

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMNM114990

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
JAYHAWK 6-7 FED 11H9. API Well No.
30-025-45543-00-X110. Field and Pool or Exploratory Area
BOBCAT DRAW-UPR WOLFCAMP11. County or Parish, State
LEA COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

DEVON ENERGY PRODUCTION COMPANY

Contact: REBECCA DEAL

Email: Rebecca.Deal@dvn.com

3a. Address

333 WEST SHERIDAN AVENUE
OKLAHOMA CITY, OK 73102

3b. Phone No. (include area code)

Ph: 405-228-8429

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

Sec 6 T26S R34E 450FNL 900FWL
32.078495 N Lat, 103.514626 W Lon

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

TYPE OF SUBMISSION

- ☒
- Notice of Intent
-
- ☐
- Subsequent Report
-
- ☐
- Final Abandonment Notice

TYPE OF ACTION

- | | | | |
|---|---|--|---|
| ☐ Acidize | ☐ Deepen | ☐ Production (Start/Resume) | ☐ Water Shut-Off |
| ☐ Alter Casing | ☐ Hydraulic Fracturing | ☐ Reclamation | ☐ Well Integrity |
| ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☒ Other |
| ☐ Change Plans | ☐ Plug and Abandon | ☐ Temporarily Abandon | Change to Original APD |
| ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | |

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

Devon Energy Production Co. requests the following changes to the Jayhawk 6-7 Fed 11H APD:

BHL change from 20 FSL & 1660 FWL, 6-26S-34E to 20 FNL & 1660 FWL, 7-26S-34E

TVD/MD Change from 12,730'/17,666' to 12,730'/23,031'

Alternate casing design change removing the 10.625" hole size from the intermediate section and changing the 8.625" casing thread form to a Teklock wedge

Please see attached revised C-102, drilling plan, directional plan, spec sheet and plot.

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

Electronic Submission #453125 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION COMPANY, sent to the Hobbs
Committed to AFMSS for processing by CHRISTOPHER WALLS on 02/05/2019 (19CRW0004SE)

Name (Printed/Typed) REBECCA DEAL

Title REGULATORY COMPLIANCE PROFESSOR

Signature (Electronic Submission)

Date 02/04/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By LONG VO

Title PETROLEUM ENGINEER

Date 02/20/2019

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 Hobbs

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 ****

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION COMPANY LP
LEASE NO.:	NMNM114990
WELL NAME & NO.:	JAYHAWK 6-7 FED 11H
SURFACE HOLE FOOTAGE:	450'/N & 900'/W
BOTTOM HOLE FOOTAGE:	20'/S & 1660'/W
LOCATION:	SECTION 6, T26S, R34E, NMPM
COUNTY:	LEA

COA

H2S	☒ Yes	☐ No	
Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☐ Multibowl	☒ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☒ Fluid Filled	☒ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☐ COM	☐ Unit

All Previous COAs Still Apply.

A. CASING

Primary Casing Design

1. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

Alternate Casing Design:

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

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

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Cement excess is less than 25%, more cement might be required.**

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
Cement excess is less than 25%, more cement might be required.

Operator has proposed to pump down 13-3/8" X 8-5/8" annulus. Operator must run a CBL from TD of the 8-5/8" casing to surface. Submit results to BLM.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
Cement excess is less than 25%, more cement might be required.

GENERAL REQUIREMENTS

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

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

☒ Chaves and Roosevelt Counties

Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.

During office hours call (575) 627-0272.

After office hours call (575)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

(575) 361-2822

☒ Lea County

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

393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

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

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

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

SURVEY NO. 6362B

Intent ☒ As Drilled ☐

API #

Operator Name: DEVON ENERGY PRODUCTION COMPANY, L.P.	Property Name: JAYHAWK 6-7 FED	Well Number 11H
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Kick Off Point (KOP)

UL	Section 6	Township 26S	Range 34E	Lot	Feet 45	From N/S FNL	Feet 1660	From E/W FWL	County LEA
Latitude 32.079595					Longitude -103.512173			NAD 83	

First Take Point (FTP)

UL C	Section 6	Township 26S	Range 34E	Lot	Feet 100	From N/S NORTH	Feet 1660	From E/W WEST	County LEA
Latitude 32.0794561					Longitude 103.5121732			NAD 83	

Last Take Point (LTP)

UL N	Section 7	Township 26S	Range 34E	Lot	Feet 100	From N/S SOUTH	Feet 1660	From E/W WEST	County LEA
Latitude 32.0509706					Longitude 103.5121781			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit? ☒

Is this well an infill well? ☐

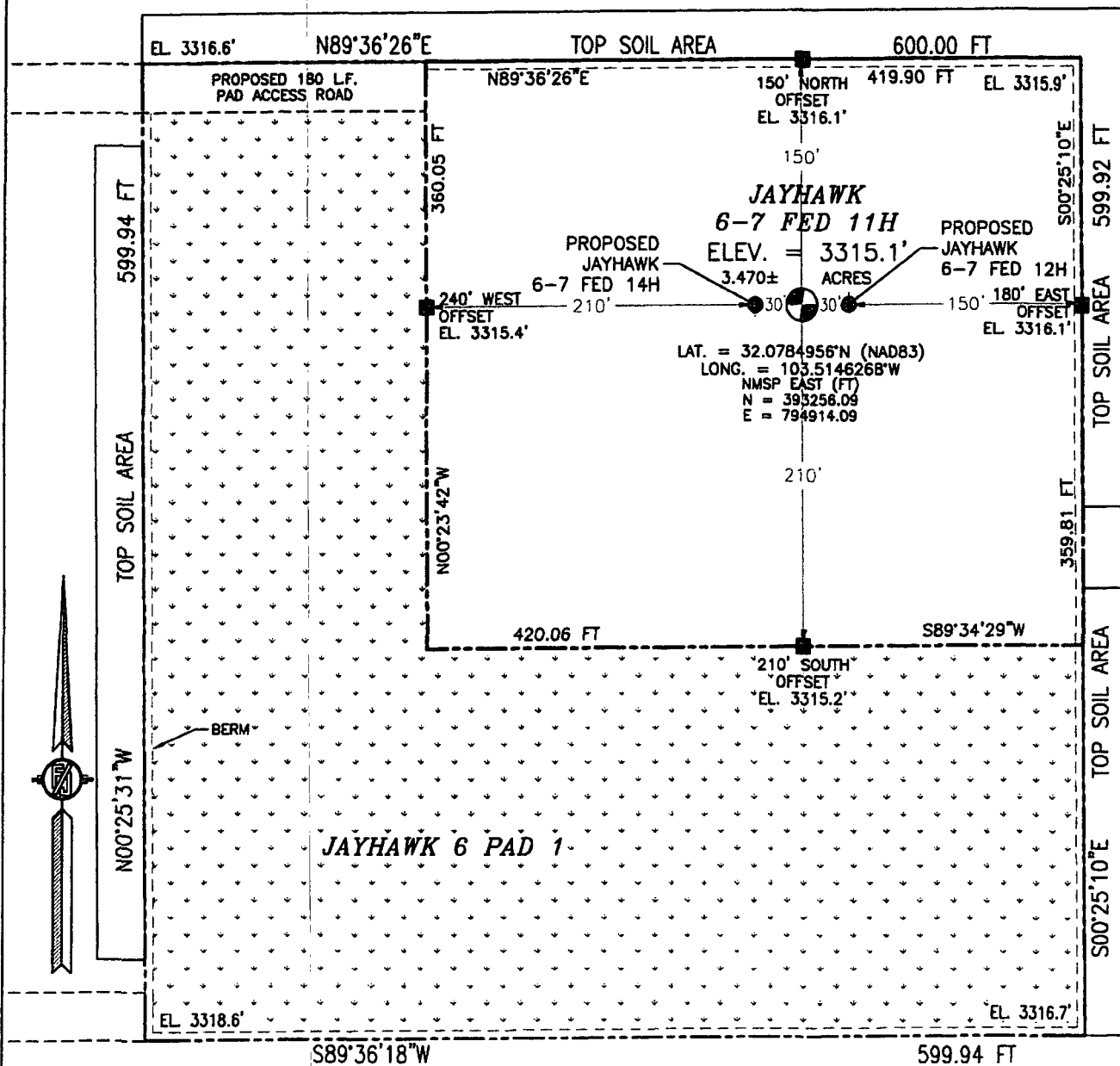
If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number
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KZ 06/29/2018

**SECTION 6, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE MAP**



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF STATE HIGHWAY 128 & CR 2 (BATTLE AXE) GO SOUTH-SOUTHWEST ON CR 2 FOR APPROX. 11.8 MILES, TURN SOUTHWEST (AROUND RANCH HOUSE) & GO APPROX. 2.0 MILES TO CATTLE GUARD, TURN EAST (BEFORE CATTLE GUARD) TAKE 12' CALICHE LEASE ROAD APPROX. 0.25 OF A MILE TO A RECLAIMED CALICHE LEASE ROAD ON RIGHT, GO SOUTHEAST ON RECLAIMED ROAD FOR APPROX. 50', TURN LEFT GO EAST 458' TO THE NORTHWEST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

JAYHAWK 6-7 FED 11H

**LOCATED 450 FT. FROM THE NORTH LINE
AND 900 FT. FROM THE WEST LINE OF
SECTION 6, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO**

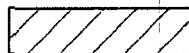
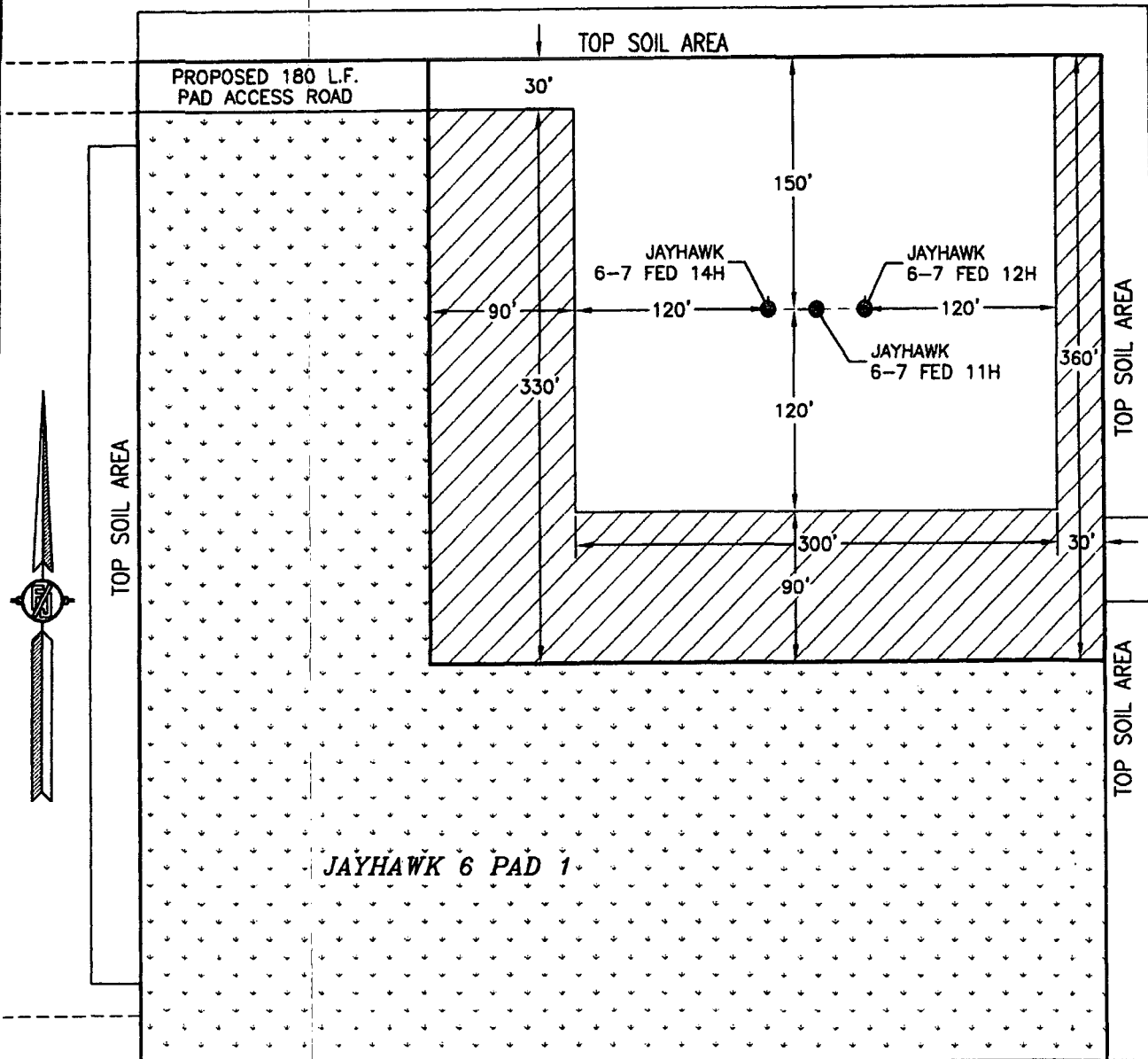
NOVEMBER 26, 2018

SURVEY NO. 6362B

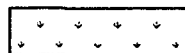
MADRON SURVEYING, INC. 301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 6, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN



DENOTES INTERIM PAD
RECLAMATION AREA



DENOTES GRADING SITE
RECLAMATION AREA

0 10 50 100 200
SCALE 1" = 100'

1.549± ACRES INTERIM PAD RECLAMATION AREA
4.669± ACRES GRADING SITE RECLAMATION AREA
2.045± ACRES NON-RECLAIMED AREA
8.263± ACRES JAYHAWK 6 PAD 1

DEVON ENERGY PRODUCTION COMPANY, L.P.
JAYHAWK 6-7 FED 11H
LOCATED 450 FT. FROM THE NORTH LINE
AND 900 FT. FROM THE WEST LINE OF
SECTION 6, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

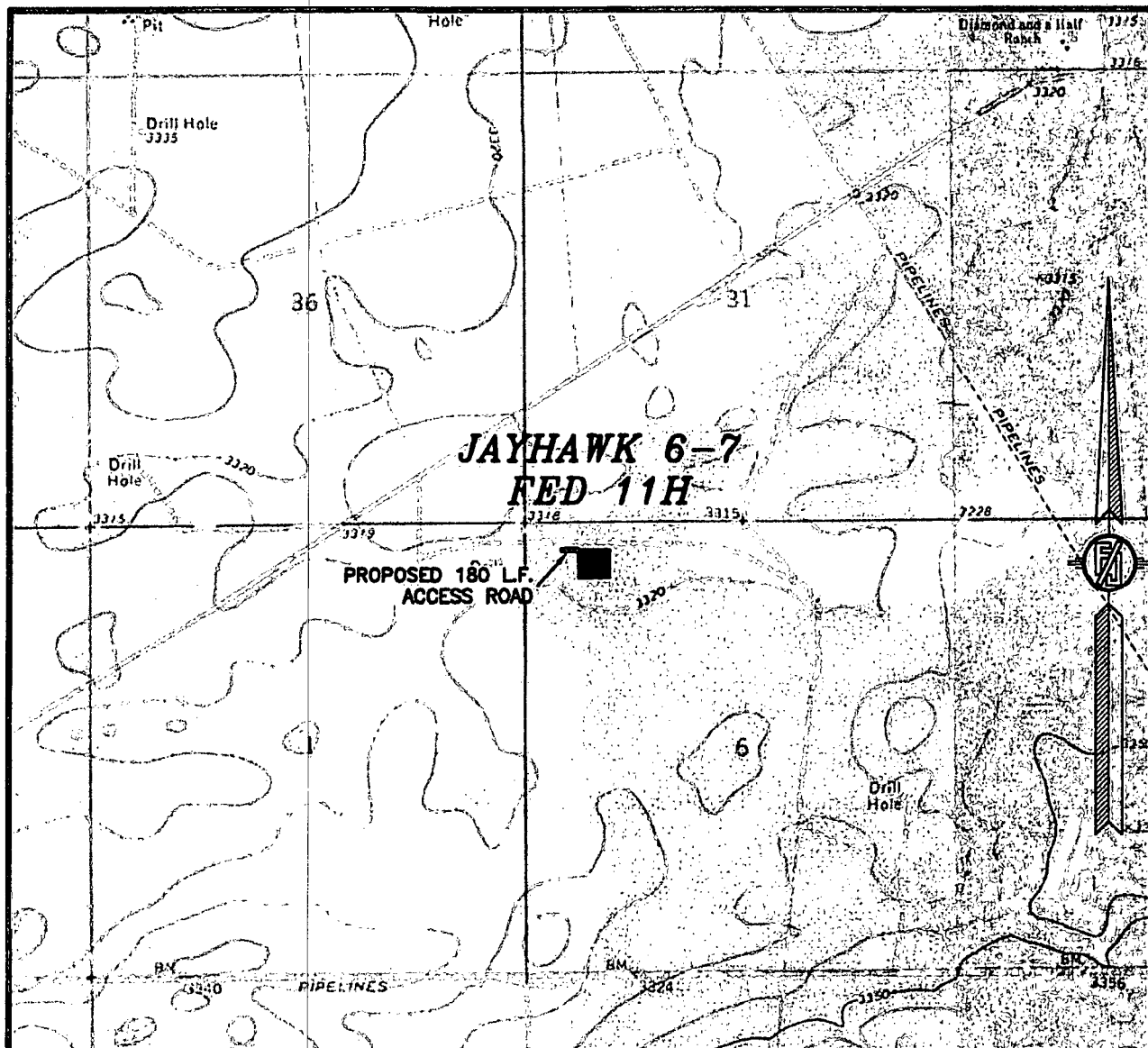
NOVEMBER 26, 2018

SURVEY NO. 6362B

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

CARLSBAD, NEW MEXICO

SECTION 6, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
PADUCA BREAKS EAST

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
JAYHAWK 6-7 FED 11H

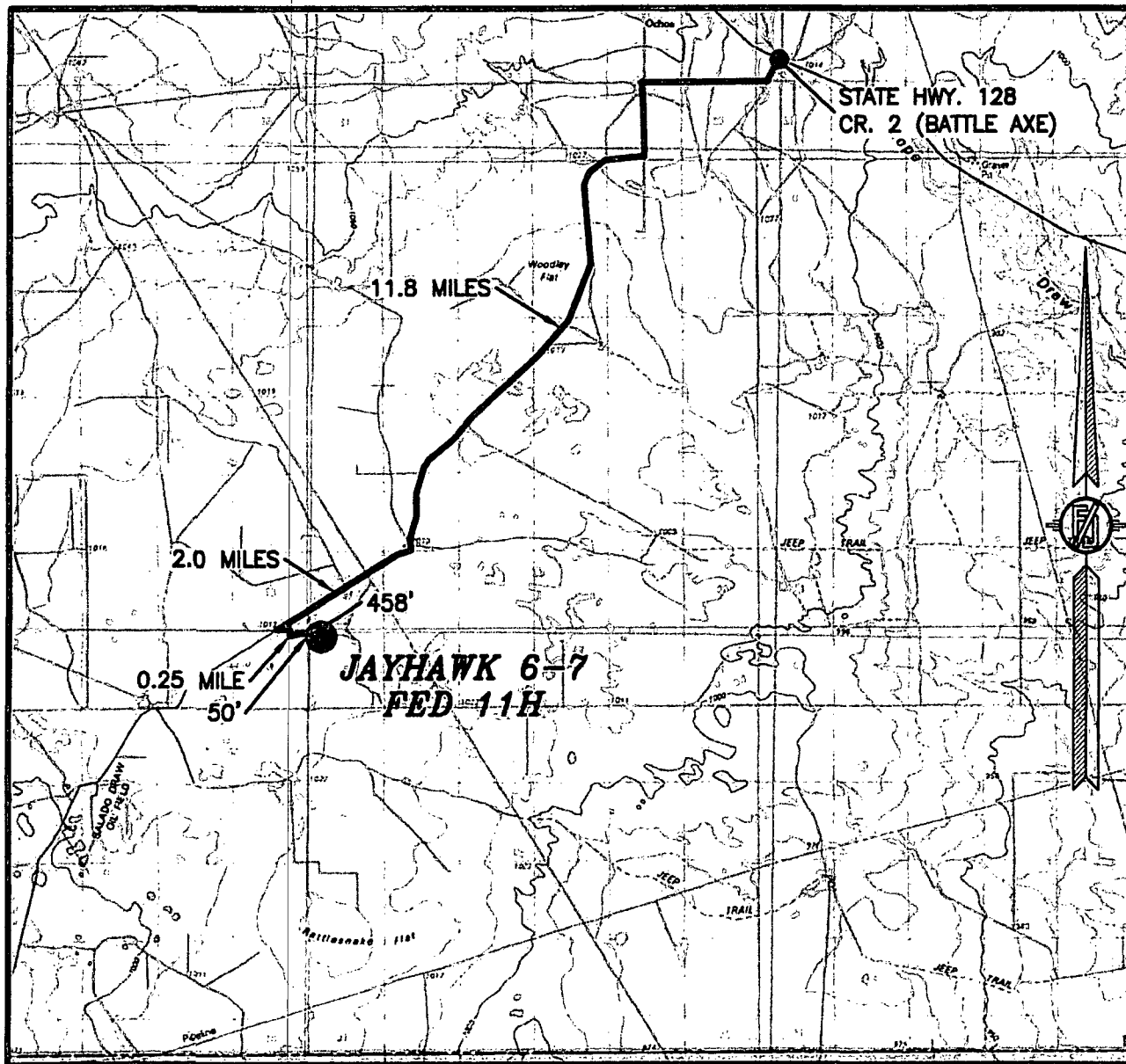
LOCATED 450 FT. FROM THE NORTH LINE
AND 900 FT. FROM THE WEST LINE OF
SECTION 6, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

NOVEMBER 26, 2018

SURVEY NO. 6362B

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

SECTION 6, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF STATE HIGHWAY 128 & CR 2 (BATTLE AXE) GO SOUTH-SOUTHWEST ON CR 2 FOR APPROX. 11.8 MILES, TURN SOUTHWEST (AROUND RANCH HOUSE) & GO APPROX. 2.0 MILES TO CATTLE GUARD, TURN EAST (BEFORE CATTLE GUARD) TAKE 12' CALICHE LEASE ROAD APPROX. 0.25 OF A MILE TO A RECLAIMED CALICHE LEASE ROAD ON RIGHT, GO SOUTHEAST ON RECLAIMED ROAD FOR APPROX. 50', TURN LEFT GO EAST 458' TO THE NORTHWEST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

JAYHAWK 6-7 FED 11H

LOCATED 450 FT. FROM THE NORTH LINE
AND 900 FT. FROM THE WEST LINE OF
SECTION 6, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

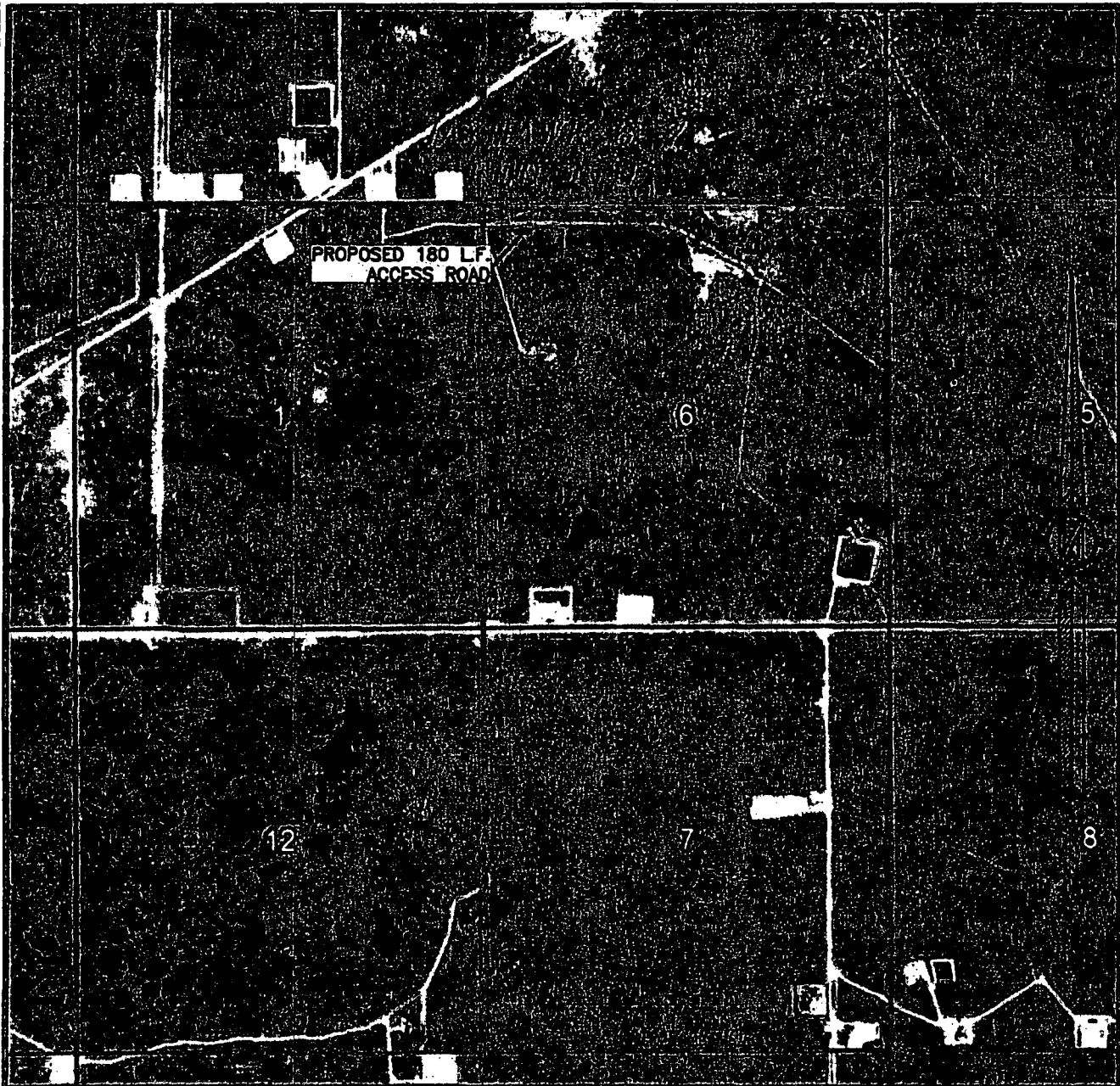
NOVEMBER 26, 2018

SURVEY NO. 6362B

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

CARLSBAD, NEW MEXICO

SECTION 6, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV 2015

DEVON ENERGY PRODUCTION COMPANY, L.P.

JAYHAWK 6-7 FED 11H

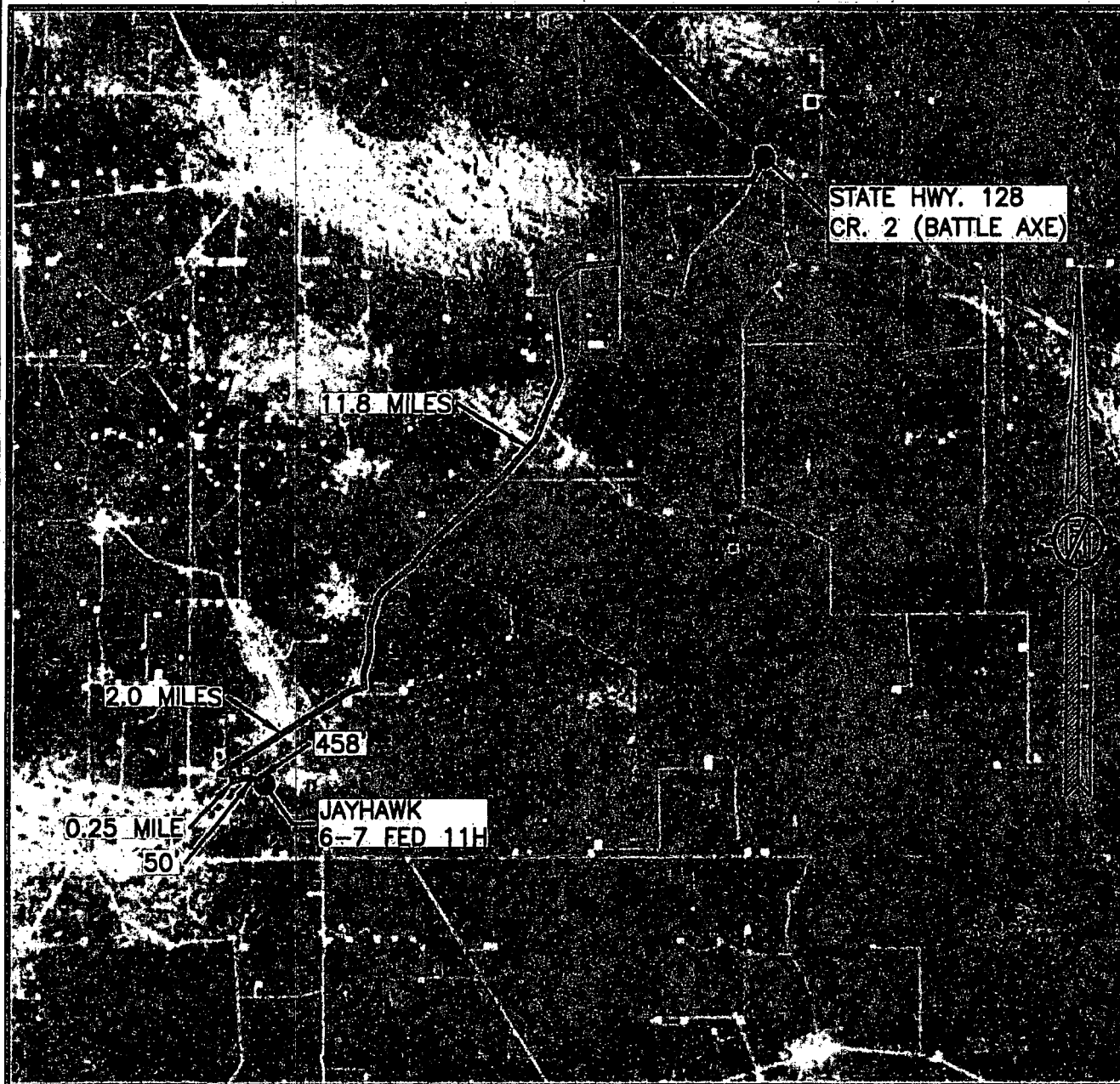
LOCATED 450 FT. FROM THE NORTH LINE
AND 900 FT. FROM THE WEST LINE OF
SECTION 6, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

NOVEMBER 26, 2018

SURVEY NO. 6362B

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

SECTION 6, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV 2015

DEVON ENERGY PRODUCTION COMPANY, L.P.
JAYHAWK 6-7 FED 11H

LOCATED 450 FT. FROM THE NORTH LINE
AND 900 FT. FROM THE WEST LINE OF
SECTION 6, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

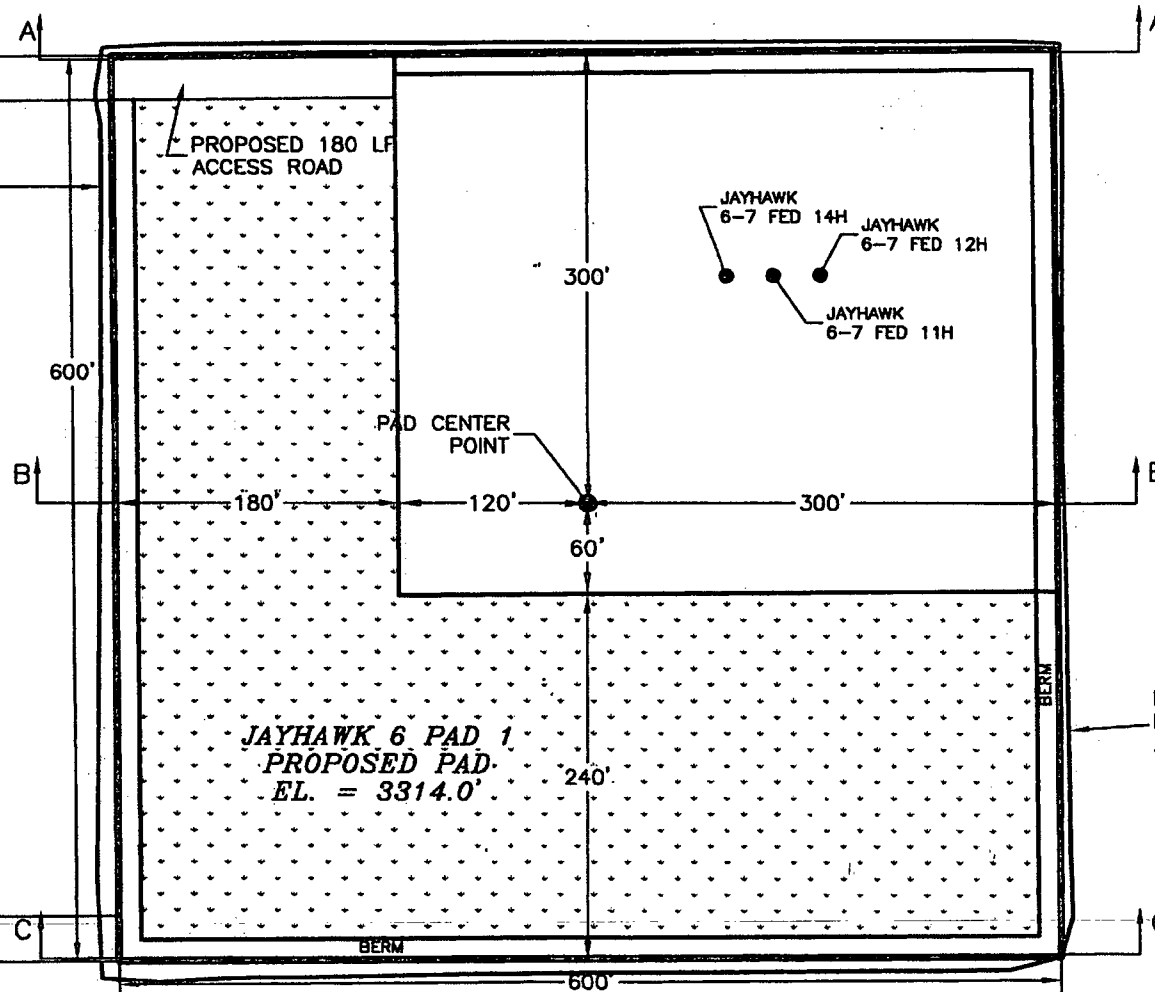
NOVEMBER 26, 2018

SURVEY NO. 6362B

MADRON SURVEYING, INC. 301 SOUTH CANAL (975) 234-3341 CARLSBAD, NEW MEXICO

PLAN VIEW

LIMITS OF
EARTHWORK
3:1 SLOPE (TYP.)



LIMITS OF
EARTHWORK
3:1 SLOPE (TYP.)



012 60 120 240
SCALE 1" = 120'

DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
JAYHAWK 6-7 FED 11H
SECTION 6, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

CUT	FILL	NET
25277 CU. YD	28 CU. YD	25249 CU. YD (CUT)

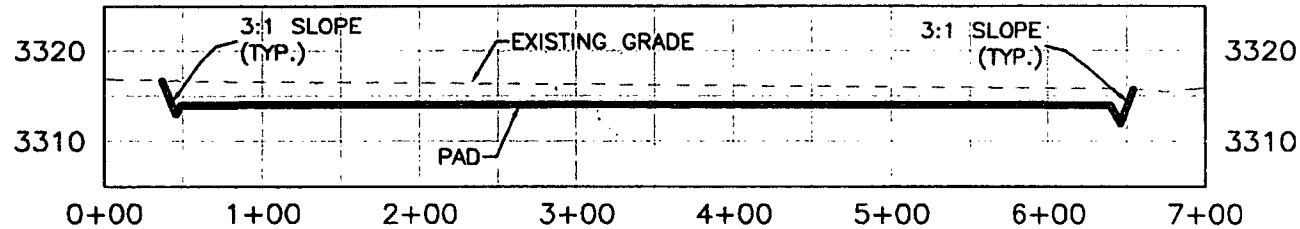
EARTHWORK QUANTITIES ARE ESTIMATED

NOVEMBER 26, 2018
MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

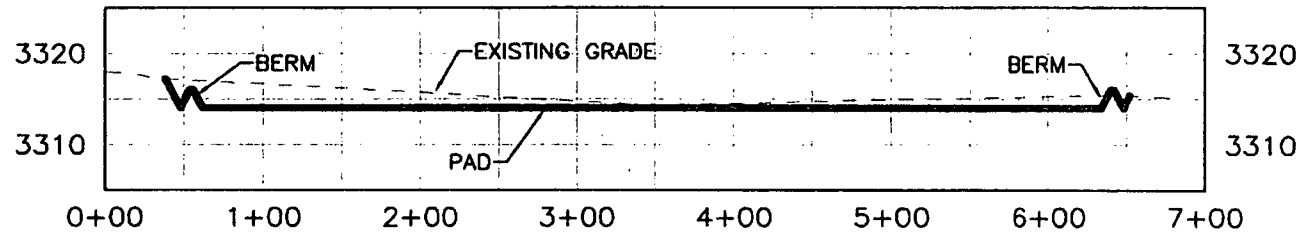
SHEET 1-2
SURVEY NO. 6362B

CROSS SECTIONS

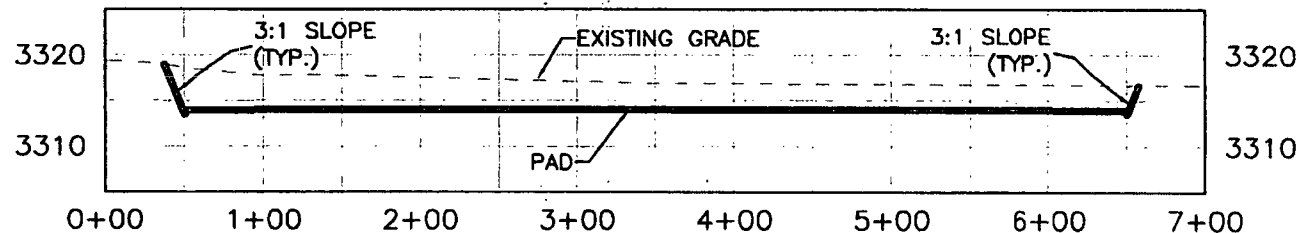
SECTION A-A



SECTION B-B



SECTION C-C



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

DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
JAYHAWK 6-7 FED 11H
SECTION 6, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

CUT	FILL	NET
25277 CU. YD	28 CU. YD	25249 CU. YD (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

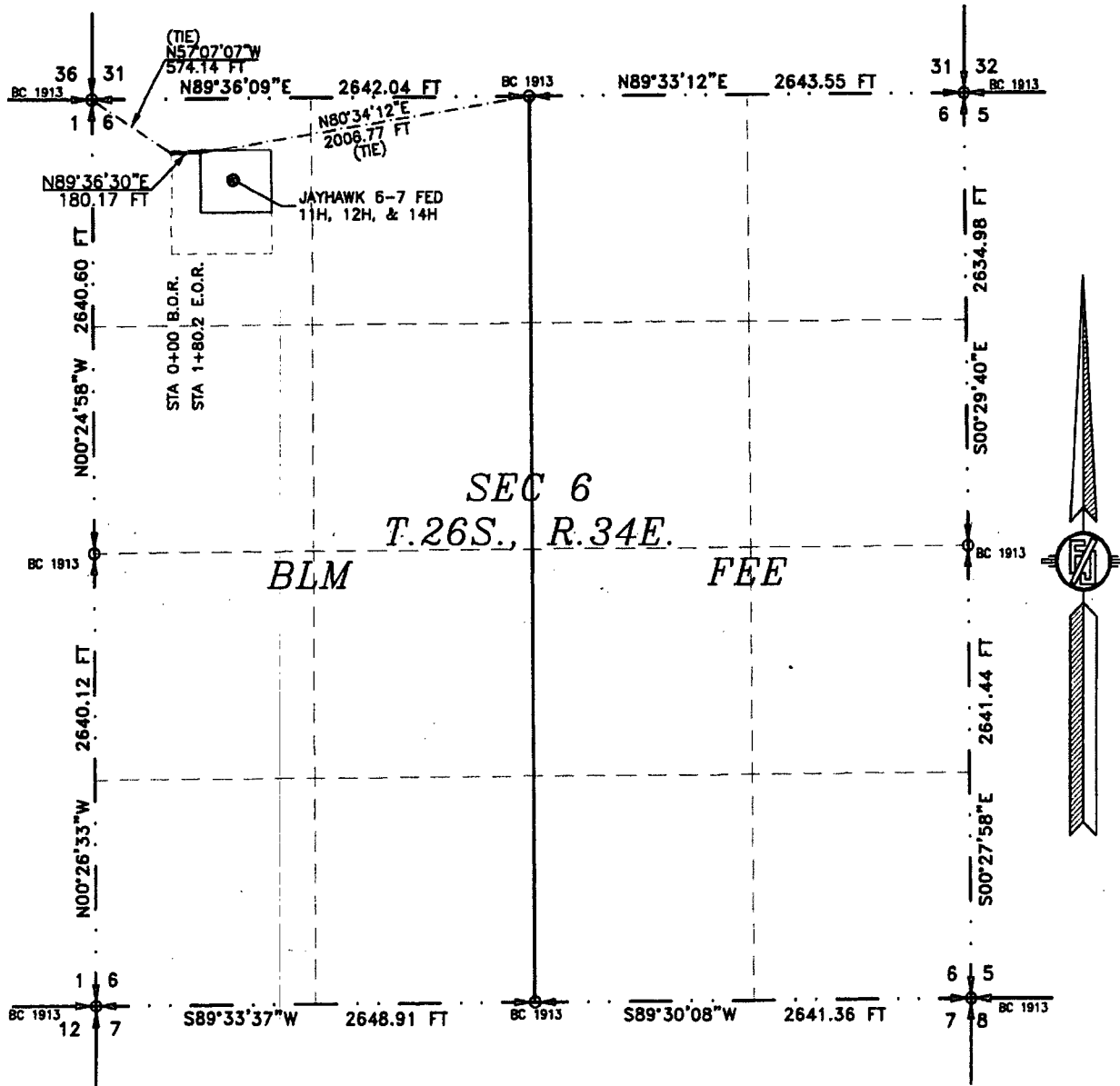
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SHEET 2-2
SURVEY NO. 6362B

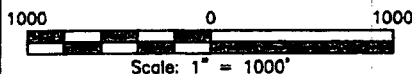
ACCESS ROAD PLAT

ACCESS ROAD FOR JAYHAWK 6-7 FED 11H, 12H, & 14H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 6, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 26, 2018



SEE NEXT SHEET (2-2) FOR DESCRIPTION



GENERAL NOTES

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

SHEET: 1-2

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

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 NOVEMBER 2018

FILMON F. JARAMILLO PLS 12797

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

SURVEY NO. 6362B

ACCESS ROAD PLAT

ACCESS ROAD FOR JAYHAWK 6-7 FED 11H, 12H, & 14H

**DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 6, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 26, 2018**

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 6, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 6, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 6, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M. BEARS N57°07'07"W, A DISTANCE OF 574.14 FEET;
THENCE N89°36'30"E A DISTANCE OF 180.17 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 6, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M. BEARS N80°34'12"E, A DISTANCE OF 2006.77 FEET;

SAID STRIP OF LAND BEING 180.17 FEET OR 10.92 RODS IN LENGTH, CONTAINING 0.124 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 180.17 L.F. 10.92 RODS 0.124 ACRES

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.

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 NOVEMBER, 2018


FILMON F. JARAMILLO PLS. 12797

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

SHEET: 2-2

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEY NO. 6362B

WCDSC Permian NM

WELL DETAILS: Jayhawk 6-7 FED 11H

RKB @ 3338.00ft (Original Well Elev)

3315.10

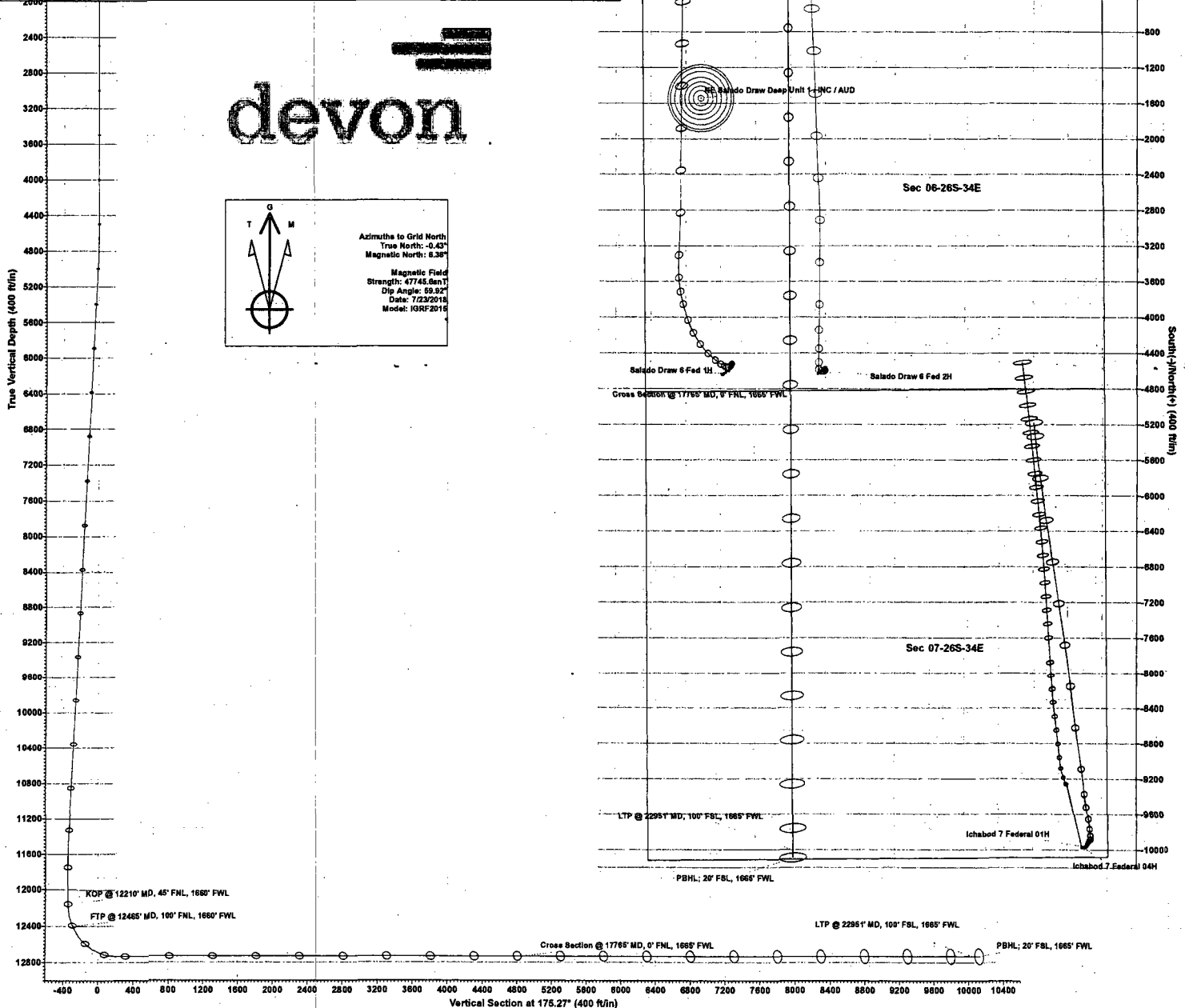
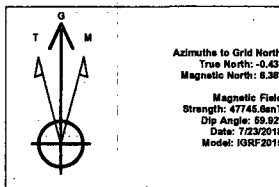
Northing 393258.09 Easting 794914.09 Latitude 32.078496 Longitude -103.614627

SECTION DETAILS

Permit Plan 2

MD	Inc	Azi	TVD	+N-S	+E-W	Dlog	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	0.00	
5078.05	7.23	61.81	5078.52	17.20	32.08	1.25	-14.49	
11378.13	7.23	61.81	11326.57	391.56	730.48	0.00	-329.94	
6	11859.84	0.00	0.00	11807.00	405.89	757.21	1.50	-342.02
8	12209.88	0.00	0.00	12157.04	405.89	757.21	0.00	-342.02
7	13109.88	90.00	179.57	12730.00	-167.06	781.47	10.00	228.32
8	23030.59	90.00	179.57	12730.00	-10087.49	835.24	0.00	10122.01

devon



1. Geologic Formations

TVD of target	12,730	Pilot hole depth	N/A
MD at TD:	23030	Deepest expected fresh water:	890'

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
RUSTLER	891		
TOP SALT	1251		
BASE OF SALT	4961		
BELL CANYON	4961		
CHERRY CANYON	6301		
BRUSHY CANYON	7931		
BONE SPRING	9441		
BONE SPRING 1ST	10381		
BONE SPRING 2ND	10921		
BONE SPRING 3RD	12071		
WOLFCAMP	12491		
STRAWN	15011		

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

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
14.75"	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS
8.75"	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS
9.875"	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS
6.75"	0	TD	5.5"	20	P110	Vam SG	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.

Casing Program (Alternate Design)

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	900' (TVD)	13.375"	48	H-40	STC	1.125	1.25	1.6
9.875"	0	12,071' (TVD)	8.625"	32	P110 HSCY	Tek-lock Wedge	1.125	1.25	1.6
7.875"	0	TD	5.5"	20	P110	Vam SG	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 8-5/8" casing in the 9-7/8" hole and the 5-1/2" SF/Flush casing in the 7-7/8" hole.

8-5/8" Intermediate casing will be kept fluid filled.

3. Cementing Program (Primary Design)

Casing	# Sks	Wt. lb/gal	Yld ft ³ /sack	Slurry Description
Surface	See AFMSS	See AFMSS	See AFMSS	See AFMSS
Int	See AFMSS	See AFMSS	See AFMSS	See AFMSS
	See AFMSS	See AFMSS	See AFMSS	See AFMSS
Intermediate Two-Stage (Bradenhead)	1000	14.8	1.33	Class C Cement + 0.125 lbs/sack Poly-E-Flake
	482	13.2	1.6	Class H w/ additives
Production	887	13.2	1.33	Class H w/ additives

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
10-3/4" Surface	Surface	50%
7-5/8" Intermediate	Surface	30%

5-1/2" Production Casing

200' Tie-Back to intermediate

25%

Cementing Program (Alternate Design)

Casing	# Sks	Wt. lb/ gal	Yld ft ³ / sack	Slurry Description
Surface	823	14.8	1.34	Tail: Class C Cement + 1% Calcium Chloride
Int	404	9	3.27	Lead: Tuned Light® Cement
	410	13.2	1.6	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
Intermediate Two-Stage (Bradenhead)	750	14.8	1.33	Class C Cement + 0.125 lbs/sack Poly-E-Flake
	410	13.2	1.6	Tail: (50:50) Class H Cement w/ additives
Production	1612	13.2	1.33	Class H Cement w/ additives

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

Casing String	TOC	% Excess
13-3/8" Surface	Surface	50%
8-5/8" Intermediate	Surface	30%
5-1/2" Production Casing	200' Tie-Back to intermediate	25%

WCDSC Permian NM

Lea County (NAD83 New Mexico East)

Sec 06-T26S-R34E

Jayhawk 6-7 FED 11H

Wellbore #1

Plan: Permit Plan 2

Standard Planning Report - Geographic

31 January, 2019

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Jayhawk 6-7 FED 11H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3338.00ft (Original Well Elev)
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3338.00ft (Original Well Elev)
Site:	Sec 06-T26S-R34E	North Reference:	Grid
Well:	Jayhawk 6-7 FED 11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Project	Lea County (NAD83 New Mexico East)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 06-T26S-R34E		
Site Position:		Northing:	393,700.60 usft
From:	Map	Easting:	794,011.60 usft
Position Uncertainty:	5.00 ft	Slot Radius:	13-3/16"
		Latitude:	32.079736
		Longitude:	-103.517530
		Grid Convergence:	0.43 °

Well	Jayhawk 6-7 FED 11H		
Well Position	+N-S	0.00 ft	Northing: 393,256.09 usft
	+E-W	0.00 ft	Easting: 794,914.09 usft
Position Uncertainty	0.50 ft	Wellhead Elevation:	Ground Level: 3,315.10 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2015	7/23/2018	6.80
			Dip Angle
			(°)
			Field Strength
			(nT)
			59.92
			47,745.58648612

Design	Permit Plan 2		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			(°)
			175.27

Plan Survey Tool Program	Date 1/31/2019		
Depth From	Depth To	Survey (Wellbore)	Tool Name
(ft)	(ft)		
1	0.00	23,030.59 Permit Plan 2 (Wellbore #1)	MWD+HDGM
			OWSG MWD + HDGM

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,078.05	7.23	61.81	5,076.52	17.20	32.08	1.25	1.25	0.00	61.81	
11,378.13	7.23	61.81	11,326.57	391.56	730.48	0.00	0.00	0.00	0.00	
11,859.84	0.00	0.00	11,807.00	405.89	757.21	1.50	-1.50	0.00	180.00	
12,209.88	0.00	0.00	12,157.04	405.89	757.21	0.00	0.00	0.00	0.00	
13,109.88	90.00	179.57	12,730.00	-167.06	761.47	10.00	10.00	0.00	179.57	PBHL - Jayhawk 6-7 f
23,030.59	90.00	179.57	12,730.00	-10,087.49	835.24	0.00	0.00	0.00	0.00	PBHL - Jayhawk 6-7 f

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Jayhawk 6-7 FED 11H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3338.00ft (Original Well Elev)
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3338.00ft (Original Well Elev)
Site:	Sec 06-T26S-R34E	North Reference:	Grid
Well:	Jayhawk 6-7 FED 11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey										
Measured Depth (ft)	Inclination (")	Azimuth (")	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
100.00	0.00	0.00	100.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
200.00	0.00	0.00	200.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
300.00	0.00	0.00	300.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
400.00	0.00	0.00	400.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
500.00	0.00	0.00	500.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
600.00	0.00	0.00	600.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
700.00	0.00	0.00	700.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
800.00	0.00	0.00	800.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
900.00	0.00	0.00	900.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
2,300.00	0.00	0.00	2,300.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
2,700.00	0.00	0.00	2,700.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
2,800.00	0.00	0.00	2,800.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
2,900.00	0.00	0.00	2,900.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
3,100.00	0.00	0.00	3,100.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
3,200.00	0.00	0.00	3,200.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
3,300.00	0.00	0.00	3,300.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
3,400.00	0.00	0.00	3,400.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
3,500.00	0.00	0.00	3,500.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
3,600.00	0.00	0.00	3,600.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
3,700.00	0.00	0.00	3,700.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
3,800.00	0.00	0.00	3,800.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
3,900.00	0.00	0.00	3,900.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
4,000.00	0.00	0.00	4,000.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
4,100.00	0.00	0.00	4,100.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
4,200.00	0.00	0.00	4,200.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
4,300.00	0.00	0.00	4,300.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
4,400.00	0.00	0.00	4,400.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
4,500.00	0.00	0.00	4,500.00	0.00	0.00	393,256.09	794,914.09	32.078496	-103.514627	
4,600.00	1.25	61.81	4,599.99	0.52	0.96	393,256.60	794,915.05	32.078497	-103.514624	
4,700.00	2.50	61.81	4,699.94	2.06	3.85	393,258.15	794,917.93	32.078501	-103.514615	
4,800.00	3.75	61.81	4,799.79	4.64	8.65	393,260.73	794,922.74	32.078508	-103.514599	
4,900.00	5.00	61.81	4,899.49	8.24	15.37	393,264.33	794,929.46	32.078518	-103.514577	
5,000.00	6.25	61.81	4,999.01	12.87	24.01	393,268.96	794,938.10	32.078531	-103.514549	
5,078.05	7.23	61.81	5,076.52	17.20	32.08	393,273.29	794,946.17	32.078542	-103.514523	
5,100.00	7.23	61.81	5,098.29	18.50	34.52	393,274.59	794,948.60	32.078546	-103.514515	
5,200.00	7.23	61.81	5,197.50	24.44	45.60	393,280.53	794,959.69	32.078562	-103.514479	
5,300.00	7.23	61.81	5,296.71	30.39	56.69	393,286.47	794,970.77	32.078578	-103.514443	

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Jayhawk 6-7 FED 11H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3338.00ft (Original Well Elev)
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3338.00ft (Original Well Elev)
Site:	Sec 06-T26S-R34E	North Reference:	Grid
Well:	Jayhawk 6-7 FED 11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,400.00	7.23	61.81	5,395.91	36.33	67.77	393,292.42	794,981.86	32.078594	-103.514407
5,500.00	7.23	61.81	5,495.12	42.27	78.86	393,298.36	794,992.95	32.078610	-103.514371
5,600.00	7.23	61.81	5,594.32	48.21	89.94	393,304.30	795,004.03	32.078626	-103.514336
5,700.00	7.23	61.81	5,693.53	54.15	101.03	393,310.24	795,015.12	32.078642	-103.514300
5,800.00	7.23	61.81	5,792.74	60.10	112.11	393,316.19	795,026.20	32.078659	-103.514264
5,900.00	7.23	61.81	5,891.94	66.04	123.20	393,322.13	795,037.29	32.078675	-103.514228
6,000.00	7.23	61.81	5,991.15	71.98	134.28	393,328.07	795,048.37	32.078691	-103.514192
6,100.00	7.23	61.81	6,090.35	77.92	145.37	393,334.01	795,059.46	32.078707	-103.514156
6,200.00	7.23	61.81	6,189.56	83.86	156.46	393,339.95	795,070.54	32.078723	-103.514120
6,300.00	7.23	61.81	6,288.77	89.81	167.54	393,345.90	795,081.63	32.078739	-103.514084
6,400.00	7.23	61.81	6,387.97	95.75	178.63	393,351.84	795,092.71	32.078755	-103.514048
6,500.00	7.23	61.81	6,487.18	101.69	189.71	393,357.78	795,103.80	32.078771	-103.514012
6,600.00	7.23	61.81	6,586.38	107.63	200.80	393,363.72	795,114.89	32.078787	-103.513976
6,700.00	7.23	61.81	6,685.59	113.58	211.88	393,369.66	795,125.97	32.078803	-103.513940
6,800.00	7.23	61.81	6,784.79	119.52	222.97	393,375.61	795,137.06	32.078820	-103.513904
6,900.00	7.23	61.81	6,884.00	125.46	234.05	393,381.55	795,148.14	32.078836	-103.513868
7,000.00	7.23	61.81	6,983.21	131.40	245.14	393,387.49	795,159.23	32.078852	-103.513832
7,100.00	7.23	61.81	7,082.41	137.34	256.23	393,393.43	795,170.31	32.078868	-103.513797
7,200.00	7.23	61.81	7,181.62	143.29	267.31	393,399.37	795,181.40	32.078884	-103.513761
7,300.00	7.23	61.81	7,280.82	149.23	278.40	393,405.32	795,192.48	32.078900	-103.513725
7,400.00	7.23	61.81	7,380.03	155.17	289.48	393,411.26	795,203.57	32.078916	-103.513689
7,500.00	7.23	61.81	7,479.24	161.11	300.57	393,417.20	795,214.65	32.078932	-103.513653
7,600.00	7.23	61.81	7,578.44	167.05	311.65	393,423.14	795,225.74	32.078948	-103.513617
7,700.00	7.23	61.81	7,677.65	173.00	322.74	393,429.09	795,236.82	32.078964	-103.513581
7,800.00	7.23	61.81	7,776.85	178.94	333.82	393,435.03	795,247.91	32.078981	-103.513545
7,900.00	7.23	61.81	7,876.06	184.88	344.91	393,440.97	795,259.00	32.078997	-103.513509
8,000.00	7.23	61.81	7,975.26	190.82	355.99	393,446.91	795,270.08	32.079013	-103.513473
8,100.00	7.23	61.81	8,074.47	196.77	367.08	393,452.85	795,281.17	32.079029	-103.513437
8,200.00	7.23	61.81	8,173.68	202.71	378.17	393,458.80	795,292.25	32.079045	-103.513401
8,300.00	7.23	61.81	8,272.88	208.65	389.25	393,464.74	795,303.34	32.079061	-103.513365
8,400.00	7.23	61.81	8,372.09	214.59	400.34	393,470.68	795,314.42	32.079077	-103.513329
8,500.00	7.23	61.81	8,471.29	220.53	411.42	393,476.62	795,325.51	32.079093	-103.513293
8,600.00	7.23	61.81	8,570.50	226.48	422.51	393,482.56	795,336.59	32.079109	-103.513257
8,700.00	7.23	61.81	8,669.71	232.42	433.59	393,488.51	795,347.68	32.079125	-103.513221
8,800.00	7.23	61.81	8,768.91	238.36	444.68	393,494.45	795,358.76	32.079142	-103.513185
8,900.00	7.23	61.81	8,868.12	244.30	455.76	393,500.39	795,369.85	32.079158	-103.513149
9,000.00	7.23	61.81	8,967.32	250.24	466.85	393,506.33	795,380.94	32.079174	-103.513113
9,100.00	7.23	61.81	9,066.53	256.19	477.93	393,512.28	795,392.02	32.079190	-103.513077
9,200.00	7.23	61.81	9,165.74	262.13	489.02	393,518.22	795,403.11	32.079206	-103.513041
9,300.00	7.23	61.81	9,264.94	268.07	500.11	393,524.16	795,414.19	32.079222	-103.513005
9,400.00	7.23	61.81	9,364.15	274.01	511.19	393,530.10	795,425.28	32.079238	-103.512969
9,500.00	7.23	61.81	9,463.35	279.96	522.28	393,536.04	795,436.36	32.079254	-103.512933
9,600.00	7.23	61.81	9,562.56	285.90	533.36	393,541.99	795,447.45	32.079270	-103.512897
9,700.00	7.23	61.81	9,661.76	291.84	544.45	393,547.93	795,458.53	32.079286	-103.512861
9,800.00	7.23	61.81	9,760.97	297.78	555.53	393,553.87	795,469.62	32.079303	-103.512825
9,900.00	7.23	61.81	9,860.18	303.72	566.62	393,559.81	795,480.70	32.079319	-103.512789
10,000.00	7.23	61.81	9,959.38	309.67	577.70	393,565.75	795,491.79	32.079335	-103.512753
10,100.00	7.23	61.81	10,058.59	315.61	588.79	393,571.70	795,502.88	32.079351	-103.512717
10,200.00	7.23	61.81	10,157.79	321.55	599.87	393,577.64	795,513.96	32.079367	-103.512681
10,300.00	7.23	61.81	10,257.00	327.49	610.96	393,583.58	795,525.05	32.079383	-103.512645
10,400.00	7.23	61.81	10,356.21	333.43	622.05	393,589.52	795,536.13	32.079399	-103.512609
10,500.00	7.23	61.81	10,455.41	339.38	633.13	393,595.46	795,547.22	32.079415	-103.512573
10,600.00	7.23	61.81	10,554.62	345.32	644.22	393,601.41	795,558.30	32.079431	-103.512537
10,700.00	7.23	61.81	10,653.82	351.26	655.30	393,607.35	795,569.39	32.079447	-103.512501
10,800.00	7.23	61.81	10,753.03	357.20	666.39	393,613.29	795,580.47	32.079464	-103.512465

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Jayhawk 6-7 FED 11H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3338.00ft (Original Well Elev)
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3338.00ft (Original Well Elev)
Site:	Sec 06-T26S-R34E	North Reference:	Grid
Well:	Jayhawk 6-7 FED 11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,900.00	7.23	61.81	10,852.24	363.15	677.47	393,619.23	795,591.56	32.079480	-103.512431
11,000.00	7.23	61.81	10,951.44	369.09	688.56	393,625.18	795,602.64	32.079496	-103.512395
11,100.00	7.23	61.81	11,050.65	375.03	699.64	393,631.12	795,613.73	32.079512	-103.512359
11,200.00	7.23	61.81	11,149.85	380.97	710.73	393,637.06	795,624.82	32.079528	-103.512323
11,300.00	7.23	61.81	11,249.06	386.91	721.81	393,643.00	795,635.90	32.079544	-103.512287
11,378.13	7.23	61.81	11,326.57	391.56	730.48	393,647.64	795,644.56	32.079557	-103.512259
11,400.00	6.90	61.81	11,348.27	392.83	732.85	393,648.91	795,646.93	32.079560	-103.512252
11,500.00	5.40	61.81	11,447.69	397.89	742.28	393,653.97	795,656.37	32.079574	-103.512221
11,600.00	3.90	61.81	11,547.36	401.71	749.42	393,657.80	795,663.51	32.079584	-103.512198
11,700.00	2.40	61.81	11,647.21	404.31	754.26	393,660.40	795,668.35	32.079591	-103.512182
11,800.00	0.90	61.81	11,747.16	405.67	756.80	393,661.75	795,670.88	32.079595	-103.512174
11,859.84	0.00	0.00	11,807.00	405.89	757.21	393,661.98	795,671.30	32.079595	-103.512173
11,900.00	0.00	0.00	11,847.16	405.89	757.21	393,661.98	795,671.30	32.079595	-103.512173
12,000.00	0.00	0.00	11,947.16	405.89	757.21	393,661.98	795,671.30	32.079595	-103.512173
12,100.00	0.00	0.00	12,047.16	405.89	757.21	393,661.98	795,671.30	32.079595	-103.512173
12,200.00	0.00	0.00	12,147.16	405.89	757.21	393,661.98	795,671.30	32.079595	-103.512173
12,209.88	0.00	0.00	12,157.04	405.89	757.21	393,661.98	795,671.30	32.079595	-103.512173
KOP @ 12210' MD, 45' FNL, 1660' FWL									
12,300.00	9.01	179.57	12,246.79	398.81	757.26	393,654.90	795,671.35	32.079576	-103.512173
12,400.00	19.01	179.57	12,343.69	374.63	757.44	393,630.72	795,671.53	32.079510	-103.512173
12,465.05	25.52	179.57	12,403.86	350.00	757.63	393,606.09	795,671.71	32.079442	-103.512173
FTP @ 12465' MD, 100' FNL, 1660' FWL									
12,500.00	29.01	179.57	12,434.92	333.99	757.75	393,590.08	795,671.83	32.079398	-103.512173
12,600.00	39.01	179.57	12,517.71	278.13	758.16	393,534.22	795,672.25	32.079244	-103.512173
12,700.00	49.01	179.57	12,589.54	208.74	758.68	393,464.83	795,672.76	32.079054	-103.512173
12,800.00	59.01	179.57	12,648.22	127.93	759.28	393,384.02	795,673.36	32.078831	-103.512173
12,900.00	69.01	179.57	12,691.99	38.16	759.95	393,294.24	795,674.03	32.078585	-103.512173
13,000.00	79.01	179.57	12,719.50	-57.85	760.66	393,198.24	795,674.75	32.078321	-103.512173
13,100.00	89.01	179.57	12,729.91	-157.18	761.40	393,098.91	795,675.48	32.078048	-103.512173
13,109.88	90.00	179.57	12,730.00	-167.06	761.47	393,089.03	795,675.56	32.078021	-103.512173
13,200.00	90.00	179.57	12,730.00	-257.17	762.14	392,998.92	795,676.23	32.077773	-103.512173
13,300.00	90.00	179.57	12,730.00	-357.17	762.89	392,898.92	795,676.97	32.077498	-103.512173
13,400.00	90.00	179.57	12,730.00	-457.17	763.63	392,798.92	795,677.72	32.077223	-103.512173
13,500.00	90.00	179.57	12,730.00	-557.17	764.37	392,698.92	795,678.46	32.076948	-103.512173
13,600.00	90.00	179.57	12,730.00	-657.16	765.12	392,598.93	795,679.20	32.076673	-103.512173
13,700.00	90.00	179.57	12,730.00	-757.16	765.86	392,498.93	795,679.95	32.076398	-103.512173
13,800.00	90.00	179.57	12,730.00	-857.16	766.60	392,398.93	795,680.69	32.076124	-103.512173
13,900.00	90.00	179.57	12,730.00	-957.15	767.35	392,298.94	795,681.43	32.075849	-103.512173
14,000.00	90.00	179.57	12,730.00	-1,057.15	768.09	392,198.94	795,682.18	32.075574	-103.512173
14,100.00	90.00	179.57	12,730.00	-1,157.15	768.83	392,098.94	795,682.92	32.075299	-103.512173
14,200.00	90.00	179.57	12,730.00	-1,257.15	769.58	391,998.95	795,683.66	32.075024	-103.512174
14,300.00	90.00	179.57	12,730.00	-1,357.14	770.32	391,898.95	795,684.41	32.074749	-103.512174
14,400.00	90.00	179.57	12,730.00	-1,457.14	771.06	391,798.95	795,685.15	32.074474	-103.512174
14,500.00	90.00	179.57	12,730.00	-1,557.14	771.81	391,698.95	795,685.89	32.074199	-103.512174
14,600.00	90.00	179.57	12,730.00	-1,657.13	772.55	391,598.96	795,686.64	32.073925	-103.512174
14,700.00	90.00	179.57	12,730.00	-1,757.13	773.30	391,498.96	795,687.38	32.073650	-103.512174
14,800.00	90.00	179.57	12,730.00	-1,857.13	774.04	391,398.96	795,688.13	32.073375	-103.512174
14,900.00	90.00	179.57	12,730.00	-1,957.13	774.78	391,298.97	795,688.87	32.073100	-103.512174
15,000.00	90.00	179.57	12,730.00	-2,057.12	775.53	391,198.97	795,689.61	32.072825	-103.512174
15,100.00	90.00	179.57	12,730.00	-2,157.12	776.27	391,098.97	795,690.36	32.072550	-103.512174
15,200.00	90.00	179.57	12,730.00	-2,257.12	777.01	390,998.98	795,691.10	32.072275	-103.512174
15,300.00	90.00	179.57	12,730.00	-2,357.12	777.76	390,898.98	795,691.84	32.072000	-103.512174
15,400.00	90.00	179.57	12,730.00	-2,457.11	778.50	390,798.98	795,692.59	32.071726	-103.512174
15,500.00	90.00	179.57	12,730.00	-2,557.11	779.24	390,698.98	795,693.33	32.071451	-103.512174

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Jayhawk 6-7 FED 11H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3338.00ft (Original Well Elev)
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3338.00ft (Original Well Elev)
Site:	Sec 06-T26S-R34E	North Reference:	Grid
Well:	Jayhawk 6-7 FED 11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
15,600.00	90.00	179.57	12,730.00	-2,657.11	779.99	390,598.99	795,694.07	32.071176	-103.512174	
15,700.00	90.00	179.57	12,730.00	-2,757.10	780.73	390,498.99	795,694.82	32.070901	-103.512174	
15,800.00	90.00	179.57	12,730.00	-2,857.10	781.48	390,398.99	795,695.56	32.070626	-103.512174	
15,900.00	90.00	179.57	12,730.00	-2,957.10	782.22	390,299.00	795,696.31	32.070351	-103.512174	
16,000.00	90.00	179.57	12,730.00	-3,057.10	782.96	390,199.00	795,697.05	32.070076	-103.512175	
16,100.00	90.00	179.57	12,730.00	-3,157.09	783.71	390,099.00	795,697.79	32.069801	-103.512175	
16,200.00	90.00	179.57	12,730.00	-3,257.09	784.45	389,999.00	795,698.54	32.069527	-103.512175	
16,300.00	90.00	179.57	12,730.00	-3,357.09	785.19	389,899.01	795,699.28	32.069252	-103.512175	
16,400.00	90.00	179.57	12,730.00	-3,457.08	785.94	389,799.01	795,700.02	32.068977	-103.512175	
16,500.00	90.00	179.57	12,730.00	-3,557.08	786.68	389,699.01	795,700.77	32.068702	-103.512175	
16,600.00	90.00	179.57	12,730.00	-3,657.08	787.42	389,599.02	795,701.51	32.068427	-103.512175	
16,700.00	90.00	179.57	12,730.00	-3,757.08	788.17	389,499.02	795,702.25	32.068152	-103.512175	
16,800.00	90.00	179.57	12,730.00	-3,857.07	788.91	389,399.02	795,703.00	32.067877	-103.512175	
16,900.00	90.00	179.57	12,730.00	-3,957.07	789.65	389,299.03	795,703.74	32.067602	-103.512175	
17,000.00	90.00	179.57	12,730.00	-4,057.07	790.40	389,199.03	795,704.48	32.067328	-103.512175	
17,100.00	90.00	179.57	12,730.00	-4,157.07	791.14	389,099.03	795,705.23	32.067053	-103.512175	
17,200.00	90.00	179.57	12,730.00	-4,257.06	791.89	388,999.03	795,705.97	32.066778	-103.512175	
17,300.00	90.00	179.57	12,730.00	-4,357.06	792.63	388,899.04	795,706.72	32.066503	-103.512175	
17,400.00	90.00	179.57	12,730.00	-4,457.06	793.37	388,799.04	795,707.46	32.066228	-103.512175	
17,500.00	90.00	179.57	12,730.00	-4,557.05	794.12	388,699.04	795,708.20	32.065953	-103.512175	
17,600.00	90.00	179.57	12,730.00	-4,657.05	794.86	388,599.05	795,708.95	32.065678	-103.512175	
17,700.00	90.00	179.57	12,730.00	-4,757.05	795.60	388,499.05	795,709.69	32.065403	-103.512175	
17,765.00	90.00	179.57	12,730.00	-4,822.05	796.09	388,434.05	795,710.17	32.065225	-103.512176	
Cross Section @ 17765' MD, 0' FNL, 1665' FWL										
17,800.00	90.00	179.57	12,730.00	-4,857.05	796.35	388,399.05	795,710.43	32.065129	-103.512176	
17,900.00	90.00	179.57	12,730.00	-4,957.04	797.09	388,299.06	795,711.18	32.064854	-103.512176	
18,000.00	90.00	179.57	12,730.00	-5,057.04	797.83	388,199.06	795,711.92	32.064579	-103.512176	
18,100.00	90.00	179.57	12,730.00	-5,157.04	798.58	388,099.06	795,712.66	32.064304	-103.512176	
18,200.00	90.00	179.57	12,730.00	-5,257.04	799.32	387,999.06	795,713.41	32.064029	-103.512176	
18,300.00	90.00	179.57	12,730.00	-5,357.03	800.07	387,899.07	795,714.15	32.063754	-103.512176	
18,400.00	90.00	179.57	12,730.00	-5,457.03	800.81	387,799.07	795,714.89	32.063479	-103.512176	
18,500.00	90.00	179.57	12,730.00	-5,557.03	801.55	387,699.07	795,715.64	32.063204	-103.512176	
18,600.00	90.00	179.57	12,730.00	-5,657.02	802.30	387,599.08	795,716.38	32.062930	-103.512176	
18,700.00	90.00	179.57	12,730.00	-5,757.02	803.04	387,499.08	795,717.13	32.062655	-103.512176	
18,800.00	90.00	179.57	12,730.00	-5,857.02	803.78	387,399.08	795,717.87	32.062380	-103.512176	
18,900.00	90.00	179.57	12,730.00	-5,957.02	804.53	387,299.08	795,718.61	32.062105	-103.512176	
19,000.00	90.00	179.57	12,730.00	-6,057.01	805.27	387,199.09	795,719.36	32.061830	-103.512176	
19,100.00	90.00	179.57	12,730.00	-6,157.01	806.01	387,099.09	795,720.10	32.061555	-103.512176	
19,200.00	90.00	179.57	12,730.00	-6,257.01	806.76	386,999.09	795,720.84	32.061280	-103.512176	
19,300.00	90.00	179.57	12,730.00	-6,357.00	807.50	386,899.10	795,721.59	32.061005	-103.512176	
19,400.00	90.00	179.57	12,730.00	-6,457.00	808.24	386,799.10	795,722.33	32.060731	-103.512176	
19,500.00	90.00	179.57	12,730.00	-6,557.00	808.99	386,699.10	795,723.07	32.060456	-103.512176	
19,600.00	90.00	179.57	12,730.00	-6,657.00	809.73	386,599.11	795,723.82	32.060181	-103.512177	
19,700.00	90.00	179.57	12,730.00	-6,756.99	810.48	386,499.11	795,724.56	32.059906	-103.512177	
19,800.00	90.00	179.57	12,730.00	-6,856.99	811.22	386,399.11	795,725.31	32.059631	-103.512177	
19,900.00	90.00	179.57	12,730.00	-6,956.99	811.96	386,299.11	795,726.05	32.059356	-103.512177	
20,000.00	90.00	179.57	12,730.00	-7,056.99	812.71	386,199.12	795,726.79	32.059081	-103.512177	
20,100.00	90.00	179.57	12,730.00	-7,156.98	813.45	386,099.12	795,727.54	32.058806	-103.512177	
20,200.00	90.00	179.57	12,730.00	-7,256.98	814.19	385,999.12	795,728.28	32.058531	-103.512177	
20,300.00	90.00	179.57	12,730.00	-7,356.98	814.94	385,899.13	795,729.02	32.058257	-103.512177	
20,400.00	90.00	179.57	12,730.00	-7,456.97	815.68	385,799.13	795,729.77	32.057982	-103.512177	
20,500.00	90.00	179.57	12,730.00	-7,556.97	816.42	385,699.13	795,730.51	32.057707	-103.512177	
20,600.00	90.00	179.57	12,730.00	-7,656.97	817.17	385,599.14	795,731.25	32.057432	-103.512177	
20,700.00	90.00	179.57	12,730.00	-7,756.97	817.91	385,499.14	795,732.00	32.057157	-103.512177	

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Jayhawk 6-7 FED 11H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3338.00ft (Original Well Elev)
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3338.00ft (Original Well Elev)
Site:	Sec 06-T26S-R34E	North Reference:	Grid
Well:	Jayhawk 6-7 FED 11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
20,800.00	90.00	179.57	12,730.00	-7,856.96	818.66	385,399.14	795,732.74	32.056882	-103.512177	
20,900.00	90.00	179.57	12,730.00	-7,956.96	819.40	385,299.14	795,733.48	32.056807	-103.512177	
21,000.00	90.00	179.57	12,730.00	-8,056.96	820.14	385,199.15	795,734.23	32.056332	-103.512177	
21,100.00	90.00	179.57	12,730.00	-8,156.96	820.89	385,099.15	795,734.97	32.056058	-103.512177	
21,200.00	90.00	179.57	12,730.00	-8,256.95	821.63	384,999.15	795,735.72	32.055783	-103.512177	
21,300.00	90.00	179.57	12,730.00	-8,356.95	822.37	384,899.16	795,736.46	32.055508	-103.512177	
21,400.00	90.00	179.57	12,730.00	-8,456.95	823.12	384,799.16	795,737.20	32.055233	-103.512178	
21,500.00	90.00	179.57	12,730.00	-8,556.94	823.86	384,699.16	795,737.95	32.054958	-103.512178	
21,600.00	90.00	179.57	12,730.00	-8,656.94	824.60	384,599.16	795,738.69	32.054683	-103.512178	
21,700.00	90.00	179.57	12,730.00	-8,756.94	825.35	384,499.17	795,739.43	32.054408	-103.512178	
21,800.00	90.00	179.57	12,730.00	-8,856.94	826.09	384,399.17	795,740.18	32.054133	-103.512178	
21,900.00	90.00	179.57	12,730.00	-8,956.93	826.83	384,299.17	795,740.92	32.053859	-103.512178	
22,000.00	90.00	179.57	12,730.00	-9,056.93	827.58	384,199.18	795,741.66	32.053584	-103.512178	
22,100.00	90.00	179.57	12,730.00	-9,156.93	828.32	384,099.18	795,742.41	32.053309	-103.512178	
22,200.00	90.00	179.57	12,730.00	-9,256.92	829.07	383,999.18	795,743.15	32.053034	-103.512178	
22,300.00	90.00	179.57	12,730.00	-9,356.92	829.81	383,899.19	795,743.90	32.052759	-103.512178	
22,400.00	90.00	179.57	12,730.00	-9,456.92	830.55	383,799.19	795,744.64	32.052484	-103.512178	
22,500.00	90.00	179.57	12,730.00	-9,556.92	831.30	383,699.19	795,745.38	32.052209	-103.512178	
22,600.00	90.00	179.57	12,730.00	-9,656.91	832.04	383,599.19	795,746.13	32.051934	-103.512178	
22,700.00	90.00	179.57	12,730.00	-9,756.91	832.78	383,499.20	795,746.87	32.051660	-103.512178	
22,800.00	90.00	179.57	12,730.00	-9,856.91	833.53	383,399.20	795,747.61	32.051385	-103.512178	
22,900.00	90.00	179.57	12,730.00	-9,956.91	834.27	383,299.20	795,748.36	32.051110	-103.512178	
22,950.58	90.00	179.57	12,730.00	-10,007.48	834.65	383,248.62	795,748.73	32.050971	-103.512178	
LTP @ 22951' MD, 100' FSL, 1665' FWL										
23,000.00	90.00	179.57	12,730.00	-10,056.90	835.01	383,199.21	795,749.10	32.050835	-103.512178	
23,030.58	90.00	179.57	12,730.00	-10,087.48	835.24	383,168.63	795,749.33	32.050751	-103.512178	
PBHL; 20' FSL; 1665' FWL										
23,030.59	90.00	179.57	12,730.00	-10,087.49	835.24	383,168.62	795,749.33	32.050751	-103.512178	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
PBHL - Jayhawk 6-7 FEI	0.00	0.01	0.00	-10,087.49	835.24	383,168.62	795,749.33	32.050751	-103.512178	
- plan misses target center by 10122.01ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Point										
VP - Jayhawk 11H	0.00	0.00	10,000.00	405.89	757.21	393,661.98	795,671.30	32.079595	-103.512173	
- plan misses target center by 196.94ft at 10065.91ft MD (10024.77 TVD, 313.58 N, 585.01 E)										
- Point										

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
12,209.88	12,157.04	405.89	757.21	KOP @ 12210' MD, 45' FNL, 1660' FWL	
12,465.05	12,403.86	350.00	757.63	FTP @ 12465' MD, 100' FNL, 1660' FWL	
17,765.00	12,730.00	-4,822.05	796.09	Cross Section @ 17765' MD, 0' FNL, 1665' FWL	
22,950.58	12,730.00	-10,007.48	834.65	LTP @ 22951' MD, 100' FSL, 1665' FWL	
23,030.58	12,730.00	-10,087.48	835.24	PBHL; 20' FSL, 1665' FWL	