 0.00 US ft	East Offset: 0.00 US ft
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5D Plan Report

Salient Points (Relative to Slot centre) (TVD relative to Drill Floor)										Comment
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (%/100US ft)	
0.00	0.00	0.00	0.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
4100.00	0.00	0.00	4100.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	Nudge 1° DLS
4554.02	4.54	245.79	4553.55	-6.60	-7.37	-16.40	401505.83	738265.63	1.00	Hold
9123.59	4.54	245.79	9108.77	-139.46	-155.70	-346.31	401357.50	737935.72	0.00	Drop .5° DLS
10031.63	0.00	0.00	10015.87	-152.66	-170.44	-379.11	401342.76	737902.92	0.50	KOP- Build 10° DLS
10231.63	20.00	357.34	10211.83	-118.11	-135.92	-380.71	401377.28	737901.32	10.00	Build 12° DLS
10817.02	90.25	357.34	10525.99	332.61	314.31	-401.61	401827.51	737880.42	12.00	Landing Pt
17803.88	90.25	357.34	10496.00	7319.41	7293.60	-725.47	408806.80	737556.56	0.00	PBHL 2H

Interpolated Points (Relative to Slot centre) (TVD relative to Drill Floor)										Comment
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (%/100US ft)	
0.00	0.00	0.00	0.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
100.00	0.00	0.00	100.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
200.00	0.00	0.00	200.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
300.00	0.00	0.00	300.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
400.00	0.00	0.00	400.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
500.00	0.00	0.00	500.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
600.00	0.00	0.00	600.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
700.00	0.00	0.00	700.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
800.00	0.00	0.00	800.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
900.00	0.00	0.00	900.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
1000.00	0.00	0.00	1000.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
1100.00	0.00	0.00	1100.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
1200.00	0.00	0.00	1200.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
1300.00	0.00	0.00	1300.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
1400.00	0.00	0.00	1400.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
1500.00	0.00	0.00	1500.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
1600.00	0.00	0.00	1600.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
1700.00	0.00	0.00	1700.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
1800.00	0.00	0.00	1800.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
1900.00	0.00	0.00	1900.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
2000.00	0.00	0.00	2000.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
2100.00	0.00	0.00	2100.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
2200.00	0.00	0.00	2200.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
2300.00	0.00	0.00	2300.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
2400.00	0.00	0.00	2400.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
2500.00	0.00	0.00	2500.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
2600.00	0.00	0.00	2600.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
2700.00	0.00	0.00	2700.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
2800.00	0.00	0.00	2800.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
2900.00	0.00	0.00	2900.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
3000.00	0.00	0.00	3000.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
3100.00	0.00	0.00	3100.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
3200.00	0.00	0.00	3200.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
3300.00	0.00	0.00	3300.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
3400.00	0.00	0.00	3400.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
3500.00	0.00	0.00	3500.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
3600.00	0.00	0.00	3600.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
3700.00	0.00	0.00	3700.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
3800.00	0.00	0.00	3800.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
3900.00	0.00	0.00	3900.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
4000.00	0.00	0.00	4000.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	
4100.00	0.00	0.00	4100.00	0.00	-0.00	-0.00	401513.20	738282.03	0.00	Nudge 1° DLS
4200.00	1.00	245.79	4199.99	-0.32	-0.36	-0.80	401512.84	738281.23	1.00	
4300.00	2.00	245.79	4299.96	-1.28	-1.43	-3.18	401511.77	738278.85	1.00	
4400.00	3.00	245.79	4399.86	-2.88	-3.22	-7.16	401509.98	738274.87	1.00	

5D Plan Report

Interpolated Points (Relative to Slot centre) (TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
4500.00	4.00	245.79	4499.68	-5.13	-5.72	-12.73	401507.48	738269.30	1.00	
4554.02	4.54	245.79	4553.55	-6.60	-7.37	-16.40	401505.83	738265.63	1.00	Hold
4600.00	4.54	245.79	4599.38	-7.94	-8.86	-19.72	401504.34	738262.31	0.00	
4700.00	4.54	245.79	4699.07	-10.85	-12.11	-26.94	401501.09	738255.09	0.00	
4800.00	4.54	245.79	4798.75	-13.75	-15.36	-34.16	401497.84	738247.87	0.00	
4900.00	4.54	245.79	4898.44	-16.66	-18.60	-41.38	401494.60	738240.65	0.00	
5000.00	4.54	245.79	4998.13	-19.57	-21.85	-48.60	401491.35	738233.43	0.00	
5100.00	4.54	245.79	5097.81	-22.48	-25.09	-55.82	401488.11	738226.21	0.00	
5200.00	4.54	245.79	5197.50	-25.38	-28.34	-63.04	401484.86	738218.99	0.00	
5300.00	4.54	245.79	5297.18	-28.29	-31.59	-70.26	401481.61	738211.77	0.00	
5400.00	4.54	245.79	5396.87	-31.20	-34.83	-77.48	401478.37	738204.55	0.00	
5500.00	4.54	245.79	5496.56	-34.11	-38.08	-84.70	401475.12	738197.33	0.00	
5600.00	4.54	245.79	5596.24	-37.01	-41.32	-91.92	401471.88	738190.11	0.00	
5700.00	4.54	245.79	5695.93	-39.92	-44.57	-99.14	401468.63	738182.89	0.00	
5800.00	4.54	245.79	5795.62	-42.83	-47.82	-106.36	401465.38	738175.67	0.00	
5900.00	4.54	245.79	5895.30	-45.74	-51.06	-113.58	401462.14	738168.45	0.00	
6000.00	4.54	245.79	5994.99	-48.64	-54.31	-120.80	401458.89	738161.23	0.00	
6100.00	4.54	245.79	6094.67	-51.55	-57.55	-128.02	401455.65	738154.01	0.00	
6200.00	4.54	245.79	6194.36	-54.46	-60.80	-135.24	401452.40	738146.79	0.00	
6300.00	4.54	245.79	6294.05	-57.36	-64.04	-142.45	401449.16	738139.58	0.00	
6400.00	4.54	245.79	6393.73	-60.27	-67.29	-149.67	401445.91	738132.36	0.00	
6500.00	4.54	245.79	6493.42	-63.18	-70.54	-156.89	401442.66	738125.14	0.00	
6600.00	4.54	245.79	6593.10	-66.09	-73.78	-164.11	401439.42	738117.92	0.00	
6700.00	4.54	245.79	6692.79	-68.99	-77.03	-171.33	401436.17	738110.70	0.00	
6800.00	4.54	245.79	6792.48	-71.90	-80.27	-178.55	401432.93	738103.48	0.00	
6900.00	4.54	245.79	6892.16	-74.81	-83.52	-185.77	401429.68	738096.26	0.00	
7000.00	4.54	245.79	6991.85	-77.72	-86.77	-192.99	401426.43	738089.04	0.00	
7100.00	4.54	245.79	7091.54	-80.62	-90.01	-200.21	401423.19	738081.82	0.00	
7200.00	4.54	245.79	7191.22	-83.53	-93.26	-207.43	401419.94	738074.60	0.00	
7300.00	4.54	245.79	7290.91	-86.44	-96.50	-214.65	401416.70	738067.38	0.00	
7400.00	4.54	245.79	7390.59	-89.35	-99.75	-221.87	401413.45	738060.16	0.00	
7500.00	4.54	245.79	7490.28	-92.25	-103.00	-229.09	401410.20	738052.94	0.00	
7600.00	4.54	245.79	7589.97	-95.16	-106.24	-236.31	401406.96	738045.72	0.00	
7700.00	4.54	245.79	7689.65	-98.07	-109.49	-243.53	401403.71	738038.50	0.00	
7800.00	4.54	245.79	7789.34	-100.97	-112.73	-250.75	401400.47	738031.28	0.00	
7900.00	4.54	245.79	7889.03	-103.88	-115.98	-257.97	401397.22	738024.06	0.00	
8000.00	4.54	245.79	7988.71	-106.79	-119.22	-265.19	401393.98	738016.84	0.00	
8100.00	4.54	245.79	8088.40	-109.70	-122.47	-272.41	401390.73	738009.62	0.00	
8200.00	4.54	245.79	8188.08	-112.60	-125.72	-279.63	401387.48	738002.40	0.00	
8300.00	4.54	245.79	8287.77	-115.51	-128.96	-286.85	401384.24	737995.18	0.00	
8400.00	4.54	245.79	8387.46	-118.42	-132.21	-294.07	401380.99	737987.96	0.00	
8500.00	4.54	245.79	8487.14	-121.33	-135.45	-301.29	401377.75	737980.74	0.00	
8600.00	4.54	245.79	8586.83	-124.23	-138.70	-308.51	401374.50	737973.52	0.00	
8700.00	4.54	245.79	8686.51	-127.14	-141.95	-315.73	401371.25	737966.30	0.00	
8800.00	4.54	245.79	8786.20	-130.05	-145.19	-322.95	401368.01	737959.08	0.00	
8900.00	4.54	245.79	8885.89	-132.95	-148.44	-330.17	401364.76	737951.86	0.00	
9000.00	4.54	245.79	8985.57	-135.86	-151.68	-337.39	401361.52	737944.64	0.00	
9100.00	4.54	245.79	9085.26	-138.77	-154.93	-344.61	401358.27	737937.42	0.00	
9123.59	4.54	245.79	9108.77	-139.46	-155.70	-346.31	401357.50	737935.72	0.00	Drop .5° DLS
9200.00	4.16	245.79	9184.97	-141.58	-158.07	-351.60	401355.13	737930.43	0.50	
9300.00	3.66	245.79	9284.73	-144.09	-160.87	-357.81	401352.33	737924.22	0.50	
9400.00	3.16	245.79	9384.56	-146.27	-163.30	-363.24	401349.90	737918.79	0.50	
9500.00	2.66	245.79	9484.43	-148.13	-165.38	-367.86	401347.82	737914.17	0.50	
9600.00	2.16	245.79	9584.34	-149.68	-167.11	-371.70	401346.09	737910.33	0.50	
9700.00	1.66	245.79	9684.28	-150.90	-168.47	-374.73	401344.73	737907.30	0.50	
9800.00	1.16	245.79	9784.25	-151.80	-169.48	-376.97	401343.72	737905.06	0.50	
9900.00	0.66	245.79	9884.24	-152.38	-170.13	-378.42	401343.07	737903.61	0.50	
10000.00	0.16	245.79	9984.24	-152.65	-170.42	-379.07	401342.78	737902.96	0.50	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
10031.63	0.00	0.00	10015.87	-152.66	-170.44	-379.11	401342.76	737902.92	0.50	KOP- Build 10° DLS
10100.00	6.84	357.34	10084.07	-148.59	-166.37	-379.30	401346.83	737902.73	10.00	
10200.00	16.84	357.34	10181.82	-128.10	-145.91	-380.25	401367.29	737901.78	10.00	
10231.63	20.00	357.34	10211.83	-118.11	-135.92	-380.71	401377.28	737901.32	10.00	Build 12° DLS
10300.00	28.20	357.34	10274.19	-90.21	-108.06	-382.01	401405.14	737900.02	12.00	
10400.00	40.20	357.34	10356.74	-34.10	-52.01	-384.61	401461.19	737897.42	12.00	
10500.00	52.20	357.34	10425.82	37.95	19.96	-387.95	401533.16	737894.08	12.00	
10600.00	64.20	357.34	10478.42	122.78	104.71	-391.89	401617.91	737890.14	12.00	
10700.00	76.20	357.34	10512.22	216.70	198.53	-396.24	401711.73	737885.79	12.00	
10800.00	88.20	357.34	10525.76	315.60	297.31	-400.82	401810.51	737881.21	12.00	
10817.02	90.25	357.34	10525.99	332.61	314.31	-401.61	401827.51	737880.42	12.00	Landing Pt
10900.00	90.25	357.34	10525.63	415.59	397.20	-405.46	401910.40	737876.57	0.00	
11000.00	90.25	357.34	10525.21	515.59	497.10	-410.09	402010.30	737871.94	0.00	
11100.00	90.25	357.34	10524.78	615.59	596.99	-414.73	402110.19	737867.30	0.00	
11200.00	90.25	357.34	10524.35	715.59	696.88	-419.36	402210.08	737862.67	0.00	
11300.00	90.25	357.34	10523.92	815.59	796.77	-424.00	402309.97	737858.03	0.00	
11400.00	90.25	357.34	10523.49	915.59	896.66	-428.63	402409.86	737853.40	0.00	
11500.00	90.25	357.34	10523.06	1015.59	996.55	-433.27	402509.75	737848.76	0.00	
11600.00	90.25	357.34	10522.63	1115.59	1096.45	-437.91	402609.65	737844.12	0.00	
11700.00	90.25	357.34	10522.20	1215.59	1196.34	-442.54	402709.54	737839.49	0.00	
11800.00	90.25	357.34	10521.77	1315.58	1296.23	-447.18	402809.43	737834.85	0.00	
11900.00	90.25	357.34	10521.34	1415.58	1396.12	-451.81	402909.32	737830.22	0.00	
12000.00	90.25	357.34	10520.91	1515.58	1496.01	-456.45	403009.21	737825.58	0.00	
12100.00	90.25	357.34	10520.48	1615.58	1595.90	-461.08	403109.10	737820.95	0.00	
12200.00	90.25	357.34	10520.05	1715.58	1695.79	-465.72	403208.99	737816.31	0.00	
12300.00	90.25	357.34	10519.63	1815.58	1795.69	-470.35	403308.89	737811.68	0.00	
12400.00	90.25	357.34	10519.20	1915.58	1895.58	-474.99	403408.78	737807.04	0.00	
12500.00	90.25	357.34	10518.77	2015.58	1995.47	-479.62	403508.67	737802.41	0.00	
12600.00	90.25	357.34	10518.34	2115.58	2095.36	-484.26	403608.56	737797.77	0.00	
12700.00	90.25	357.34	10517.91	2215.58	2195.25	-488.89	403708.45	737793.14	0.00	
12800.00	90.25	357.34	10517.48	2315.58	2295.14	-493.53	403808.34	737788.50	0.00	
12900.00	90.25	357.34	10517.05	2415.57	2395.04	-498.16	403908.24	737783.87	0.00	
13000.00	90.25	357.34	10516.62	2515.57	2494.93	-502.80	404008.13	737779.23	0.00	
13100.00	90.25	357.34	10516.19	2615.57	2594.82	-507.43	404108.02	737774.60	0.00	
13200.00	90.25	357.34	10515.76	2715.57	2694.71	-512.07	404207.91	737769.96	0.00	
13300.00	90.25	357.34	10515.33	2815.57	2794.60	-516.70	404307.80	737765.33	0.00	
13400.00	90.25	357.34	10514.90	2915.57	2894.49	-521.34	404407.69	737760.69	0.00	
13500.00	90.25	357.34	10514.47	3015.57	2994.39	-525.97	404507.59	737756.06	0.00	
13600.00	90.25	357.34	10514.05	3115.57	3094.28	-530.61	404607.48	737751.42	0.00	
13700.00	90.25	357.34	10513.62	3215.57	3194.17	-535.25	404707.37	737746.78	0.00	
13800.00	90.25	357.34	10513.19	3315.57	3294.06	-539.88	404807.26	737742.15	0.00	
13900.00	90.25	357.34	10512.76	3415.57	3393.95	-544.52	404907.15	737737.51	0.00	
14000.00	90.25	357.34	10512.33	3515.56	3493.84	-549.15	405007.04	737732.88	0.00	
14100.00	90.25	357.34	10511.90	3615.56	3593.74	-553.79	405106.94	737728.24	0.00	
14200.00	90.25	357.34	10511.47	3715.56	3693.63	-558.42	405206.83	737723.61	0.00	
14300.00	90.25	357.34	10511.04	3815.56	3793.52	-563.06	405306.72	737718.97	0.00	
14400.00	90.25	357.34	10510.61	3915.56	3893.41	-567.69	405406.61	737714.34	0.00	
14500.00	90.25	357.34	10510.18	4015.56	3993.30	-572.33	405506.50	737709.70	0.00	
14600.00	90.25	357.34	10509.75	4115.56	4093.19	-576.96	405606.39	737705.07	0.00	
14700.00	90.25	357.34	10509.32	4215.56	4193.08	-581.60	405706.28	737700.43	0.00	
14800.00	90.25	357.34	10508.89	4315.56	4292.98	-586.23	405806.18	737695.80	0.00	
14900.00	90.25	357.34	10508.46	4415.56	4392.87	-590.87	405906.07	737691.16	0.00	
15000.00	90.25	357.34	10508.04	4515.56	4492.76	-595.50	406005.96	737686.53	0.00	
15100.00	90.25	357.34	10507.61	4615.55	4592.65	-600.14	406105.85	737681.89	0.00	
15200.00	90.25	357.34	10507.18	4715.55	4692.54	-604.77	406205.74	737677.26	0.00	
15300.00	90.25	357.34	10506.75	4815.55	4792.43	-609.41	406305.63	737672.62	0.00	
15400.00	90.25	357.34	10506.32	4915.55	4892.33	-614.04	406405.53	737667.99	0.00	

5D Plan: Report

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

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
15500.00	90.25	357.34	10505.89	5015.55	4992.22	-618.68	406505.42	737663.35	0.00	
15600.00	90.25	357.34	10505.46	5115.55	5092.11	-623.31	406605.31	737658.72	0.00	
15700.00	90.25	357.34	10505.03	5215.55	5192.00	-627.95	406705.20	737654.08	0.00	
15800.00	90.25	357.34	10504.60	5315.55	5291.89	-632.59	406805.09	737649.44	0.00	
15900.00	90.25	357.34	10504.17	5415.55	5391.78	-637.22	406904.98	737644.81	0.00	
16000.00	90.25	357.34	10503.74	5515.55	5491.68	-641.86	407004.88	737640.17	0.00	
16100.00	90.25	357.34	10503.31	5615.55	5591.57	-646.49	407104.77	737635.54	0.00	
16200.00	90.25	357.34	10502.88	5715.54	5691.46	-651.13	407204.66	737630.90	0.00	
16300.00	90.25	357.34	10502.46	5815.54	5791.35	-655.76	407304.55	737626.27	0.00	
16400.00	90.25	357.34	10502.03	5915.54	5891.24	-660.40	407404.44	737621.63	0.00	
16500.00	90.25	357.34	10501.60	6015.54	5991.13	-665.03	407504.33	737617.00	0.00	
16600.00	90.25	357.34	10501.17	6115.54	6091.02	-669.67	407604.22	737612.36	0.00	
16700.00	90.25	357.34	10500.74	6215.54	6190.92	-674.30	407704.12	737607.73	0.00	
16800.00	90.25	357.34	10500.31	6315.54	6290.81	-678.94	407804.01	737603.09	0.00	
16900.00	90.25	357.34	10499.88	6415.54	6390.70	-683.57	407903.90	737598.46	0.00	
17000.00	90.25	357.34	10499.45	6515.54	6490.59	-688.21	408003.79	737593.82	0.00	
17100.00	90.25	357.34	10499.02	6615.54	6590.48	-692.84	408103.68	737589.19	0.00	
17200.00	90.25	357.34	10498.59	6715.54	6690.37	-697.48	408203.57	737584.55	0.00	
17300.00	90.25	357.34	10498.16	6815.53	6790.27	-702.11	408303.47	737579.92	0.00	
17400.00	90.25	357.34	10497.73	6915.53	6890.16	-706.75	408403.36	737575.28	0.00	
17500.00	90.25	357.34	10497.30	7015.53	6990.05	-711.38	408503.25	737570.65	0.00	
17600.00	90.25	357.34	10496.88	7115.53	7089.94	-716.02	408603.14	737566.01	0.00	
17700.00	90.25	357.34	10496.45	7215.53	7189.83	-720.65	408703.03	737561.38	0.00	
17800.00	90.25	357.34	10496.02	7315.53	7289.72	-725.29	408802.92	737556.74	0.00	
17803.88	90.25	357.34	10496.00	7319.41	7293.60	-725.47	408806.80	737556.56	0.00	PBHL 2H