

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

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

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

FEB 27 2018

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30.015.44752		² Pool Code 98220	RECEIVED PURPLE SAGE; WOLFCAMP
⁴ Property Code 320826	³ Property Name SPUD MUFFIN 31-30 COM		⁶ Well Number 733H
⁷ OGRID No. 6137	⁵ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.		⁹ Elevation 2959.3

¹⁰ Surface Location

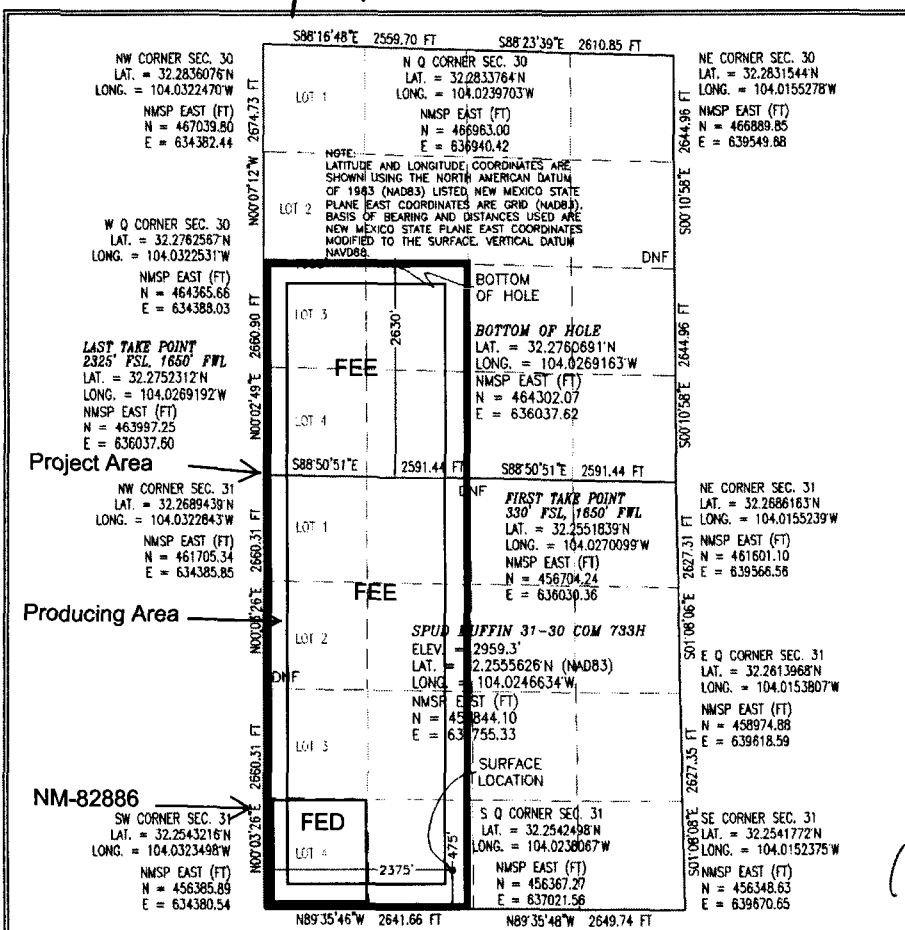
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	31	23 S	29 E		475	SOUTH	2375	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	30	23 S	29 E		2630	SOUTH	1650	WEST	EDDY

¹² Dedicated Acres 480	¹³ Joint or Infill 415101	¹⁴ Consolidation Code	¹⁵ Order No. R-14262
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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.



¹⁷ 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 entered by the division.

Erin Workman 02/23/18
Signature Date

Erin Workman

Printed Name

Erin.workman@dv.com

E-mail Address

¹⁸ 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.

FEBRUARY 7, 2018

Date of Survey

Filimon F. Jaramillo
Signature and Seal of Professional Surveyor

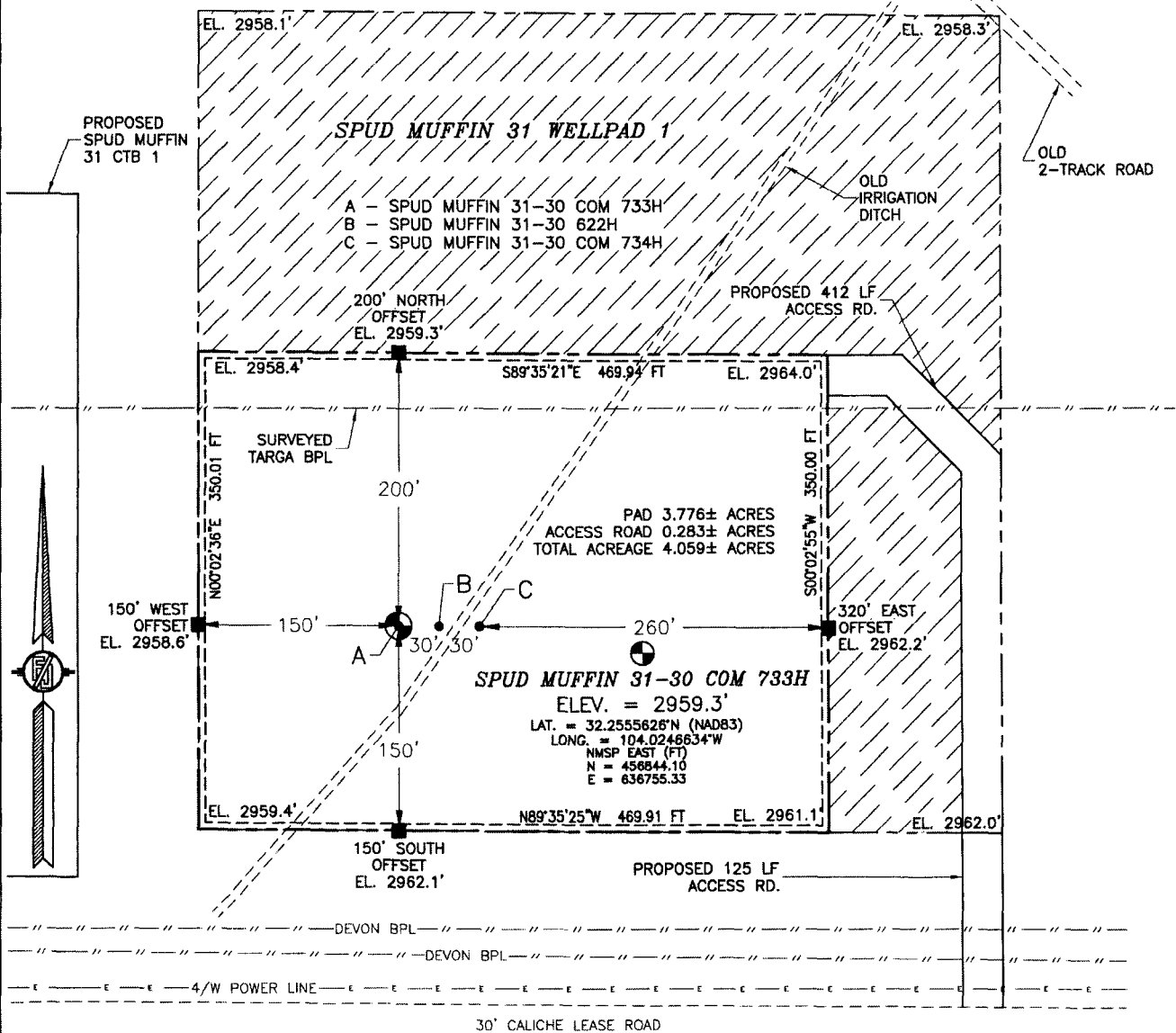
Certificate Number: FILIMON F. JARAMILLO, PLS 12797
SURVEY NO. 5947A

NSP Required

KUP

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY 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. VERTICAL DATUM NAVD88.



0 12 60 120 240

SCALE 1" = 120'

DIRECTIONS TO LOCATION

BEGINNING AT THE JUNCTION OF US 285 AND CR 720, GO EAST ON CR 720 0.8 OF A MILE TO HARROUN ROAD ON THE LEFT. GO NORTH-NORTHEAST ON HARROUN ROAD FOR 3.1 MILES TO A FORK IN THE ROAD. CONTINUE NORTH, LEFT ON SAID HARROUN ROAD 230' TO A LEASE ROAD TO THE LEFT, GO NORTH 0.5 OF A MILE, GO EAST 1706' THEN NORTH-NORTHWEST-WEST 537' TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

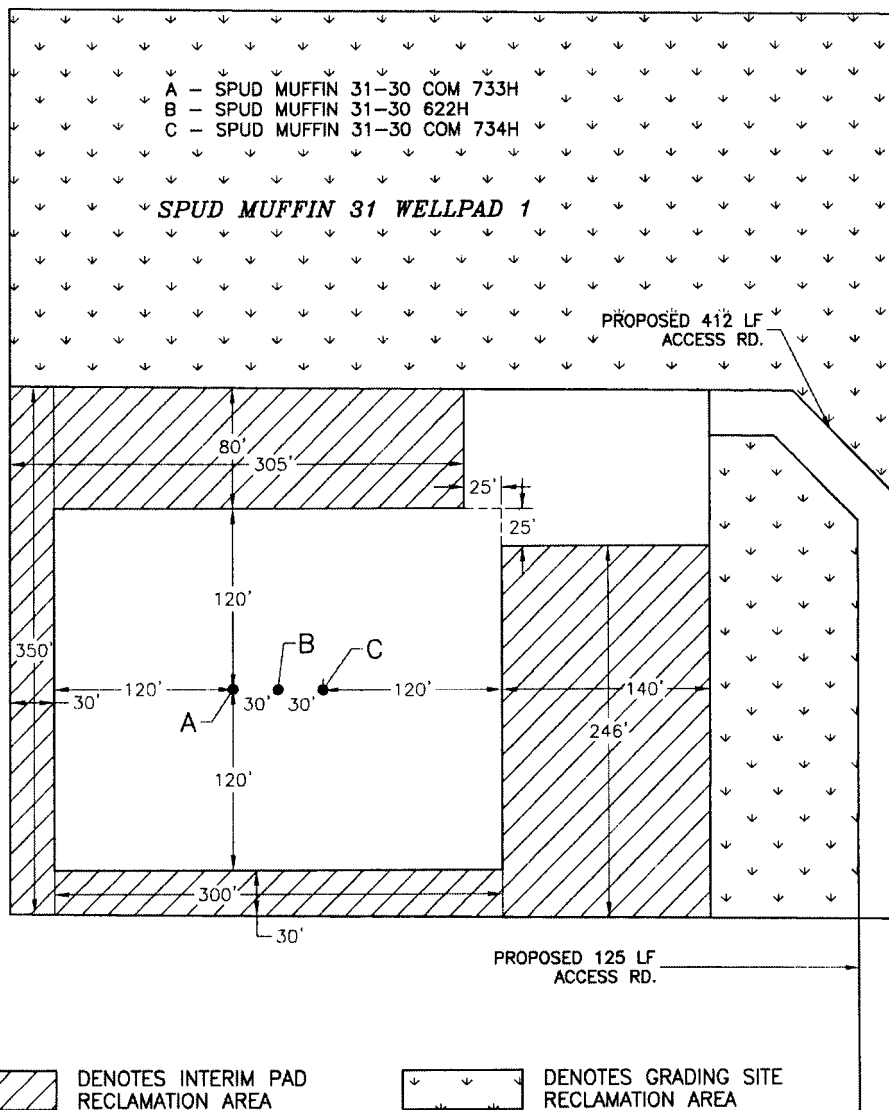
DEVON ENERGY PRODUCTION COMPANY, L.P.
SPUD MUFFIN 31-30 COM 733H
LOCATED 475 FT. FROM THE SOUTH LINE
AND 2375 FT. FROM THE WEST LINE OF
SECTION 31, TOWNSHIP 23 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JANUARY 18, 2018

SURVEY NO. 5947

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

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN



012 60 120 240
SCALE 1" = 120'

1.742± ACRES INTERIM PAD RECLAMATION AREA
4.203± ACRES GRADING SITE RECLAMATION AREA
2.318± ACRES NON-RECLAIMED AREA
8.263± ACRES SPUD MUFFIN 31 WELLPAD 1

DEVON ENERGY PRODUCTION COMPANY, L.P.
SPUD MUFFIN 31-30 COM 733H
LOCATED 475 FT. FROM THE SOUTH LINE
AND 2375 FT. FROM THE WEST LINE OF
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EDDY COUNTY, STATE OF NEW MEXICO

JANUARY 18, 2018

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

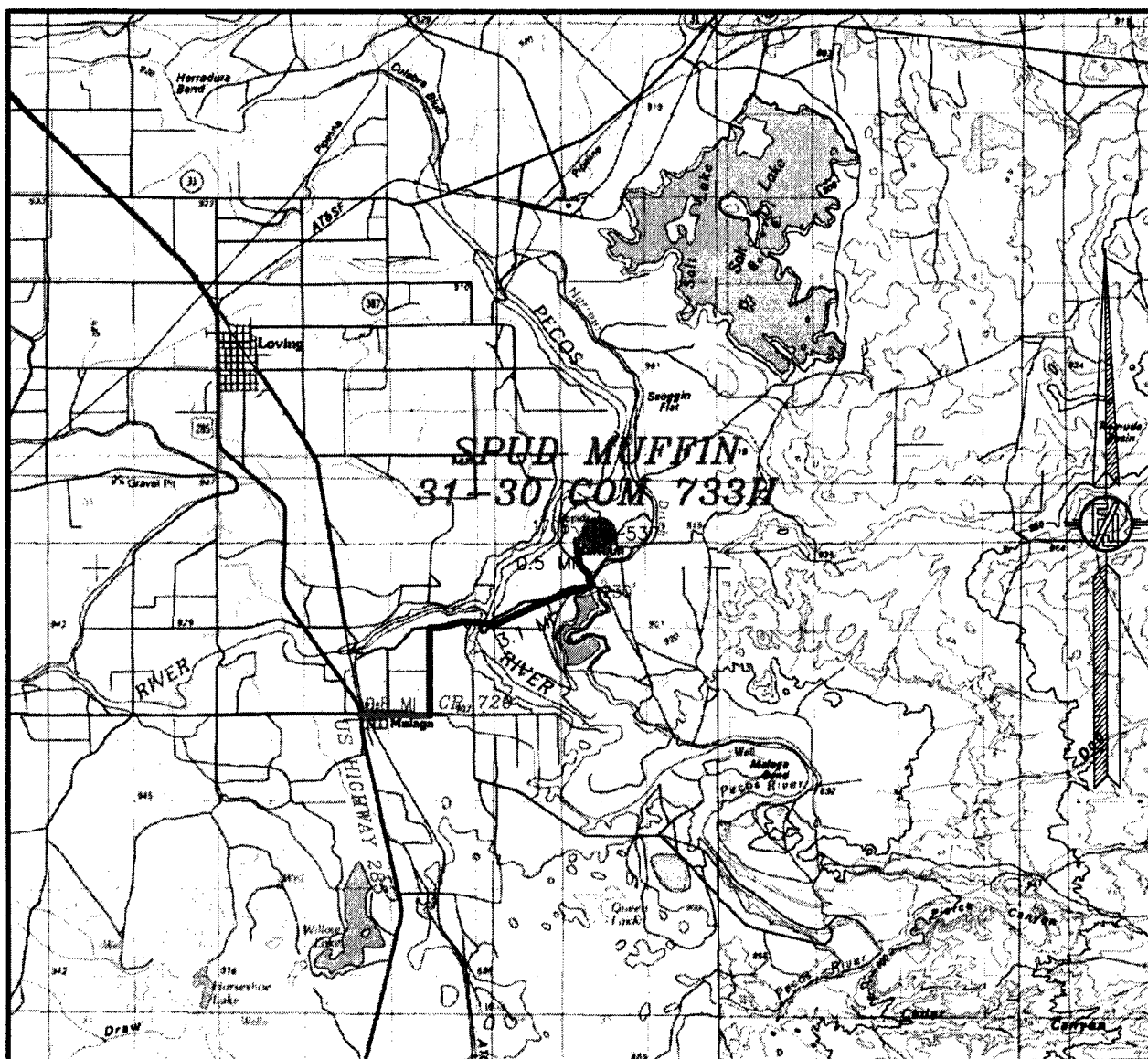
[illegible]

NOT TO SCALE

JANUARY 18, 2018

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

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

SPUD MUFFIN 31-30 COM 733H

LOCATED 475 FT. FROM THE SOUTH LINE
AND 2375 FT. FROM THE WEST LINE OF

SECTION 31, TOWNSHIP 23 SOUTH,
RANGE 29 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO

DIRECTIONS TO LOCATION

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TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

JANUARY 18, 2018

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MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

*SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO*



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOVEMBER 2017

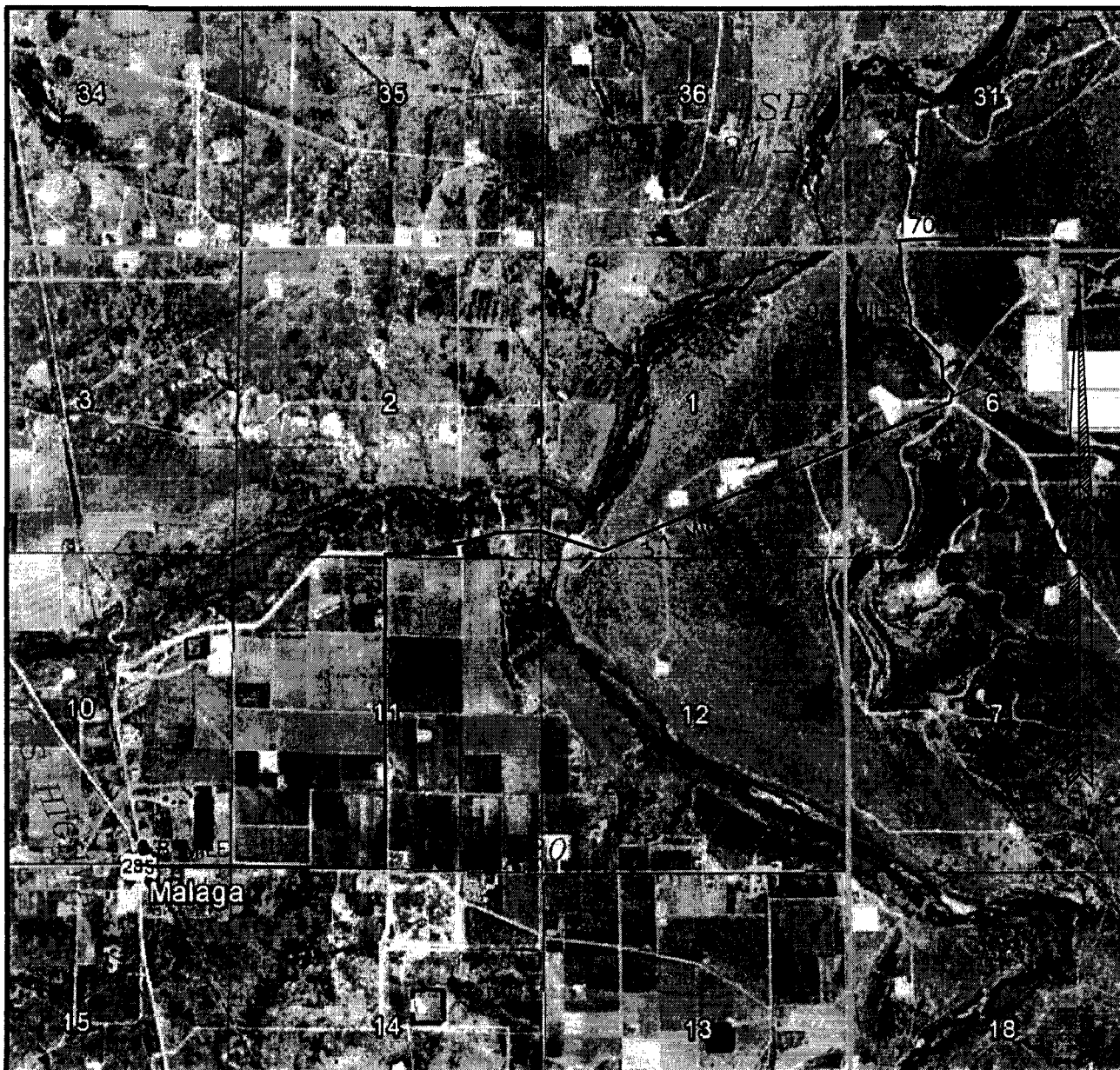
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SECTION 31, TOWNSHIP 23 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO*

JANUARY 18, 2018

SURVEY NO. 5947

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

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 ACCESS AERIAL ROUTE MAP



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 NOVEMBER 2017

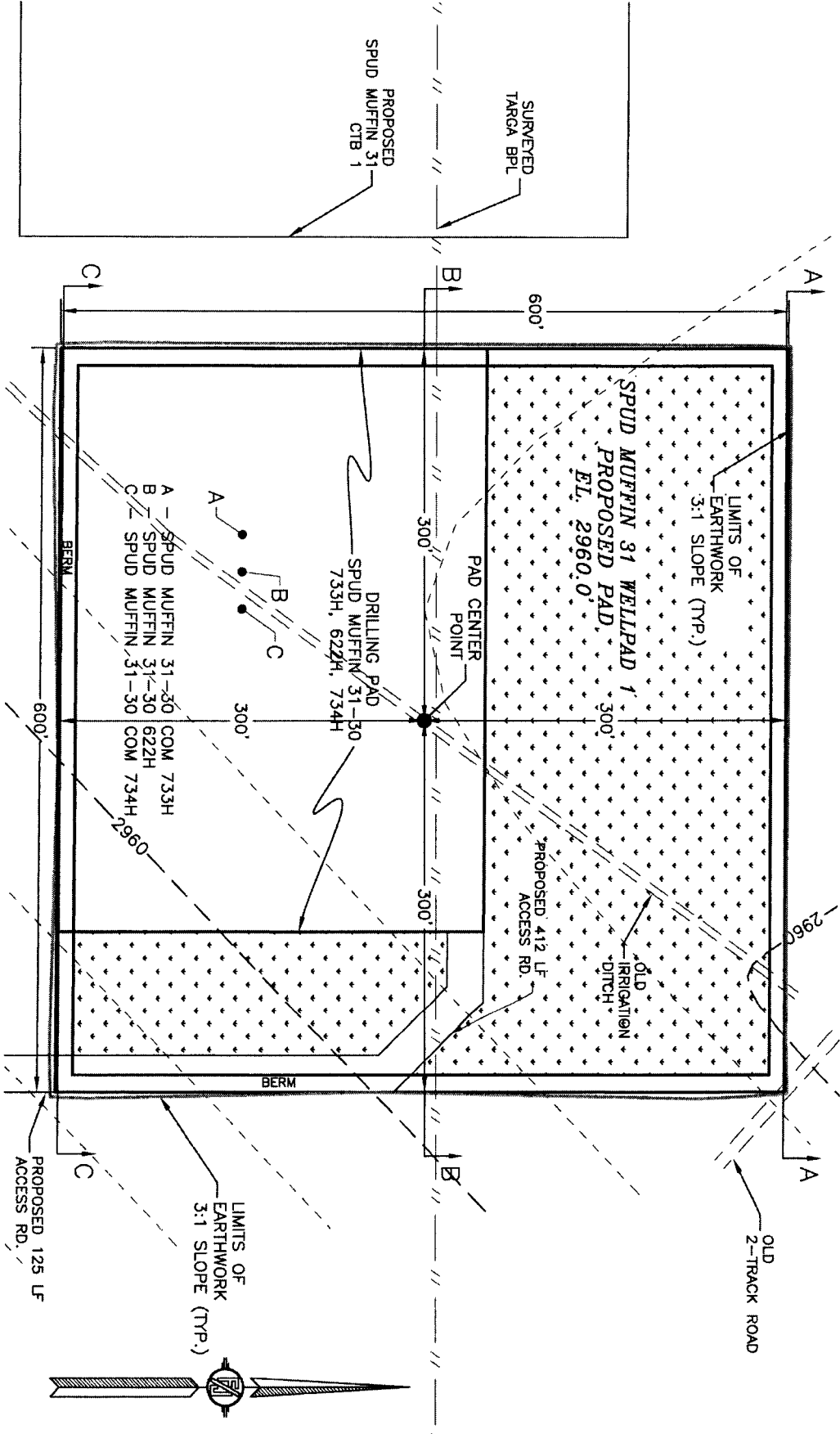
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 SPUD MUFFIN 31-30 COM 733H
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 SECTION 31, TOWNSHIP 23 SOUTH,
 RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

JANUARY 18, 2018

SURVEY NO. 5947

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

PLAN VIEW



DEVON ENERGY PRODUCTION COMPANY, L.P.
 GRADING PLAN AND CROSS SECTIONS
SPUD MUFFIN 31-30 COM 733H
 SECTION 31, TOWNSHIP 23 SOUTH,
 RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

JANUARY 18, 2018

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

CUT	FILL	NET
666 CU. YD	12477 CU. YD	11810 CU. YD (FILL)

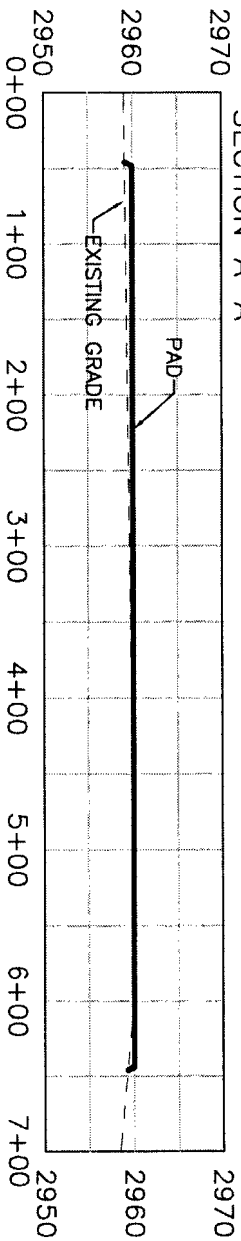
EARTHWORK QUANTITIES ARE ESTIMATED



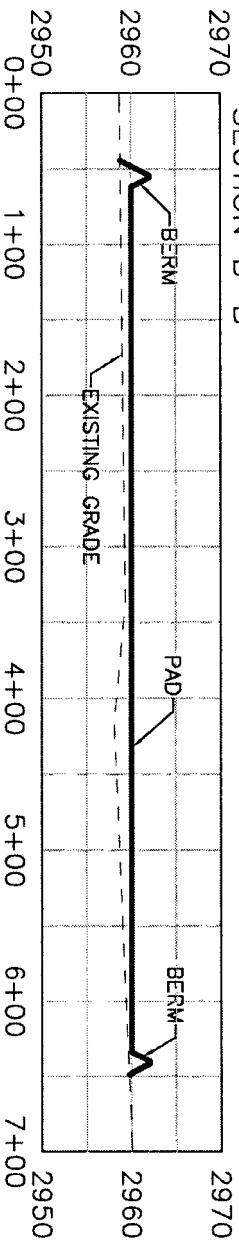
SHEET 1-2
 SURVEY NO. 5947

CROSS SECTIONS

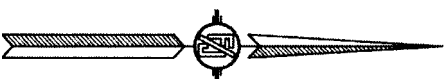
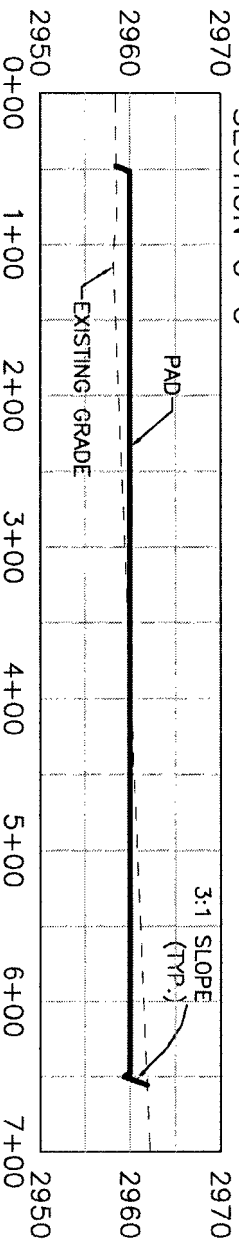
SECTION A-A



SECTION B-B



SECTION C-C



DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
SPUD KUFFIN 31-30 COM 733H
SECTION 31, TOWNSHIP 23 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JANUARY 18, 2018

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

CUT	FILL	NET
666 CU. YD.	12477 CU. YD.	11810 CU. YD. (FILL)

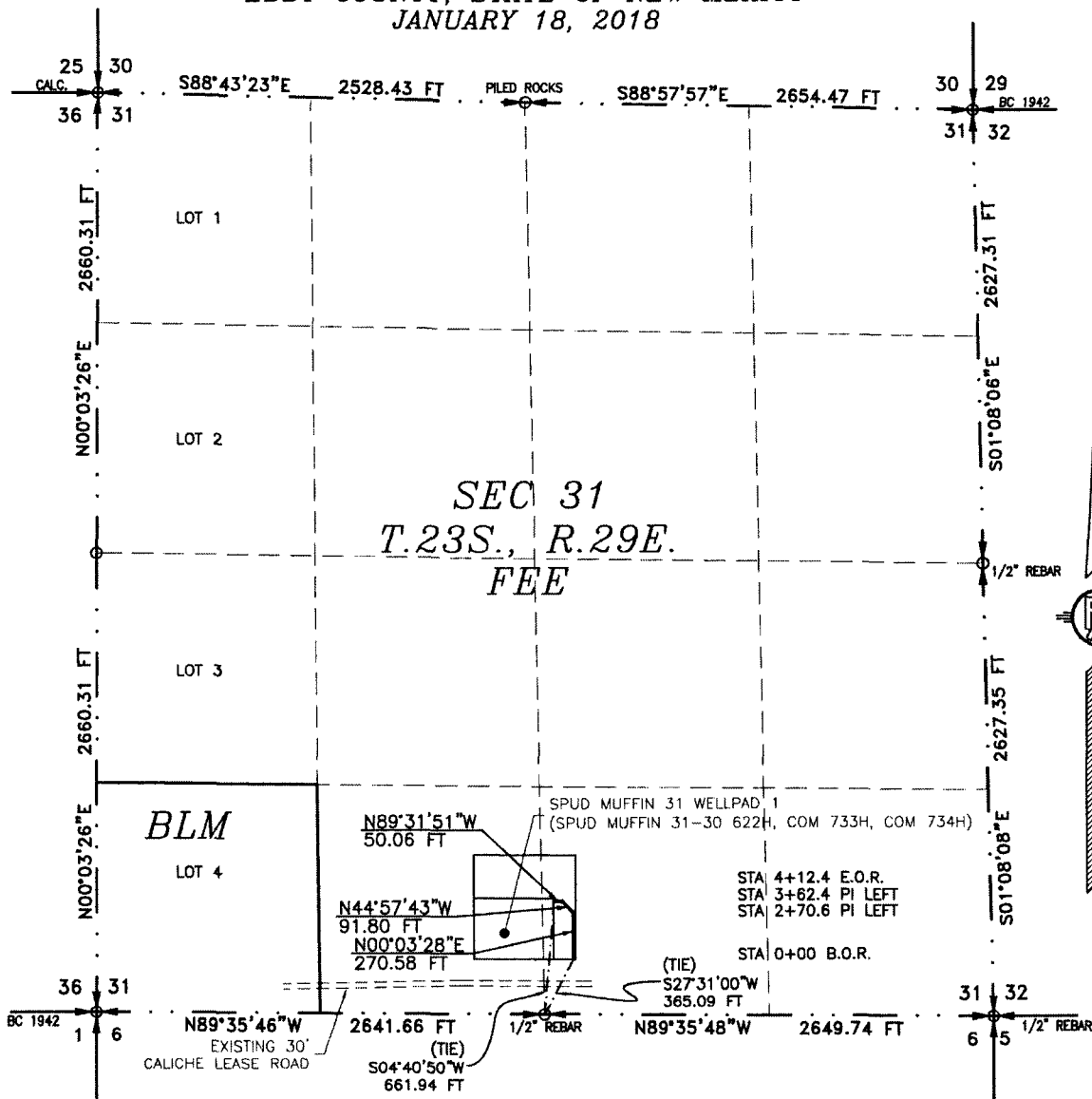
EARTHWORK QUANTITIES ARE ESTIMATED

SHEET 2-2
SURVEY NO. 5947

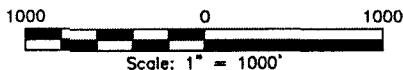
ACCESS ROAD PLAT

ACCESS ROAD TO THE SPUD MUFFIN 31 WELLPAD 1
(SPUD MUFFIN 31-30 622H, COM 733H, COM 734H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JANUARY 18, 2018



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 23 DAY OF JANUARY 2018

[Signature of Filmon F. Jaramillo]
FILMON F. JARAMILLO, PLS. 12797

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

SURVEY NO. 5947

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

ACCESS ROAD PLAT

ACCESS ROAD TO THE SPUD MUFFIN 31 WELLPAD 1
(SPUD MUFFIN 31-30 622H, COM 733H, COM 734H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JANUARY 18, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING FEE LAND IN SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SW/4 SE/4 OF SAID SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M., WHENCE THE SOUTH QUARTER CORNER OF SAID SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS S27°31'00"W, A DISTANCE OF 365.09 FEET;

THENCE N00°03'28"E A DISTANCE OF 270.58 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N44°57'43"W A DISTANCE OF 91.80 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N89°31'51"W A DISTANCE OF 50.06 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTH QUARTER CORNER OF SAID SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS S04°40'50"W, A DISTANCE OF 661.94 FEET;

SAID STRIP OF LAND BEING 412.44 FEET OR 25.00 RODS IN LENGTH, CONTAINING 0.284 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SE/4 412.44 L.F. 25.00 RODS 0.284 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 23 DAY OF JANUARY 2018


FILMON F. JARAMILLO HAS 12797

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

SURVEY NO. 5947

GENERAL NOTES

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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 CARLSBAD, NEW MEXICO
(575) 234-3341

Devon Energy Prod. Co., L.P./Spud Muffin 31-30 733H

Com

1. Geologic Formations

TVD of target	10738	Pilot hole depth	
MD at TD:	18390	Deepest expected fresh water:	400'

Basin

Rustler			
Top of Salt	22		
Delaware	2774		
1st BSPG Lime	6470		
1st BSPG Sand	7489		
2nd BSPG Lime	7744		
2nd BSPG Sand	8271		
3rd BSPG Lime	8716		
3rd BSPG Sand	9401		
Wolfcamp	9760		
Wolfcamp 300 Upper Top	10739		
Wolfcamp 300 Upper Base	10784		
Wolfcamp 400	10905		

NM OIL CONSERVATION
ARTESIA DISTRICT

FEB 27 2018

RECEIVED

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

Com

2. Casing Program

Casing Size	Weight	Length	OD	ID	Grade	Type	Weight	Length	Weight
17.5"	0	400'	13.375"	48	H-40	STC	1.125	1.25	1.6
12.25"	0	2,970'	9.625"	40	J-55	LTC	1.19	1.42	3.98
8.75"	0	10,700'	7.625"	29.7	P110	Flushmax III	1.125	1.25	1.6
6.75"	0	18,390'	5.5"	20	P110	SF/Flush	1.125	1.25	1.6

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.

A variance is requested to wave the centralizer requirement for the 7-5/8" flush casing in the 8-3/4" hole and the 5-1/2" SF/Flush casing in the 6-3/4" hole.

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?	

Com

2. Cementing Program

13-3/8" Surface	315	14.8	6.34	1.34	Tail: Class C Cement + 1% Calcium Chloride
9-5/8 Int I	545	12.9	9.81	1.85	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	155	14.8	6.32	1.33	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
7-5/8" Int II	323	9	13.5	3.27	Lead: Tuned Light® Cement
	163	14.5	5.31	1.2	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
7-5/8" Intermediate II Squeeze	640	14.8	6.32	1.32	Class C Cement + 0.125 lbs/sack Poly-E-Flake
	323	9	13.5	3.27	Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake
	163	13.2	5.31	1.6	(50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
5-1/2" Prod	675	14.8	6.32	1.33	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake

13-3/8" Surface	0'	50%
9-5/8" Intermediate I	0'	30%
7-5/8" Intermediate II	0'	30%
5-1/2" Production Casing	10500'	25%

Com

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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Pressure Control Equipment					
12-1/4"	13-5/8"	5M	Annular	X	50% of rated working pressure
			Pipe Ram	X	5M
			Blind Ram	X	
			Pipe Ram	X	
			Other*		
8-3/4"	13-5/8"	5M	Annular	X	50% of rated working pressure
			Pipe Ram	X	5M
			Blind Ram	X	
			Pipe Ram	X	
			Other*		
6-3/4"	13-5/8"	5M	Annular	X	50% of rated working pressure
			Pipe Ram	X	5M
			Blind Ram	X	
			Pipe Ram	X	
			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.

Com

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.
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 is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 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 will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 5,000 psi high pressure test. The 5,000 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 I casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 5M will already be installed on the wellhead.

Com

After running the 7-5/8' intermediate II casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 5M 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 5,000 psi WP.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns

5. Mud Program

Depth (ft)	Depth (ft)	Mud Type	Weight (ppg)	Viscosity (cP)	Temperature (°F)
0	400'	FW Gel	8.4-8.8	28-34	N/C
400'	2,970'	Saturated Brine	9.8 -10.0	29-34	N/C
2,970'	10,700'	OBM/Cut Brine	8.6-9.8	34-65	N/C - 6
10,700'	18,390'	OBM	9.5-12.0	45-65	N/C - 6

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

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

Log Type	Log Description	Log Location
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Int shoe to TD
	PEX	

Com

7. Drilling Conditions

BH Pressure at deepest TVD	6782 psi
Abnormal Temperature	No

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

Hydrogen Sulfide (H ₂ S) monitors will be installed prior to drilling out the surface shoe. If H ₂ S 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	H ₂ S is present
Y	H ₂ S Plan attached

8. Other facets of operation

Is this a walking operation? Yes

1. In the event the spudder rig is unable to drill the surface holes the 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 with either OBM or cut brine 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? Yes

1. Spudder rig will move in and drill surface hole.
 - a. Rig will utilize fresh water based mud to drill 17½" 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 13-3/8" 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.

Devon Energy Prod. Co., L.P./Spud Muffin 31-30 733H

Cm

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.

Attachments

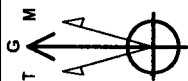
 X Directional Plan

 Other, describe

Devon Energy

Project: Eddy County, NM (NAD-83)
 Site: Spud Muffin 31-30
 Well: Spud Muffin 31-30 733H
 Wellbore: OH
 Design: Plan #1

2950.3' GE + 25' KB @ 2984.30usft
 Ground Level: 2959.30



Azimuths to Grid North
 True North: -0.17°
 Magnetic North: 7.03°
 Magnetic Field
 Strength: 48047.0snT
 Dip Angle: 60.05°
 Date: 2/12/2018
 Model: HDGM

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



30-015-447503

NM OIL CONSERVATION
 ARTESIA DISTRICT

FEB 27 2018

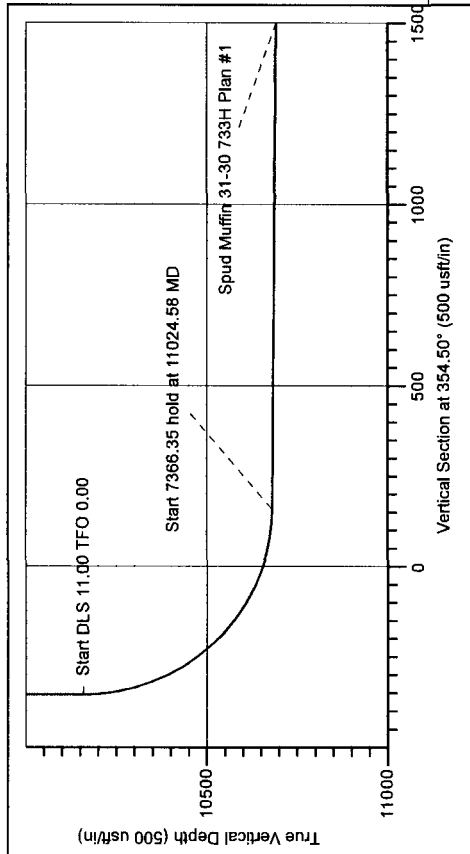
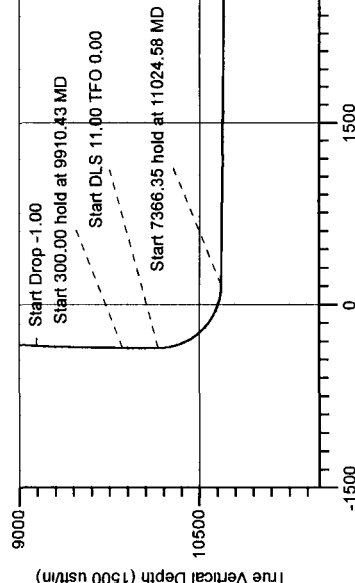
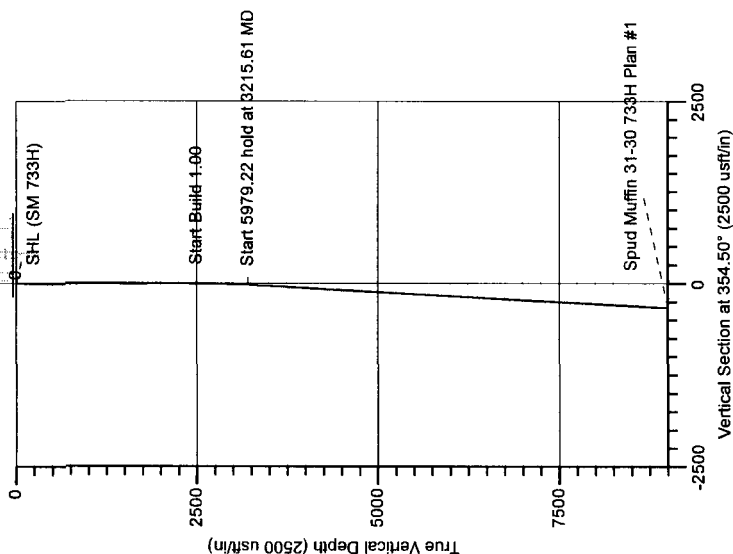
RECEIVED

SECTION DETAILS

MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSeet	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	
3215.61	7.16	239.37	3213.75	-22.74	-38.40	1.00	239.37	-18.96	
9194.83	0.00	0.00	9146.39	-402.26	-679.31	0.00	0.00	-335.34	
9910.43	0.00	0.00	9860.14	-425.00	-717.71	1.00	180.00	-354.30	
10210.43	0.00	0.00	10160.14	-425.00	-717.71	0.00	0.00	-354.30	
11024.58	89.56	0.00	10681.00	91.84	-717.71	11.00	0.00	160.17	
18390.93	89.56	0.00	10738.00	7457.97	-717.71	0.00	0.00	7492.42	

DESIGN TARGET DETAILS

Name	SHL (SM 733H)	PBHL (SM 733H)	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
SHL (SM 733H)	10738.00		0.00	0.00	0.00	456844.10	636755.33	32° 15' 20.0254 N	104° 1' 28.7884 W
PBHL (SM 733H)			0.00	0.00	0.00	464302.07	636037.62	32° 16' 33.8488 N	104° 1' 36.8986 W
				7457.97	-717.71				

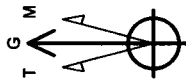


LEAM DRILLING SYSTEMS LLC
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax: 936/756-7595

Plan: Plan #1 (Spud Muffin 31-30 733H/OH)
 Created By: Dustin Aut
 Date: 17/14, February 12 2018
 Approved: _____
 Date: _____

Devon Energy

Project: Eddy County, NM (NAD-83)
 Site: Spud Muffin 31-30
 Well: Spud Muffin 31-30 733H
 Wellbore: OH
 Design: Plan #1



Azimuths to Grid North
 True North: -0.17°
 Magnetic North: 7.03°
 Magnetic Field
 Strength: 48047.0snT
 Dip Angle: 60.05°
 Date: 2/12/2018
 Model: HDGM

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

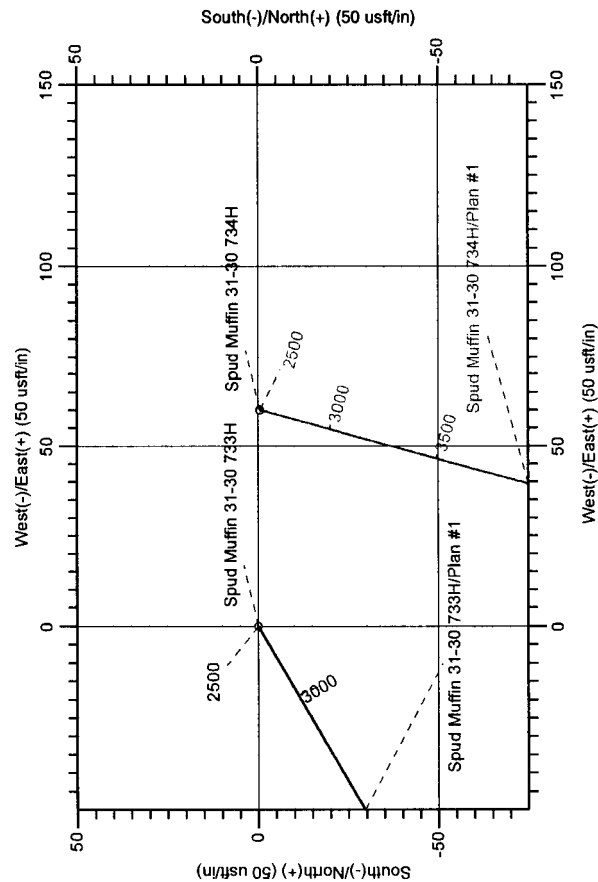
devon

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (SM 733H)	10738.00	7457.97	-717.71	464302.07	636037.62	32° 16' 33.8488 N	104° 1' 36.8986 W
SHL (SM 733H)	0.00	0.00	0.00	458844.10	636755.33	32° 15' 20.0254 N	104° 1' 28.7884 W

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	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	
3215.61	7.16	239.37	3215.75	-22.74	-38.40	1.00	239.37	-18.96	
9194.83	7.16	239.37	9146.39	-402.26	-679.31	0.00	0.00	-335.34	
9910.43	0.00	0.00	9860.14	-425.00	-717.71	1.00	180.00	-354.30	
10210.43	0.00	0.00	10160.14	-425.00	-717.71	0.00	0.00	-354.30	
11024.58	89.56	0.00	10681.00	91.84	-717.71	11.00	0.00	160.17	
18390.93	89.56	0.00	10738.00	7457.97	-717.71	0.00	0.00	7492.42	



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



Plan: Plan #1 (Spud Muffin 31-30 733H/OH)
 Created By: Dustin Ault
 Date: 17:17, February 12 2018
 Approved: _____
 Date: _____

Devon Energy

Eddy County, NM (NAD-83)

Spud Muffin 31-30

Spud Muffin 31-30 733H

OH

Plan: Plan #1

Standard Planning Report

12 February, 2018

LEAM Drilling Services

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Spud Muffin 31-30 733H
Company:	Devon Energy	TVD Reference:	2959.3' GE + 25' KB @ 2984.30usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	2959.3' GE + 25' KB @ 2984.30usft
Site:	Spud Muffin 31-30	North Reference:	Grid
Well:	Spud Muffin 31-30 733H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project:	Eddy 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:	Spud Muffin 31-30				
Site Position:		Northing:	456,837.83 usft	Latitude:	32° 15' 19.9379
From:	Map	Easting:	637,646.02 usft	Longitude:	104° 1' 18.4160 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.17

Well:		Spud Muffin 31-30 733H				
Well Position	+N-S	6.27 usft	Northing:	456,844.10 usft	Latitude:	32° 15' 20.0254
	+E-W	-890.69 usft	Easting:	636,755.33 usft	Longitude:	104° 1' 28.7884 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	2,959.30 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	2/12/2018	7.20	60.05	48,047

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	354.50

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (/1000usft)	Build Rate (/1000usft)	Turn Rate (/1000usft)	ATO (°)	Target
0.00	0.00	0.00	0.00	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	
3,215.61	7.16	239.37	3,213.75	-22.74	-38.40	1.00	1.00	0.00	239.37	
9,194.83	7.16	239.37	9,146.39	-402.26	-679.31	0.00	0.00	0.00	0.00	
9,910.43	0.00	0.00	9,860.14	-425.00	-717.71	1.00	-1.00	0.00	180.00	
10,210.43	0.00	0.00	10,160.14	-425.00	-717.71	0.00	0.00	0.00	0.00	
11,024.58	89.56	0.00	10,681.00	91.84	-717.71	11.00	11.00	0.00	0.00	
18,390.94	89.56	0.00	10,738.00	7,457.97	-717.71	0.00	0.00	0.00	0.00	PBHL (SM 733H)

LEAM Drilling Services

Planning Report

Database:	EDM 5000.1 Multi User Db	Well:	Well Spud Muffin 31-30 733H
Company:	Devon Energy	MD Reference:	2959.3' GE + 25' KB @ 2984.30usft
Project:	Eddy County, NM (NAD-83)	North Reference:	2959.3' GE + 25' KB @ 2984.30usft
Site:	Spud Muffin 31-30	Survey Calculation Method:	Grid
Well:	Spud Muffin 31-30 733H		Minimum Curvature
Wellbore:	OH		
Diagram:	Plan #1		

Planned Survey									
Horizontal 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 (SM 733H)									
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	1.00	239.37	2,599.99	-0.44	-0.75	-0.37	1.00	1.00	0.00
2,700.00	2.00	239.37	2,699.96	-1.78	-3.00	-1.48	1.00	1.00	0.00
2,800.00	3.00	239.37	2,799.86	-4.00	-6.76	-3.34	1.00	1.00	0.00
2,900.00	4.00	239.37	2,899.68	-7.11	-12.01	-5.93	1.00	1.00	0.00
3,000.00	5.00	239.37	2,999.37	-11.11	-18.76	-9.26	1.00	1.00	0.00
3,100.00	6.00	239.37	3,098.90	-15.99	-27.01	-13.33	1.00	1.00	0.00
3,200.00	7.00	239.37	3,198.26	-21.76	-36.75	-18.14	1.00	1.00	0.00
3,215.61	7.16	239.37	3,213.75	-22.74	-38.40	-18.96	1.00	1.00	0.00
3,300.00	7.16	239.37	3,297.48	-28.10	-47.45	-23.42	0.00	0.00	0.00
3,400.00	7.16	239.37	3,396.70	-34.44	-58.17	-28.71	0.00	0.00	0.00
3,500.00	7.16	239.37	3,495.93	-40.79	-68.89	-34.01	0.00	0.00	0.00
3,600.00	7.16	239.37	3,595.15	-47.14	-79.61	-39.30	0.00	0.00	0.00
3,700.00	7.16	239.37	3,694.37	-53.49	-90.32	-44.59	0.00	0.00	0.00
3,800.00	7.16	239.37	3,793.59	-59.83	-101.04	-49.88	0.00	0.00	0.00
3,900.00	7.16	239.37	3,892.81	-66.18	-111.76	-55.17	0.00	0.00	0.00
4,000.00	7.16	239.37	3,992.03	-72.53	-122.48	-60.46	0.00	0.00	0.00
4,100.00	7.16	239.37	4,091.25	-78.88	-133.20	-65.75	0.00	0.00	0.00
4,200.00	7.16	239.37	4,190.47	-85.22	-143.92	-71.04	0.00	0.00	0.00
4,300.00	7.16	239.37	4,289.69	-91.57	-154.64	-76.34	0.00	0.00	0.00
4,400.00	7.16	239.37	4,388.92	-97.92	-165.36	-81.63	0.00	0.00	0.00
4,500.00	7.16	239.37	4,488.14	-104.26	-176.07	-86.92	0.00	0.00	0.00
4,600.00	7.16	239.37	4,587.36	-110.61	-186.79	-92.21	0.00	0.00	0.00
4,700.00	7.16	239.37	4,686.58	-116.96	-197.51	-97.50	0.00	0.00	0.00
4,800.00	7.16	239.37	4,785.80	-123.31	-208.23	-102.79	0.00	0.00	0.00
4,900.00	7.16	239.37	4,885.02	-129.65	-218.95	-108.08	0.00	0.00	0.00
5,000.00	7.16	239.37	4,984.24	-136.00	-229.67	-113.38	0.00	0.00	0.00
5,100.00	7.16	239.37	5,083.46	-142.35	-240.39	-118.67	0.00	0.00	0.00

LEAM Drilling Services

Planning Report

Database:	EDM 5000.1 Multi User Db	Location:	Well Spud Muffin 31-30 733H
Company:	Devon Energy	Vertical Method:	2959.3' GE + 25' KB @ 2984.30usft
Project:	Eddy County, NM (NAD-83)	MD Method:	2959.3' GE + 25' KB @ 2984.30usft
Site:	Spud Muffin 31-30	North Arrow:	Grid
Well:	Spud Muffin 31-30 733H	Survey Calculations Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	WGS (usft)	True N (usft)	Vertical Section (usft)	Toolbit Rate (ft/100usft)	Build Rate (ft/100usft)	Turn Rate (ft/100usft)	
5,200.00	7.16	239.37	5,182.68	-148.70	-251.11	-123.96	0.00	0.00	0.00	
5,300.00	7.16	239.37	5,281.90	-155.04	-261.83	-129.25	0.00	0.00	0.00	
5,400.00	7.16	239.37	5,381.13	-161.39	-272.54	-134.54	0.00	0.00	0.00	
5,500.00	7.16	239.37	5,480.35	-167.74	-283.26	-139.83	0.00	0.00	0.00	
5,600.00	7.16	239.37	5,579.57	-174.09	-293.98	-145.12	0.00	0.00	0.00	
5,700.00	7.16	239.37	5,678.79	-180.43	-304.70	-150.41	0.00	0.00	0.00	
5,800.00	7.16	239.37	5,778.01	-186.78	-315.42	-155.71	0.00	0.00	0.00	
5,900.00	7.16	239.37	5,877.23	-193.13	-326.14	-161.00	0.00	0.00	0.00	
6,000.00	7.16	239.37	5,976.45	-199.47	-336.86	-166.29	0.00	0.00	0.00	
6,100.00	7.16	239.37	6,075.67	-205.82	-347.58	-171.58	0.00	0.00	0.00	
6,200.00	7.16	239.37	6,174.89	-212.17	-358.30	-176.87	0.00	0.00	0.00	
6,300.00	7.16	239.37	6,274.12	-218.52	-369.01	-182.16	0.00	0.00	0.00	
6,400.00	7.16	239.37	6,373.34	-224.86	-379.73	-187.45	0.00	0.00	0.00	
6,500.00	7.16	239.37	6,472.56	-231.21	-390.45	-192.75	0.00	0.00	0.00	
6,600.00	7.16	239.37	6,571.78	-237.56	-401.17	-198.04	0.00	0.00	0.00	
6,700.00	7.16	239.37	6,671.00	-243.91	-411.89	-203.33	0.00	0.00	0.00	
6,800.00	7.16	239.37	6,770.22	-250.25	-422.61	-208.62	0.00	0.00	0.00	
6,900.00	7.16	239.37	6,869.44	-256.60	-433.33	-213.91	0.00	0.00	0.00	
7,000.00	7.16	239.37	6,968.66	-262.95	-444.05	-219.20	0.00	0.00	0.00	
7,100.00	7.16	239.37	7,067.88	-269.29	-454.77	-224.49	0.00	0.00	0.00	
7,200.00	7.16	239.37	7,167.10	-275.64	-465.48	-229.78	0.00	0.00	0.00	
7,300.00	7.16	239.37	7,266.33	-281.99	-476.20	-235.08	0.00	0.00	0.00	
7,400.00	7.16	239.37	7,365.55	-288.34	-486.92	-240.37	0.00	0.00	0.00	
7,500.00	7.16	239.37	7,464.77	-294.68	-497.64	-245.66	0.00	0.00	0.00	
7,600.00	7.16	239.37	7,563.99	-301.03	-508.36	-250.95	0.00	0.00	0.00	
7,700.00	7.16	239.37	7,663.21	-307.38	-519.08	-256.24	0.00	0.00	0.00	
7,800.00	7.16	239.37	7,762.43	-313.73	-529.80	-261.53	0.00	0.00	0.00	
7,900.00	7.16	239.37	7,861.65	-320.07	-540.52	-266.82	0.00	0.00	0.00	
8,000.00	7.16	239.37	7,960.87	-326.42	-551.24	-272.12	0.00	0.00	0.00	
8,100.00	7.16	239.37	8,060.09	-332.77	-561.95	-277.41	0.00	0.00	0.00	
8,200.00	7.16	239.37	8,159.32	-339.11	-572.67	-282.70	0.00	0.00	0.00	
8,300.00	7.16	239.37	8,258.54	-345.46	-583.39	-287.99	0.00	0.00	0.00	
8,400.00	7.16	239.37	8,357.76	-351.81	-594.11	-293.28	0.00	0.00	0.00	
8,500.00	7.16	239.37	8,456.98	-358.16	-604.83	-298.57	0.00	0.00	0.00	
8,600.00	7.16	239.37	8,556.20	-364.50	-615.55	-303.86	0.00	0.00	0.00	
8,700.00	7.16	239.37	8,655.42	-370.85	-626.27	-309.15	0.00	0.00	0.00	
8,800.00	7.16	239.37	8,754.64	-377.20	-636.99	-314.45	0.00	0.00	0.00	
8,900.00	7.16	239.37	8,853.86	-383.55	-647.71	-319.74	0.00	0.00	0.00	
9,000.00	7.16	239.37	8,953.08	-389.89	-658.42	-325.03	0.00	0.00	0.00	
9,100.00	7.16	239.37	9,052.30	-396.24	-669.14	-330.32	0.00	0.00	0.00	
9,194.83	7.16	239.37	9,146.39	-402.26	-679.31	-335.34	0.00	0.00	0.00	
9,200.00	7.10	239.37	9,151.53	-402.59	-679.86	-335.61	1.00	-1.00	0.00	
9,300.00	6.10	239.37	9,250.86	-408.45	-689.76	-340.50	1.00	-1.00	0.00	
9,400.00	5.10	239.37	9,350.38	-413.42	-698.16	-344.64	1.00	-1.00	0.00	
9,500.00	4.10	239.37	9,450.06	-417.51	-705.07	-348.05	1.00	-1.00	0.00	
9,600.00	3.10	239.37	9,549.86	-420.72	-710.48	-350.72	1.00	-1.00	0.00	
9,700.00	2.10	239.37	9,649.75	-423.03	-714.39	-352.65	1.00	-1.00	0.00	
9,800.00	1.10	239.37	9,749.71	-424.46	-716.79	-353.84	1.00	-1.00	0.00	
9,900.00	0.10	239.37	9,849.71	-425.00	-717.70	-354.29	1.00	-1.00	0.00	
9,910.43	0.00	0.00	9,860.14	-425.00	-717.71	-354.30	1.00	-1.00	0.00	
10,000.00	0.00	0.00	9,949.71	-425.00	-717.71	-354.30	0.00	0.00	0.00	
10,100.00	0.00	0.00	10,049.71	-425.00	-717.71	-354.30	0.00	0.00	0.00	
10,200.00	0.00	0.00	10,149.71	-425.00	-717.71	-354.30	0.00	0.00	0.00	
10,210.43	0.00	0.00	10,160.14	-425.00	-717.71	-354.30	0.00	0.00	0.00	

LEAM Drilling Services

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Spud Muffin 31-30 733H
Company:	Devon Energy	TVD Reference:	2959.3' GE + 25' KB @ 2984.30usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	2959.3' GE + 25' KB @ 2984.30usft
Site:	Spud Muffin 31-30	North Reference:	Grid
Well:	Spud Muffin 31-30 733H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Asm (usft)	Vertical Depth (usft)	True Vertical Depth (usft)	NEAN (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	TVM Rate (°/100usft)	
10,250.00	4.35	0.00	10,199.67	-423.50	-717.71	-352.80	11.00	11.00	0.00	
10,300.00	9.85	0.00	10,249.27	-417.32	-717.71	-346.65	11.00	11.00	0.00	
10,350.00	15.35	0.00	10,298.04	-406.41	-717.71	-335.79	11.00	11.00	0.00	
10,400.00	20.85	0.00	10,345.55	-390.88	-717.71	-320.34	11.00	11.00	0.00	
10,450.00	26.35	0.00	10,391.35	-370.87	-717.71	-300.42	11.00	11.00	0.00	
10,500.00	31.85	0.00	10,435.02	-346.56	-717.71	-276.22	11.00	11.00	0.00	
10,550.00	37.35	0.00	10,476.16	-318.18	-717.71	-247.97	11.00	11.00	0.00	
10,600.00	42.85	0.00	10,514.39	-285.98	-717.71	-215.92	11.00	11.00	0.00	
10,650.00	48.35	0.00	10,549.36	-250.27	-717.71	-180.37	11.00	11.00	0.00	
10,700.00	53.85	0.00	10,580.74	-211.37	-717.71	-141.65	11.00	11.00	0.00	
10,750.00	59.35	0.00	10,608.25	-169.65	-717.71	-100.12	11.00	11.00	0.00	
10,800.00	64.85	0.00	10,631.64	-125.47	-717.71	-56.15	11.00	11.00	0.00	
10,850.00	70.35	0.00	10,650.68	-79.26	-717.71	-10.15	11.00	11.00	0.00	
10,900.00	75.85	0.00	10,665.21	-31.44	-717.71	37.45	11.00	11.00	0.00	
10,950.00	81.35	0.00	10,675.09	17.55	-717.71	86.22	11.00	11.00	0.00	
11,000.00	86.85	0.00	10,680.23	67.27	-717.71	135.71	11.00	11.00	0.00	
11,024.58	89.56	0.00	10,681.00	91.84	-717.71	160.17	11.00	11.00	0.00	
11,100.00	89.56	0.00	10,681.58	167.25	-717.71	235.23	0.00	0.00	0.00	
11,200.00	89.56	0.00	10,682.35	267.25	-717.71	334.77	0.00	0.00	0.00	
11,300.00	89.56	0.00	10,683.13	367.25	-717.71	434.31	0.00	0.00	0.00	
11,400.00	89.56	0.00	10,683.90	467.24	-717.71	533.85	0.00	0.00	0.00	
11,500.00	89.56	0.00	10,684.67	567.24	-717.71	633.38	0.00	0.00	0.00	
11,600.00	89.56	0.00	10,685.45	667.24	-717.71	732.92	0.00	0.00	0.00	
11,700.00	89.56	0.00	10,686.22	767.24	-717.71	832.46	0.00	0.00	0.00	
11,800.00	89.56	0.00	10,687.00	867.23	-717.71	932.00	0.00	0.00	0.00	
11,900.00	89.56	0.00	10,687.77	967.23	-717.71	1,031.53	0.00	0.00	0.00	
12,000.00	89.56	0.00	10,688.54	1,067.23	-717.71	1,131.07	0.00	0.00	0.00	
12,100.00	89.56	0.00	10,689.32	1,167.22	-717.71	1,230.61	0.00	0.00	0.00	
12,200.00	89.56	0.00	10,690.09	1,267.22	-717.71	1,330.14	0.00	0.00	0.00	
12,300.00	89.56	0.00	10,690.87	1,367.22	-717.71	1,429.68	0.00	0.00	0.00	
12,400.00	89.56	0.00	10,691.64	1,467.21	-717.71	1,529.22	0.00	0.00	0.00	
12,500.00	89.56	0.00	10,692.41	1,567.21	-717.71	1,628.76	0.00	0.00	0.00	
12,600.00	89.56	0.00	10,693.19	1,667.21	-717.71	1,728.29	0.00	0.00	0.00	
12,700.00	89.56	0.00	10,693.96	1,767.21	-717.71	1,827.83	0.00	0.00	0.00	
12,800.00	89.56	0.00	10,694.73	1,867.20	-717.71	1,927.37	0.00	0.00	0.00	
12,900.00	89.56	0.00	10,695.51	1,967.20	-717.71	2,026.90	0.00	0.00	0.00	
13,000.00	89.56	0.00	10,696.28	2,067.20	-717.71	2,126.44	0.00	0.00	0.00	
13,100.00	89.56	0.00	10,697.06	2,167.19	-717.71	2,225.98	0.00	0.00	0.00	
13,200.00	89.56	0.00	10,697.83	2,267.19	-717.71	2,325.52	0.00	0.00	0.00	
13,300.00	89.56	0.00	10,698.60	2,367.19	-717.71	2,425.05	0.00	0.00	0.00	
13,400.00	89.56	0.00	10,699.38	2,467.18	-717.71	2,524.59	0.00	0.00	0.00	
13,500.00	89.56	0.00	10,700.15	2,567.18	-717.71	2,624.13	0.00	0.00	0.00	
13,600.00	89.56	0.00	10,700.93	2,667.18	-717.71	2,723.66	0.00	0.00	0.00	
13,700.00	89.56	0.00	10,701.70	2,767.18	-717.71	2,823.20	0.00	0.00	0.00	
13,800.00	89.56	0.00	10,702.47	2,867.17	-717.71	2,922.74	0.00	0.00	0.00	
13,900.00	89.56	0.00	10,703.25	2,967.17	-717.71	3,022.28	0.00	0.00	0.00	
14,000.00	89.56	0.00	10,704.02	3,067.17	-717.71	3,121.81	0.00	0.00	0.00	
14,100.00	89.56	0.00	10,704.79	3,167.16	-717.71	3,221.35	0.00	0.00	0.00	
14,200.00	89.56	0.00	10,705.57	3,267.16	-717.71	3,320.89	0.00	0.00	0.00	
14,300.00	89.56	0.00	10,706.34	3,367.16	-717.71	3,420.42	0.00	0.00	0.00	
14,400.00	89.56	0.00	10,707.12	3,467.15	-717.71	3,519.96	0.00	0.00	0.00	
14,500.00	89.56	0.00	10,707.89	3,567.15	-717.71	3,619.50	0.00	0.00	0.00	
14,600.00	89.56	0.00	10,708.66	3,667.15	-717.71	3,719.04	0.00	0.00	0.00	
14,700.00	89.56	0.00	10,709.44	3,767.15	-717.71	3,818.57	0.00	0.00	0.00	

LEAM Drilling Services

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Coordinate Reference:	Well Spud Muffin 31-30 733H
Company:	Devon Energy	TVD Reference:	2959.3' GE + 25' KB @ 2984.30usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	2959.3' GE + 25' KB @ 2984.30usft
Site:	Spud Muffin 31-30	North Reference:	Grid
Well:	Spud Muffin 31-30 733H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (USF)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N-S (usft)	E-W (usft)	Section (usft)	Drilled Rate ("/100usft)	Build Rate ("/100usft)	Turn Rate ("/100usft)	
14,800.00	89.56	0.00	10,710.21	3,867.14	-717.71	3,918.11	0.00	0.00	0.00	
14,900.00	89.56	0.00	10,710.99	3,967.14	-717.71	4,017.65	0.00	0.00	0.00	
15,000.00	89.56	0.00	10,711.76	4,067.14	-717.71	4,117.18	0.00	0.00	0.00	
15,100.00	89.56	0.00	10,712.53	4,167.13	-717.71	4,216.72	0.00	0.00	0.00	
15,200.00	89.56	0.00	10,713.31	4,267.13	-717.71	4,316.26	0.00	0.00	0.00	
15,300.00	89.56	0.00	10,714.08	4,367.13	-717.71	4,415.80	0.00	0.00	0.00	
15,400.00	89.56	0.00	10,714.85	4,467.12	-717.71	4,515.33	0.00	0.00	0.00	
15,500.00	89.56	0.00	10,715.63	4,567.12	-717.71	4,614.87	0.00	0.00	0.00	
15,600.00	89.56	0.00	10,716.40	4,667.12	-717.71	4,714.41	0.00	0.00	0.00	
15,700.00	89.56	0.00	10,717.18	4,767.12	-717.71	4,813.94	0.00	0.00	0.00	
15,800.00	89.56	0.00	10,717.95	4,867.11	-717.71	4,913.48	0.00	0.00	0.00	
15,900.00	89.56	0.00	10,718.72	4,967.11	-717.71	5,013.02	0.00	0.00	0.00	
16,000.00	89.56	0.00	10,719.50	5,067.11	-717.71	5,112.56	0.00	0.00	0.00	
16,100.00	89.56	0.00	10,720.27	5,167.10	-717.71	5,212.09	0.00	0.00	0.00	
16,200.00	89.56	0.00	10,721.05	5,267.10	-717.71	5,311.63	0.00	0.00	0.00	
16,300.00	89.56	0.00	10,721.82	5,367.10	-717.71	5,411.17	0.00	0.00	0.00	
16,400.00	89.56	0.00	10,722.59	5,467.10	-717.71	5,510.70	0.00	0.00	0.00	
16,500.00	89.56	0.00	10,723.37	5,567.09	-717.71	5,610.24	0.00	0.00	0.00	
16,600.00	89.56	0.00	10,724.14	5,667.09	-717.71	5,709.78	0.00	0.00	0.00	
16,700.00	89.56	0.00	10,724.91	5,767.09	-717.71	5,809.32	0.00	0.00	0.00	
16,800.00	89.56	0.00	10,725.69	5,867.08	-717.71	5,908.85	0.00	0.00	0.00	
16,900.00	89.56	0.00	10,726.46	5,967.08	-717.71	6,008.39	0.00	0.00	0.00	
17,000.00	89.56	0.00	10,727.24	6,067.08	-717.71	6,107.93	0.00	0.00	0.00	
17,100.00	89.56	0.00	10,728.01	6,167.07	-717.71	6,207.46	0.00	0.00	0.00	
17,200.00	89.56	0.00	10,728.78	6,267.07	-717.71	6,307.00	0.00	0.00	0.00	
17,300.00	89.56	0.00	10,729.56	6,367.07	-717.71	6,406.54	0.00	0.00	0.00	
17,400.00	89.56	0.00	10,730.33	6,467.07	-717.71	6,506.08	0.00	0.00	0.00	
17,500.00	89.56	0.00	10,731.11	6,567.06	-717.71	6,605.61	0.00	0.00	0.00	
17,600.00	89.56	0.00	10,731.88	6,667.06	-717.71	6,705.15	0.00	0.00	0.00	
17,700.00	89.56	0.00	10,732.65	6,767.06	-717.71	6,804.69	0.00	0.00	0.00	
17,800.00	89.56	0.00	10,733.43	6,867.05	-717.71	6,904.22	0.00	0.00	0.00	
17,900.00	89.56	0.00	10,734.20	6,967.05	-717.71	7,003.76	0.00	0.00	0.00	
18,000.00	89.56	0.00	10,734.97	7,067.05	-717.71	7,103.30	0.00	0.00	0.00	
18,100.00	89.56	0.00	10,735.75	7,167.04	-717.71	7,202.84	0.00	0.00	0.00	
18,200.00	89.56	0.00	10,736.52	7,267.04	-717.71	7,302.37	0.00	0.00	0.00	
18,300.00	89.56	0.00	10,737.30	7,367.04	-717.71	7,401.91	0.00	0.00	0.00	
18,390.94	89.56	0.00	10,738.00	7,457.97	-717.71	7,492.42	0.00	0.00	0.00	
PBHL (SM 733H)										

Design Data										
Target Name	Drill Angle (°)	Drill Dir (°)	TVD (usft)	N-S (usft)	E-W (usft)	North (usft)	East (usft)	Latitude	Longitude	
SHL (SM 733H) - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	456,844.10	636,755.33	32° 15' 20.0254 N	104° 1' 28.7884 W	
PBHL (SM 733H) - plan hits target center - Point	0.00	0.00	10,738.00	7,457.97	-717.71	464,302.07	636,037.62	32° 16' 33.8488 N	104° 1' 36.8986 W	

LEAM Drilling Services

Planning Report

Database	EDM 5000.1 Multi User Db	Local Coordinates Reference	Well Spud Muffin 31-30 733H
Company	Devon Energy	North Reference	2959.3' GE + 25' KB @ 2984.30usft
Project	Eddy County, NM (NAD-83)	MD Reference	2959.3' GE + 25' KB @ 2984.30usft
Site	Spud Muffin 31-30	North Reference	Grid
Well	Spud Muffin 31-30 733H	Survey Calculation Method	Minimum Curvature
Wellbore	OH		
Design	Plan #1		