

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.
NMNM100568

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
MEAN GREEN 23-35 FED COM 4H9. API Well No.
30-025-44598-00-X110. Field and Pool or Exploratory Area
JABALINA11. 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

E-Mail: Rebecca.Deal@dvn.com

3a. Address

6488 SEVEN RIVERS HIGHWAY
ARTESIA, NM 88211

3b. Phone No. (include area code)

Ph: 405-228-8429

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

Sec 23 T26S R34E NESE 2449FSL 920FEL
32.028339 N Lat, 103.435127 W Lon

12. CHECK THE APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

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

- ☐
- Acidize
-
- ☐
- Alter Casing
-
- ☐
- Casing Repair
-
- ☐
- Change Plans
-
- ☐
- Convert to Injection

- ☐
- Deepen
-
- ☐
- Hydraulic Fracturing
-
- ☐
- New Construction
-
- ☐
- Plug and Abandon
-
- ☐
- Plug Back

- ☐
- Production (Start/Resume)
-
- ☐
- Reclamation
-
- ☐
- Recomplete
-
- ☐
- Temporarily Abandon
-
- ☐
- Water Disposal

- ☐
- Water Shut-Off
-
- ☐
- Well Integrity
-
- ☒
- Other
-
- Change to Original APD

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

Devon Energy Production Co. respectfully requests the following changes to the original APD:

TVD/MD from 12,714'/22,573' Wolfcamp to 10,790'/20,706' Bone Spring

Casing design - From four string to three due to FM change - See attached detailed drilling plan

Please see attached Plat, AC Report, Drilling and Directional Plan

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

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

**Electronic Submission #419557 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION COMPANY LP, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 05/15/2018 (18PP1031SE)**

Name (Printed/Typed) REBECCA DEAL

Title REGULATORY COMPLIANCE PROFESSOR

Signature (Electronic Submission)

Date 05/10/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By ZOTIA STEVENS

Title PETROLEUM ENGINEER

Date 05/29/2018

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 ****

KZ

DISTRICT I
1825 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 RD., AZTEC, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505
Phone: (505) 476-3400 Fax: (505) 476-3482

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-44598	Pool Code 96672	Pool Name WC-025 G-08 S263412K;BONE SPRING
Property Code	Property Name MEAN GREEN 23-35 FED COM	Well Number 4H
OGRID No. 6137	Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	Elevation 3194.1'

Surface Location

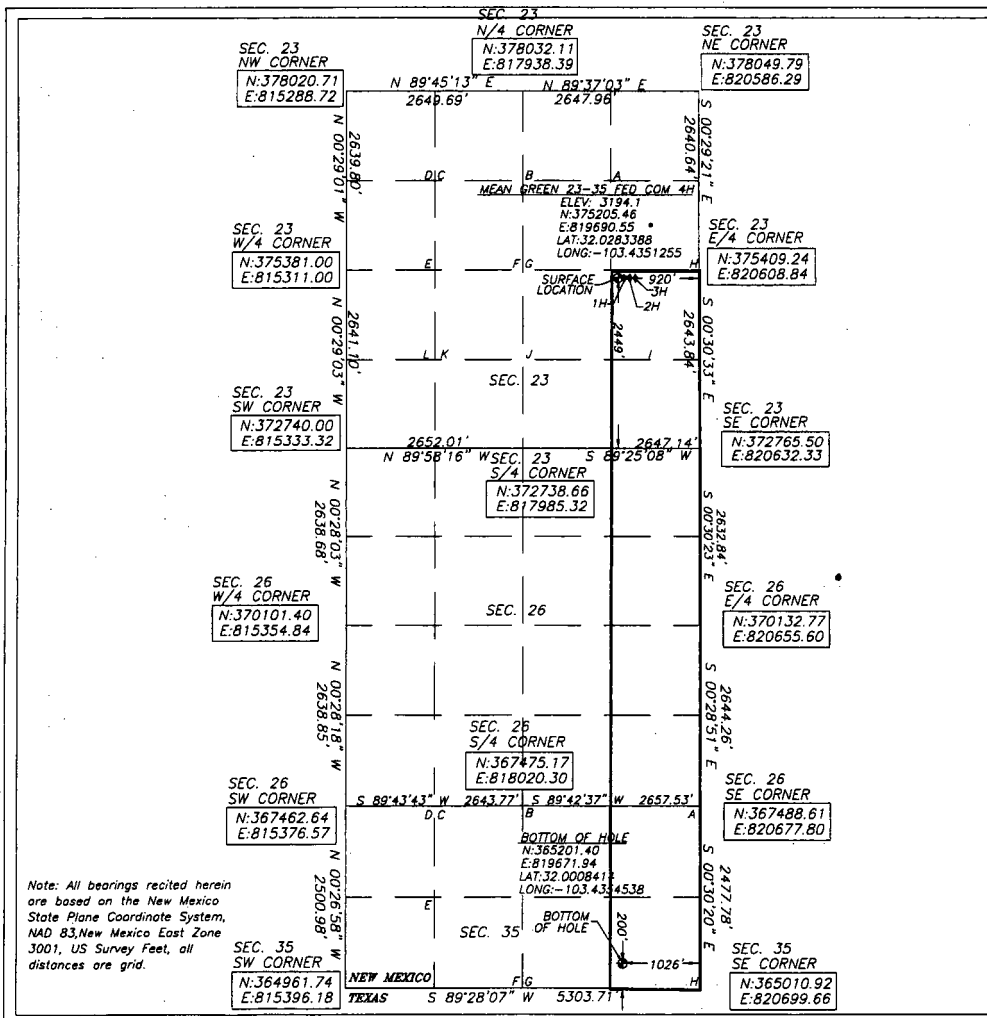
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	23	26-S	34-E		2449	SOUTH	920	EAST	LEA

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
1	35	26-S	34-E		200	SOUTH	1026	EAST	LEA

Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Rebecca Deal 5/10/2018
Signature Date

Rebecca Deal, Regulatory Analyst
Printed Name

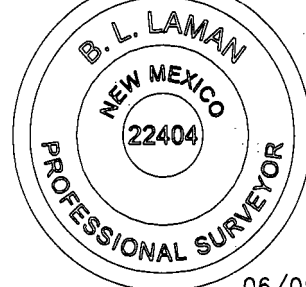
rebecca.deal@dvn.com
E-mail Address

SURVEYOR CERTIFICATION

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

B. L. LAMAN

Signature & Seal of Professional Surveyor



06/05/17

Certificate No. 22404 B.L. LAMAN

W.O. # DRAWN BY: CM

Devon Energy, Mean Green 23-35 Fed com 4H

1. Geologic Formations

TVD of target	10,790'	Pilot hole depth	
MD at TD:	20,706'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	993	Barren	
Top of Salt	1408	Barren	
Base of Salt/Delaware	5051	Oil	
Cherry Canyon	6371	Oil	
Lower Brushy Canyon	9327	Oil	
1st BSPG Lime	9577	Oil	
1st BSPG Sand	10509	Oil	
TZ Top	10790	Oil	

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

Devon Energy, Mean Green 23-35 Fed com 4H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	1050'	13.375"	54.5 48	H-40	STC	1.125	1.25	1.6
12.25"	0	5,350'	9.625"	40	J-55	LTC	1.125	1.25	1.6
8.75"	0	20,706'	5.5"	17	P-110	BTC	1.125	1.25	1.6
BLM Minimum Safety Factor							1.125	1.25	1.6 Dry 1.8 Wet

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

Must have table for contingency casing

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

Devon Energy, Mean Green 23-35 Fed com 4H

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	H ₂ O gal/sk	Yld ft ³ / sack	500# Comp. Strength (hours)	Slurry Description
13-3/8" Surface	823	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter.	1073	12.9	9.81	1.85	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	306	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
5-1/2" Prod.	617	11	16.9	3.17	22	Lead: Tuned Light ® + 0.125 lb/sk Pol-E-Flake
	2283	14.5	5.31	1.2	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

Casing String	TOC	% Excess
13-3/8" Surface	0'	50%
9-5/8" Intermediate	0'	30%
5-1/2" Production Casing	5150'	25%

4. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	1050'	FW Gel	8.6-8.8	28-34	N/C
1050'	5,350'	Saturated Brine	10.0-10.2	28-34	N/C
5,350'	20,706'	Cut Brine	8.5-9.3	28-34	N/C

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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5. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4780 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? Potentially

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.

Devon Energy, Mean Green 23-35 Fed com 4H

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

Will be pre-setting casing? Potentially

1. Spudder rig will move in and drill surface hole.
 - a. Rig will utilize fresh water based mud to drill 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.
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

☒ Directional Plan

☐ Other, describe

WCDSC Permian NM

Lea County (NAD83 New Mexico East)

Sec 23-T26S-R34E

Mean Green 23-35 Fed Com 4H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

30 April, 2018

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Mean Green 23-35 Fed Com 4H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3224.80ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3224.80ft
Site:	Sec 23-T26S-R34E	North Reference:	Grid
Well:	Mean Green 23-35 Fed Com 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

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 23-T26S-R34E		
Site Position:		Northing:	372,742.50 usft
From:	Lat/Long	Easting:	820,445.44 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32.021552
		Longitude:	-103.432756
		Grid Convergence:	0.48 °

Well	Mean Green 23-35 Fed Com 4H		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.50 ft	Wellhead Elevation:	
		Latitude:	32.028339
		Longitude:	-103.435126
		Ground Level:	3,193.30 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	4/18/2018	6.79
			Dip Angle
			(°)
			59.89
			Field Strength
			(nT)
			47,751.88092646

Design	Permit Plan 1		
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
			(°)
			180.72

Plan Survey Tool Program	Date: 4/30/2018		
Depth From	Depth To	Survey (Wellbore)	Tool Name
(ft)	(ft)		
1	0.00	20,706.12 Permit Plan 1 (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	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,903.75	4.20	320.05	2,903.39	11.34	-9.50	1.04	1.04	0.00	320.05	
5,237.71	4.20	320.05	5,231.08	142.44	-119.29	0.00	0.00	0.00	0.00	
5,506.88	0.00	0.00	5,500.00	150.00	-125.62	1.56	-1.56	0.00	180.00	
10,223.92	0.00	0.00	10,217.04	150.00	-125.62	0.00	0.00	0.00	0.00	
11,123.92	90.00	180.00	10,790.00	-422.96	-125.62	10.00	10.00	0.00	180.00	PBHL - Mean Green 2
20,706.12	90.00	180.00	10,790.00	-10,005.16	-125.62	0.00	0.00	0.00	0.00	PBHL - Mean Green 2

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Mean Green 23-35 Fed Com 4H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3224.80ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3224.80ft
Site:	Sec 23-T26S-R34E	North Reference:	Grid
Well:	Mean Green 23-35 Fed Com 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

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	375,205.54	819,690.56	32.028339	-103.435126
100.00	0.00	0.00	100.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
200.00	0.00	0.00	200.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
300.00	0.00	0.00	300.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
400.00	0.00	0.00	400.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
500.00	0.00	0.00	500.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
600.00	0.00	0.00	600.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
700.00	0.00	0.00	700.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
800.00	0.00	0.00	800.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
900.00	0.00	0.00	900.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
1,000.00	0.00	0.00	1,000.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
1,100.00	0.00	0.00	1,100.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
1,200.00	0.00	0.00	1,200.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
1,300.00	0.00	0.00	1,300.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
1,400.00	0.00	0.00	1,400.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
1,500.00	0.00	0.00	1,500.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
1,600.00	0.00	0.00	1,600.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
1,700.00	0.00	0.00	1,700.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
1,800.00	0.00	0.00	1,800.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
1,900.00	0.00	0.00	1,900.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
2,000.00	0.00	0.00	2,000.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
2,100.00	0.00	0.00	2,100.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
2,200.00	0.00	0.00	2,200.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
2,300.00	0.00	0.00	2,300.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
2,400.00	0.00	0.00	2,400.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
2,500.00	0.00	0.00	2,500.00	0.00	0.00	375,205.54	819,690.56	32.028339	-103.435126
Begin Nudge									
2,600.00	1.04	320.05	2,599.99	0.70	-0.58	375,206.24	819,689.98	32.028341	-103.435128
2,700.00	2.08	320.05	2,699.96	2.78	-2.33	375,208.33	819,688.23	32.028347	-103.435133
2,800.00	3.12	320.05	2,799.85	6.26	-5.25	375,211.81	819,685.32	32.028356	-103.435143
2,900.00	4.16	320.05	2,899.65	11.13	-9.32	375,216.68	819,681.24	32.028370	-103.435156
2,903.75	4.20	320.05	2,903.39	11.34	-9.50	375,216.89	819,681.06	32.028370	-103.435156
EOB									
3,000.00	4.20	320.05	2,999.38	16.75	-14.03	375,222.29	819,676.53	32.028385	-103.435171
3,100.00	4.20	320.05	3,099.11	22.37	-18.73	375,227.91	819,671.83	32.028401	-103.435186
3,200.00	4.20	320.05	3,198.84	27.98	-23.44	375,233.53	819,667.13	32.028417	-103.435201
3,300.00	4.20	320.05	3,298.57	33.60	-28.14	375,239.14	819,662.42	32.028432	-103.435216
3,400.00	4.20	320.05	3,398.30	39.22	-32.84	375,244.76	819,657.72	32.028448	-103.435231
3,500.00	4.20	320.05	3,498.04	44.83	-37.55	375,250.38	819,653.01	32.028463	-103.435246
3,600.00	4.20	320.05	3,597.77	50.45	-42.25	375,255.99	819,648.31	32.028479	-103.435261
3,700.00	4.20	320.05	3,697.50	56.07	-46.95	375,261.61	819,643.61	32.028494	-103.435276
3,800.00	4.20	320.05	3,797.23	61.68	-51.66	375,267.23	819,638.90	32.028510	-103.435291
3,900.00	4.20	320.05	3,896.96	67.30	-56.36	375,272.84	819,634.20	32.028525	-103.435306
4,000.00	4.20	320.05	3,996.69	72.92	-61.07	375,278.46	819,629.50	32.028541	-103.435321
4,100.00	4.20	320.05	4,096.42	78.53	-65.77	375,284.08	819,624.79	32.028556	-103.435336
4,200.00	4.20	320.05	4,196.15	84.15	-70.47	375,289.69	819,620.09	32.028572	-103.435351
4,300.00	4.20	320.05	4,295.89	89.77	-75.18	375,295.31	819,615.38	32.028588	-103.435366
4,400.00	4.20	320.05	4,395.62	95.39	-79.88	375,300.93	819,610.68	32.028603	-103.435381
4,500.00	4.20	320.05	4,495.35	101.00	-84.59	375,306.54	819,605.98	32.028619	-103.435396
4,600.00	4.20	320.05	4,595.08	106.62	-89.29	375,312.16	819,601.27	32.028634	-103.435411
4,700.00	4.20	320.05	4,694.81	112.24	-93.99	375,317.78	819,596.57	32.028650	-103.435426
4,800.00	4.20	320.05	4,794.54	117.85	-98.70	375,323.39	819,591.86	32.028665	-103.435441
4,900.00	4.20	320.05	4,894.27	123.47	-103.40	375,329.01	819,587.16	32.028681	-103.435456

Planning Report - Geographic

Database: EDM r5000.141_Prod US
 Company: WCDSC Permian NM
 Project: Lea County (NAD83 New Mexico East)
 Site: Sec 23-T26S-R34E
 Well: Mean Green 23-35 Fed Com 4H
 Wellbore: Wellbore #1
 Design: Permit Plan 1

Local Co-ordinate Reference
 TVD Reference: Well Mean Green 23-35 Fed Com 4H
 MD Reference: RKB @ 3224.80ft
 North Reference: RKB @ 3224.80ft
 Survey Calculation Method: Grid
 Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,000.00	4.20	320.05	4,994.01	129.09	-108.11	375,334.63	819,582.46	32.028696	-103.435471
5,100.00	4.20	320.05	5,093.74	134.70	-112.81	375,340.24	819,577.75	32.028712	-103.435486
5,200.00	4.20	320.05	5,193.47	140.32	-117.51	375,345.86	819,573.05	32.028727	-103.435501
5,237.71	4.20	320.05	5,231.08	142.44	-119.29	375,347.98	819,571.28	32.028733	-103.435507
EOH									
5,300.00	3.23	320.05	5,293.23	145.53	-121.88	375,351.07	819,568.68	32.028742	-103.435515
5,400.00	1.67	320.05	5,393.14	148.81	-124.62	375,354.35	819,565.94	32.028751	-103.435524
5,500.00	0.11	320.05	5,493.13	150.00	-125.62	375,355.54	819,564.95	32.028754	-103.435527
5,506.88	0.00	0.00	5,500.01	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
Drop to Vertical									
5,600.00	0.00	0.00	5,593.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
5,700.00	0.00	0.00	5,693.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
5,800.00	0.00	0.00	5,793.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
5,900.00	0.00	0.00	5,893.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
6,000.00	0.00	0.00	5,993.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
6,100.00	0.00	0.00	6,093.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
6,200.00	0.00	0.00	6,193.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
6,300.00	0.00	0.00	6,293.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
6,400.00	0.00	0.00	6,393.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
6,500.00	0.00	0.00	6,493.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
6,600.00	0.00	0.00	6,593.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
6,700.00	0.00	0.00	6,693.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
6,800.00	0.00	0.00	6,793.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
6,900.00	0.00	0.00	6,893.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
7,000.00	0.00	0.00	6,993.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
7,100.00	0.00	0.00	7,093.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
7,200.00	0.00	0.00	7,193.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
7,300.00	0.00	0.00	7,293.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
7,400.00	0.00	0.00	7,393.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
7,500.00	0.00	0.00	7,493.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
7,600.00	0.00	0.00	7,593.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
7,700.00	0.00	0.00	7,693.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
7,800.00	0.00	0.00	7,793.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
7,900.00	0.00	0.00	7,893.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
8,000.00	0.00	0.00	7,993.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
8,100.00	0.00	0.00	8,093.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
8,200.00	0.00	0.00	8,193.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
8,300.00	0.00	0.00	8,293.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
8,400.00	0.00	0.00	8,393.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
8,500.00	0.00	0.00	8,493.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
8,600.00	0.00	0.00	8,593.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
8,700.00	0.00	0.00	8,693.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
8,800.00	0.00	0.00	8,793.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
8,900.00	0.00	0.00	8,893.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
9,000.00	0.00	0.00	8,993.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
9,100.00	0.00	0.00	9,093.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
9,200.00	0.00	0.00	9,193.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
9,300.00	0.00	0.00	9,293.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
9,400.00	0.00	0.00	9,393.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
9,500.00	0.00	0.00	9,493.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
9,600.00	0.00	0.00	9,593.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
9,700.00	0.00	0.00	9,693.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
9,800.00	0.00	0.00	9,793.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527

Planning Report - Geographic

Database: EDM r5000.141_Prod US
Company: WCDSC Permian NM
Project: Lea County (NAD83 New Mexico East)
Site: Sec 23-T26S-R34E
Well: Mean Green 23-35 Fed Com 4H
Wellbore: Wellbore #1
Design: Permit Plan 1

Local Co-ordinate Reference
TVD Reference: RKB @ 3224.80ft
MD Reference: RKB @ 3224.80ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,900.00	0.00	0.00	9,893.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
10,000.00	0.00	0.00	9,993.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
10,100.00	0.00	0.00	10,093.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
10,200.00	0.00	0.00	10,193.13	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
10,223.92	0.00	0.00	10,217.05	150.00	-125.62	375,355.54	819,564.94	32.028754	-103.435527
KOP @ 10224' MD, 2599' FSL, 1046' FEL									
10,300.00	7.61	180.00	10,292.90	144.96	-125.62	375,350.50	819,564.94	32.028740	-103.435527
10,400.00	17.61	180.00	10,390.37	123.15	-125.62	375,328.70	819,564.94	32.028680	-103.435528
10,500.00	27.61	180.00	10,482.56	84.76	-125.62	375,290.30	819,564.94	32.028575	-103.435529
10,600.00	37.61	180.00	10,566.70	30.94	-125.62	375,236.48	819,564.94	32.028427	-103.435530
10,648.13	42.42	180.00	10,603.55	0.00	-125.62	375,205.54	819,564.94	32.028342	-103.435531
1st Take Point @ 10648' MD, 2449' FSL, 1046' FEL									
10,700.00	47.61	180.00	10,640.20	-36.67	-125.62	375,168.87	819,564.94	32.028241	-103.435532
10,800.00	57.61	180.00	10,700.85	-116.02	-125.62	375,089.52	819,564.94	32.028023	-103.435534
10,900.00	67.61	180.00	10,746.80	-204.70	-125.62	375,000.84	819,564.94	32.027779	-103.435537
11,000.00	77.61	180.00	10,776.65	-300.01	-125.62	374,905.54	819,564.94	32.027517	-103.435539
11,100.00	87.61	180.00	10,789.50	-399.05	-125.62	374,806.49	819,564.94	32.027245	-103.435542
11,123.92	90.00	180.00	10,790.00	-422.96	-125.62	374,782.58	819,564.94	32.027179	-103.435542
Land Point									
11,200.00	90.00	180.00	10,790.00	-499.04	-125.62	374,706.50	819,564.94	32.026970	-103.435544
11,300.00	90.00	180.00	10,790.00	-599.04	-125.62	374,606.50	819,564.94	32.026695	-103.435547
11,400.00	90.00	180.00	10,790.00	-699.04	-125.62	374,506.50	819,564.94	32.026421	-103.435550
11,500.00	90.00	180.00	10,790.00	-799.04	-125.62	374,406.50	819,564.94	32.026146	-103.435553
11,600.00	90.00	180.00	10,790.00	-899.04	-125.62	374,306.50	819,564.94	32.025871	-103.435555
11,700.00	90.00	180.00	10,790.00	-999.04	-125.62	374,206.50	819,564.94	32.025596	-103.435558
11,800.00	90.00	180.00	10,790.00	-1,099.04	-125.62	374,106.50	819,564.94	32.025321	-103.435561
11,900.00	90.00	180.00	10,790.00	-1,199.04	-125.62	374,006.50	819,564.94	32.025046	-103.435563
12,000.00	90.00	180.00	10,790.00	-1,299.04	-125.62	373,906.50	819,564.94	32.024771	-103.435566
12,100.00	90.00	180.00	10,790.00	-1,399.04	-125.62	373,806.50	819,564.94	32.024496	-103.435569
12,200.00	90.00	180.00	10,790.00	-1,499.04	-125.62	373,706.50	819,564.94	32.024222	-103.435571
12,300.00	90.00	180.00	10,790.00	-1,599.04	-125.62	373,606.50	819,564.94	32.023947	-103.435574
12,400.00	90.00	180.00	10,790.00	-1,699.04	-125.62	373,506.50	819,564.94	32.023672	-103.435577
12,500.00	90.00	180.00	10,790.00	-1,799.04	-125.62	373,406.50	819,564.94	32.023397	-103.435579
12,600.00	90.00	180.00	10,790.00	-1,899.04	-125.62	373,306.50	819,564.94	32.023122	-103.435582
12,700.00	90.00	180.00	10,790.00	-1,999.04	-125.62	373,206.50	819,564.94	32.022847	-103.435585
12,800.00	90.00	180.00	10,790.00	-2,099.04	-125.62	373,106.50	819,564.94	32.022572	-103.435587
12,900.00	90.00	180.00	10,790.00	-2,199.04	-125.62	373,006.50	819,564.94	32.022298	-103.435590
13,000.00	90.00	180.00	10,790.00	-2,299.04	-125.62	372,906.50	819,564.94	32.022023	-103.435593
13,100.00	90.00	180.00	10,790.00	-2,399.04	-125.62	372,806.50	819,564.94	32.021748	-103.435595
13,200.00	90.00	180.00	10,790.00	-2,499.04	-125.62	372,706.50	819,564.94	32.021473	-103.435598
13,300.00	90.00	180.00	10,790.00	-2,599.04	-125.62	372,606.50	819,564.94	32.021198	-103.435601
13,400.00	90.00	180.00	10,790.00	-2,699.04	-125.62	372,506.50	819,564.94	32.020923	-103.435603
13,500.00	90.00	180.00	10,790.00	-2,799.04	-125.62	372,406.50	819,564.94	32.020648	-103.435606
13,600.00	90.00	180.00	10,790.00	-2,899.04	-125.62	372,306.51	819,564.94	32.020374	-103.435609
13,700.00	90.00	180.00	10,790.00	-2,999.04	-125.62	372,206.51	819,564.94	32.020099	-103.435611
13,800.00	90.00	180.00	10,790.00	-3,099.04	-125.62	372,106.51	819,564.94	32.019824	-103.435614
13,900.00	90.00	180.00	10,790.00	-3,199.04	-125.62	372,006.51	819,564.94	32.019549	-103.435617
14,000.00	90.00	180.00	10,790.00	-3,299.04	-125.62	371,906.51	819,564.94	32.019274	-103.435620
14,100.00	90.00	180.00	10,790.00	-3,399.04	-125.62	371,806.51	819,564.94	32.018999	-103.435622
14,200.00	90.00	180.00	10,790.00	-3,499.04	-125.62	371,706.51	819,564.94	32.018724	-103.435625
14,300.00	90.00	180.00	10,790.00	-3,599.04	-125.62	371,606.51	819,564.94	32.018449	-103.435628
14,400.00	90.00	180.00	10,790.00	-3,699.04	-125.62	371,506.51	819,564.94	32.018175	-103.435630
14,500.00	90.00	180.00	10,790.00	-3,799.04	-125.62	371,406.51	819,564.94	32.017900	-103.435633

Planning Report - Geographic

Database: EDM r5000.141_Prod US
 Company: WCDSC Permian NM
 Project: Lea County (NAD83 New Mexico East)
 Site: Sec 23-T26S-R34E
 Well: Mean Green 23-35 Fed Com 4H
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Local Co-ordinate Reference: Well Mean Green 23-35 Fed Com 4H
 TVD Reference: RKB @ 3224.80ft
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 Survey Calculation Method: Minimum Curvature

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
14,600.00	90.00	180.00	10,790.00	-3,899.04	-125.62	371,306.51	819,564.94	32.017625	-103.435636	
14,700.00	90.00	180.00	10,790.00	-3,999.04	-125.62	371,206.51	819,564.94	32.017350	-103.435638	
14,800.00	90.00	180.00	10,790.00	-4,099.04	-125.62	371,106.51	819,564.94	32.017075	-103.435641	
14,900.00	90.00	180.00	10,790.00	-4,199.04	-125.62	371,006.51	819,564.94	32.016800	-103.435644	
15,000.00	90.00	180.00	10,790.00	-4,299.04	-125.62	370,906.51	819,564.94	32.016525	-103.435646	
15,100.00	90.00	180.00	10,790.00	-4,399.04	-125.62	370,806.51	819,564.94	32.016251	-103.435649	
15,200.00	90.00	180.00	10,790.00	-4,499.04	-125.62	370,706.51	819,564.94	32.015976	-103.435652	
15,300.00	90.00	180.00	10,790.00	-4,599.04	-125.62	370,606.51	819,564.94	32.015701	-103.435654	
15,400.00	90.00	180.00	10,790.00	-4,699.04	-125.62	370,506.51	819,564.94	32.015426	-103.435657	
15,500.00	90.00	180.00	10,790.00	-4,799.04	-125.62	370,406.51	819,564.94	32.015151	-103.435660	
15,600.00	90.00	180.00	10,790.00	-4,899.04	-125.62	370,306.51	819,564.94	32.014876	-103.435662	
15,700.00	90.00	180.00	10,790.00	-4,999.04	-125.62	370,206.51	819,564.94	32.014601	-103.435665	
15,800.00	90.00	180.00	10,790.00	-5,099.04	-125.62	370,106.51	819,564.94	32.014326	-103.435668	
15,900.00	90.00	180.00	10,790.00	-5,199.04	-125.62	370,006.51	819,564.94	32.014052	-103.435670	
16,000.00	90.00	180.00	10,790.00	-5,299.04	-125.62	369,906.51	819,564.94	32.013777	-103.435673	
16,100.00	90.00	180.00	10,790.00	-5,399.04	-125.62	369,806.51	819,564.94	32.013502	-103.435676	
16,200.00	90.00	180.00	10,790.00	-5,499.04	-125.62	369,706.51	819,564.94	32.013227	-103.435678	
16,300.00	90.00	180.00	10,790.00	-5,599.04	-125.62	369,606.51	819,564.94	32.012952	-103.435681	
16,400.00	90.00	180.00	10,790.00	-5,699.04	-125.62	369,506.51	819,564.94	32.012677	-103.435684	
16,500.00	90.00	180.00	10,790.00	-5,799.04	-125.62	369,406.51	819,564.94	32.012402	-103.435687	
16,600.00	90.00	180.00	10,790.00	-5,899.04	-125.62	369,306.51	819,564.94	32.012128	-103.435689	
16,700.00	90.00	180.00	10,790.00	-5,999.04	-125.62	369,206.51	819,564.94	32.011853	-103.435692	
16,800.00	90.00	180.00	10,790.00	-6,099.04	-125.62	369,106.51	819,564.94	32.011578	-103.435695	
16,900.00	90.00	180.00	10,790.00	-6,199.04	-125.62	369,006.51	819,564.94	32.011303	-103.435697	
17,000.00	90.00	180.00	10,790.00	-6,299.04	-125.62	368,906.51	819,564.94	32.011028	-103.435700	
17,100.00	90.00	180.00	10,790.00	-6,399.04	-125.62	368,806.51	819,564.94	32.010753	-103.435703	
17,200.00	90.00	180.00	10,790.00	-6,499.04	-125.62	368,706.51	819,564.94	32.010478	-103.435705	
17,300.00	90.00	180.00	10,790.00	-6,599.04	-125.62	368,606.51	819,564.94	32.010203	-103.435708	
17,400.00	90.00	180.00	10,790.00	-6,699.04	-125.62	368,506.51	819,564.94	32.009929	-103.435711	
17,500.00	90.00	180.00	10,790.00	-6,799.04	-125.62	368,406.51	819,564.94	32.009654	-103.435713	
17,600.00	90.00	180.00	10,790.00	-6,899.04	-125.62	368,306.51	819,564.94	32.009379	-103.435716	
17,700.00	90.00	180.00	10,790.00	-6,999.04	-125.62	368,206.51	819,564.94	32.009104	-103.435719	
17,800.00	90.00	180.00	10,790.00	-7,099.04	-125.62	368,106.51	819,564.94	32.008829	-103.435721	
17,900.00	90.00	180.00	10,790.00	-7,199.04	-125.62	368,006.51	819,564.94	32.008554	-103.435724	
18,000.00	90.00	180.00	10,790.00	-7,299.04	-125.62	367,906.51	819,564.94	32.008279	-103.435727	
18,100.00	90.00	180.00	10,790.00	-7,399.04	-125.62	367,806.51	819,564.94	32.008005	-103.435729	
18,200.00	90.00	180.00	10,790.00	-7,499.04	-125.62	367,706.51	819,564.94	32.007730	-103.435732	
18,300.00	90.00	180.00	10,790.00	-7,599.04	-125.62	367,606.51	819,564.94	32.007455	-103.435735	
18,400.00	90.00	180.00	10,790.00	-7,699.04	-125.62	367,506.51	819,564.94	32.007180	-103.435737	
18,500.00	90.00	180.00	10,790.00	-7,799.04	-125.62	367,406.51	819,564.94	32.006905	-103.435740	
18,600.00	90.00	180.00	10,790.00	-7,899.04	-125.62	367,306.51	819,564.94	32.006630	-103.435743	
18,700.00	90.00	180.00	10,790.00	-7,999.04	-125.62	367,206.52	819,564.94	32.006355	-103.435745	
18,800.00	90.00	180.00	10,790.00	-8,099.04	-125.62	367,106.52	819,564.94	32.006080	-103.435748	
18,900.00	90.00	180.00	10,790.00	-8,199.04	-125.62	367,006.52	819,564.94	32.005806	-103.435751	
19,000.00	90.00	180.00	10,790.00	-8,299.04	-125.62	366,906.52	819,564.94	32.005531	-103.435753	
19,100.00	90.00	180.00	10,790.00	-8,399.04	-125.62	366,806.52	819,564.94	32.005256	-103.435756	
19,200.00	90.00	180.00	10,790.00	-8,499.04	-125.62	366,706.52	819,564.94	32.004981	-103.435759	
19,300.00	90.00	180.00	10,790.00	-8,599.04	-125.62	366,606.52	819,564.94	32.004706	-103.435762	
19,400.00	90.00	180.00	10,790.00	-8,699.04	-125.62	366,506.52	819,564.94	32.004431	-103.435764	
19,500.00	90.00	180.00	10,790.00	-8,799.04	-125.62	366,406.52	819,564.94	32.004156	-103.435767	
19,600.00	90.00	180.00	10,790.00	-8,899.04	-125.62	366,306.52	819,564.94	32.003882	-103.435770	
19,700.00	90.00	180.00	10,790.00	-8,999.04	-125.62	366,206.52	819,564.94	32.003607	-103.435772	
19,800.00	90.00	180.00	10,790.00	-9,099.04	-125.62	366,106.52	819,564.94	32.003332	-103.435775	
19,900.00	90.00	180.00	10,790.00	-9,199.04	-125.62	366,006.52	819,564.94	32.003057	-103.435778	

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Mean Green 23-35 Fed Com 4H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3224.80ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3224.80ft
Site:	Sec 23-T26S-R34E	North Reference:	Grid
Well:	Mean Green 23-35 Fed Com 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,000.00	90.00	180.00	10,790.00	-9,299.04	-125.62	365,906.52	819,564.94	32.002782	-103.435780
20,100.00	90.00	180.00	10,790.00	-9,399.04	-125.62	365,806.52	819,564.94	32.002507	-103.435783
20,200.00	90.00	180.00	10,790.00	-9,499.04	-125.62	365,706.52	819,564.94	32.002232	-103.435786
20,300.00	90.00	180.00	10,790.00	-9,599.04	-125.62	365,606.52	819,564.94	32.001958	-103.435788
20,400.00	90.00	180.00	10,790.00	-9,699.04	-125.62	365,506.52	819,564.94	32.001683	-103.435791
20,500.00	90.00	180.00	10,790.00	-9,799.04	-125.62	365,406.52	819,564.94	32.001408	-103.435794
20,576.11	90.00	180.00	10,790.00	-9,875.15	-125.62	365,330.41	819,564.94	32.001199	-103.435796
Last Take Point @ 20576' MD, 330' FSL, 1133' FEL									
20,600.00	90.00	180.00	10,790.00	-9,899.04	-125.62	365,306.52	819,564.94	32.001133	-103.435796
20,700.00	90.00	180.00	10,790.00	-9,999.04	-125.62	365,206.52	819,564.94	32.000858	-103.435799
20,706.11	90.00	180.00	10,790.00	-10,005.15	-125.62	365,200.41	819,564.94	32.000841	-103.435799
PBHL; 200' FSL, 1133' FEL									

Design Targets

Target Name

hit/miss target Shape	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL - Mean Green 23-	0.00	0.00	0.00	-10,005.16	-125.62	365,200.40	819,564.94	32.000841	-103.435799
- plan misses target center by 10005.95ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
Vertical Point - Mean Gr	0.00	0.00	4,500.00	150.00	-213.00	375,355.54	819,477.56	32.028756	-103.435809
- plan misses target center by 136.87ft at 4513.43ft MD (4508.74 TVD, 101.76 N, -85.22 E)									
- Point									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,500.00	2,500.00	0.00	0.00	Begin Nudge
2,903.75	2,903.39	11.34	-9.50	EOB
5,237.71	5,231.08	142.44	-119.29	EOH
5,506.88	5,500.01	150.00	-125.62	Drop to Vertical
10,223.92	10,217.05	150.00	-125.62	KOP @ 10224' MD, 2599' FSL, 1046' FEL
10,648.13	10,603.55	0.00	-125.62	1st Take Point @ 10648' MD, 2449' FSL, 1046' FEL
11,123.92	10,790.00	-422.96	-125.62	Land Point
20,576.11	10,790.00	-9,875.15	-125.62	Last Take Point @ 20576' MD, 330' FSL, 1133' FEL
20,706.11	10,790.00	-10,005.15	-125.62	PBHL; 200' FSL, 1133' FEL

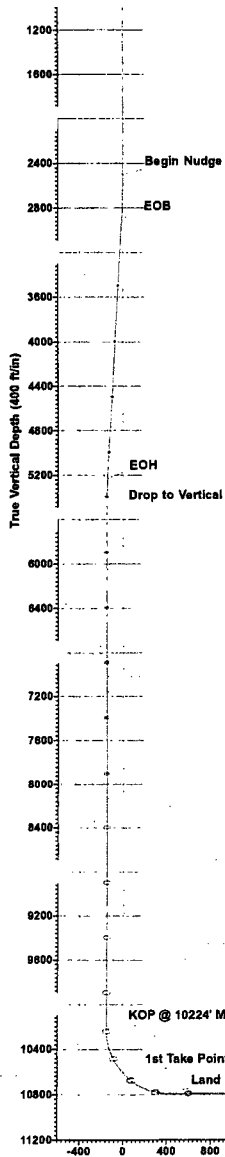
WCDSC Permian NM

WELL DETAILS: Mean Green 23-35 Fed Com 4H

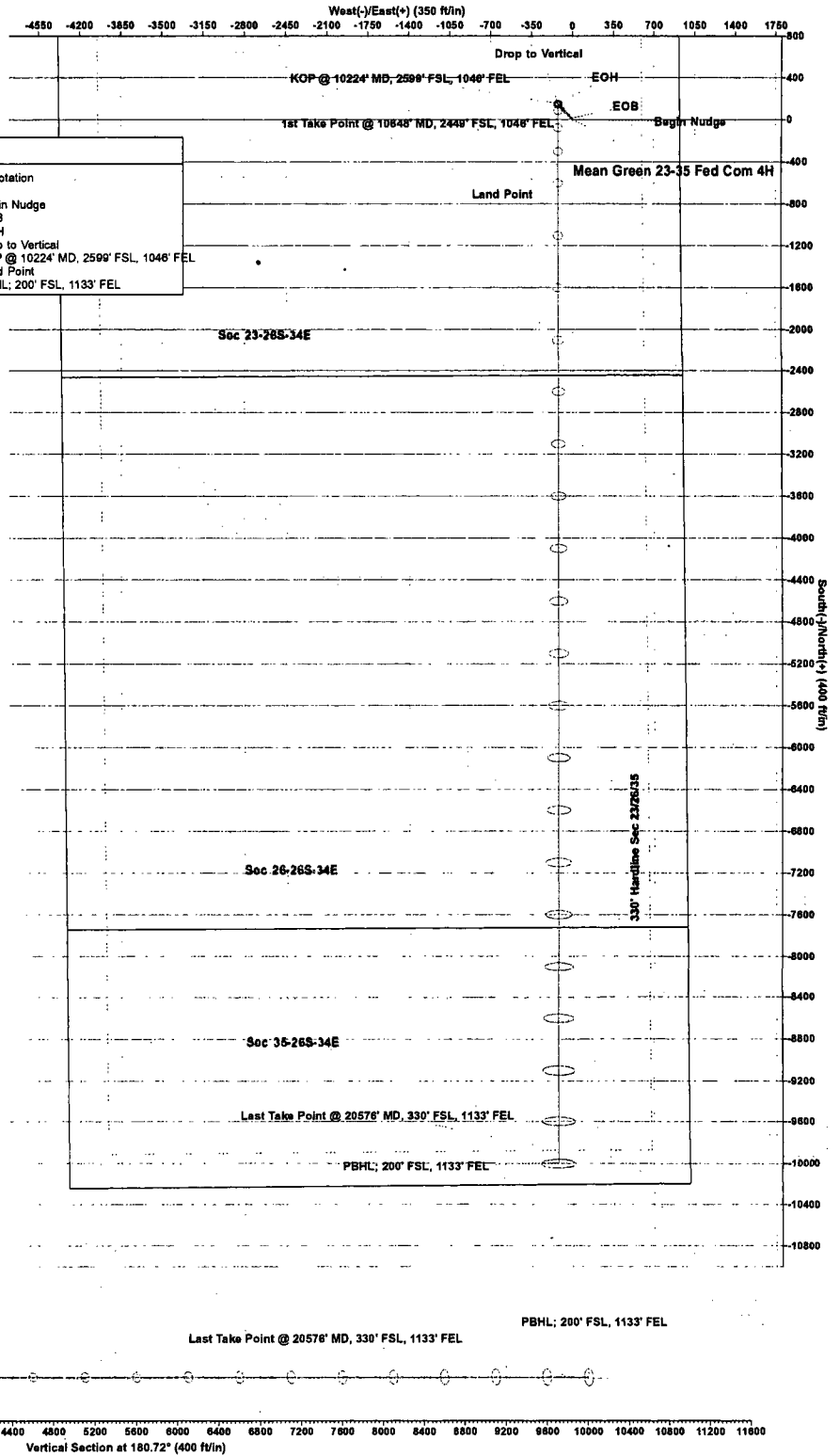
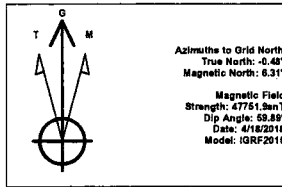
RKB @ 3224.80ft
3193.30
Northing 375205.54 Easting 819690.56 Latitude 32.028339 Longitude -103.435126

SECTION DETAILS Permit Plan 1

	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dlog	V/Sect	Annotation
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	10	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	Begin Nudge
	2003.75	4.20	320.05	2903.39	11.34	-9.50	1.04	-11.22	EOB
	5237.71	4.20	320.05	5231.07	142.44	-119.29	0.00	-140.93	EOH
5	5237.71	0.00	0.00	5500.00	150.00	-125.62	1.56	-148.41	Drop to Vertical
6	22	0.00	0.00	10217.04	150.00	-125.62	0.00	-148.41	KOP @ 10224' MD, 2599' FSL, 1046' FEL
7	11123.92	90.00	180.00	10790.00	-422.96	-125.62	10.00	424.50	Land Point
8	20706.11	60.00	180.00	10790.00	-10005.16	-125.62	0.00	10005.65	PBHL; 200' FSL, 1133' FEL



devon



WCDSC Permian NM

Lea County (NAD83 New Mexico East)

Sec 23-T26S-R34E

Mean Green 23-35 Fed Com 4H

Wellbore #1

Permit Plan 1

Anticollision Report

30 April, 2018

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Mean Green 23-35 Fed Com 4H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3224.80ft
Reference Site:	Sec 23-T26S-R34E	MD Reference:	RKB @ 3224.80ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Mean Green 23-35 Fed Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference	Permit Plan 1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method	MD Interval 100.00ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,500.00 ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Pedal Curve
Casing Method:	Not applied

Survey Tool Program	Date	4/30/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	20,706.12	Permit Plan 1 (Wellbore #1)	MWD+HDGM	OWSG MWD + HDGM

Summary						
Site Name	Reference Measure	Offset Measure	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation	Warning
Offset Well - Wellbore - Design						
Sec 23-T26S-R34E						
Mean Green 23 FED 1H - Original Hole - Actuals	9,116.31	11,647.90	682.91	591.42	7.464	CC, ES, SF
Mean Green 23 FED 1H - Original Hole - Plan 1	9,116.68	11,519.44	664.47	632.09	20.523	CC, ES, SF
Mean Green 23 FED 1H - Original Hole - T&D						Out of range
Mean Green 23-35 Fed Com 1H - Wellbore #1 - Permit PI	2,500.00	2,500.00	30.00	12.52	1.716	Minor Risk, CC
Mean Green 23-35 Fed Com 1H - Wellbore #1 - Permit PI	2,600.00	2,600.01	30.60	12.40	1.682	Minor Risk, ES, SF
Mean Green 23-35 Fed Com 2H - Wellbore #1 - Permit PI	2,500.00	2,506.50	59.99	42.47	3.425	Alert, CC
Mean Green 23-35 Fed Com 2H - Wellbore #1 - Permit PI	2,600.00	2,606.51	60.57	42.35	3.323	Alert, ES
Mean Green 23-35 Fed Com 2H - Wellbore #1 - Permit PI	2,700.00	2,706.54	62.38	43.44	3.294	Alert, SF
Mean Green 23-35 Fed Com 3H - Wellbore #1 - Permit PI	2,500.00	2,500.00	90.03	72.55	5.151	CC, ES
Mean Green 23-35 Fed Com 3H - Wellbore #1 - Permit PI	20,706.12	20,897.90	779.05	486.91	2.667	Alert, SF
Sec 26-26S-34E						
Hondo Federal 1 - Wellbore #1 - Wellbore #1						Out of range
Mean Green 26 FED 1H - Original Hole - Original Hole						Out of range
Rattlesnake Federal Unit 1 - Wellbore #1 - Wellbore #1	14,256.48	10,786.13	905.35	598.28	2.948	Alert, CC, ES
Rattlesnake Federal Unit 1 - Wellbore #1 - Wellbore #1	14,300.00	10,786.23	906.40	598.82	2.947	Alert, SF
Sec 35-T26S-R34E						
Madera 35 Fed 1H - Original Hole - Scientific						Out of range

Offset Design													Offset Site Error: 0.00 ft	
Survey Program: 149-GYRO-NS, 8618-MWD+HGRF													Offset Well Error: 0.00 ft	
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre N-S (ft)	Offset Wellbore Centre E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning		
7,800.00	7,793.13	11,657.32	9,132.56	27.75	59.56	88.33	169.94	557.07	1,482.88	1,431.95	50.94	29.111		
7,900.00	7,893.13	11,656.60	9,132.57	28.11	59.54	88.39	169.22	557.08	1,394.88	1,341.99	52.90	26.370		
8,000.00	7,993.13	11,655.89	9,132.58	28.46	59.53	88.45	168.51	557.09	1,308.61	1,253.50	55.10	23.748		
8,100.00	8,093.13	11,655.17	9,132.58	28.82	59.52	88.51	167.79	557.10	1,224.42	1,166.82	57.60	21.259		
8,200.00	8,193.13	11,654.46	9,132.59	29.18	59.51	88.57	167.07	557.11	1,142.78	1,082.37	60.41	18.919		
8,300.00	8,293.13	11,653.74	9,132.59	29.53	59.50	88.63	166.36	557.12	1,064.28	1,000.72	63.57	16.743		
8,400.00	8,393.13	11,653.02	9,132.60	29.89	59.48	88.69	165.64	557.13	989.67	922.57	67.09	14.751		
8,500.00	8,493.13	11,652.31	9,132.60	30.25	59.47	88.75	164.93	557.14	919.88	848.91	70.97	12.961		
8,600.00	8,593.13	11,651.59	9,132.61	30.60	59.46	88.81	164.21	557.15	856.11	780.97	75.14	11.393		

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

Anticollision Report

Company: WCDSC Permian NM
Project: Lea County (NAD83 New Mexico East)
Reference Site: Sec 23-T26S-R34E
Site Error: 0.00 ft
Reference Well: Mean Green 23-35 Fed Com 4H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 1

Local Co-ordinate Reference: Well Mean Green 23-35 Fed Com 4H
TVD Reference: RKB @ 3224.80ft
MD Reference: RKB @ 3224.80ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM r5000.141_Prod US
Offset TVD Reference: Offset Datum

Offset Design Sec 23-T26S-R34E - Mean Green 23 FED 1H - Original Hole - Actuals													Offset Site Error: 0.00 ft
Survey Program: 149-GYRO-NS 8818-MWD+IGRF													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
8,700.00	8,693.13	11,650.88	9,132.61	30.96	59.45	88.87	163.49	557.16	799.79	720.34	79.46	10.066	
8,800.00	8,793.13	11,650.16	9,132.62	31.32	59.44	88.93	162.78	557.18	752.60	668.96	83.85	8.997	
8,900.00	8,893.13	11,649.44	9,132.62	31.67	59.43	88.99	162.06	557.19	716.35	629.01	87.34	8.202	
9,000.00	8,993.13	11,648.73	9,132.63	32.03	59.41	89.05	161.35	557.20	692.74	602.68	90.06	7.692	
9,100.00	9,093.13	11,648.01	9,132.63	32.39	59.40	89.11	160.63	557.21	683.11	591.69	91.42	7.472	
9,116.31	9,109.43	11,647.90	9,132.63	32.45	59.40	89.12	160.51	557.21	682.91	591.42	91.49	7.464	CC, ES, SF
9,200.00	9,193.13	11,647.30	9,132.64	32.74	59.39	89.17	159.92	557.22	688.02	596.82	91.20	7.544	
9,300.00	9,293.13	11,646.58	9,132.64	33.10	59.38	89.23	159.20	557.23	707.18	617.68	89.51	7.901	
9,400.00	9,393.13	11,645.86	9,132.65	33.46	59.37	89.29	158.48	557.24	739.49	652.81	86.88	8.531	
9,500.00	9,493.13	11,645.15	9,132.65	33.82	59.36	89.35	157.77	557.25	783.31	700.13	83.19	9.416	
9,600.00	9,593.13	11,644.43	9,132.66	34.17	59.34	89.41	157.05	557.26	836.85	757.41	79.44	10.535	
9,700.00	9,693.13	11,643.72	9,132.66	34.53	59.33	89.47	156.34	557.28	898.36	822.62	75.74	11.861	
9,800.00	9,793.13	11,643.00	9,132.67	34.89	59.32	89.53	155.62	557.29	966.32	894.03	72.29	13.368	
9,900.00	9,893.13	11,642.28	9,132.68	35.24	59.31	89.59	154.90	557.30	1,039.47	970.30	69.17	15.027	
10,000.00	9,993.13	11,641.57	9,132.68	35.60	59.30	89.65	154.19	557.31	1,116.80	1,050.38	66.42	16.814	
10,100.00	10,093.13	11,640.85	9,132.69	35.96	59.28	89.71	153.47	557.32	1,197.48	1,133.45	64.03	18.702	
10,200.00	10,193.13	11,640.14	9,132.69	36.32	59.27	89.77	152.76	557.33	1,280.90	1,218.93	61.97	20.670	
10,300.00	10,292.90	11,634.50	9,132.73	36.65	59.18	-77.25	147.12	557.42	1,366.35	1,306.20	60.15	22.714	
10,400.00	10,390.37	11,612.51	9,132.89	36.95	58.82	-60.57	125.13	557.78	1,451.61	1,393.13	58.47	24.825	

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Mean Green 23-35 Fed Com 4H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3224.80ft
Reference Site:	Sec 23-T26S-R34E	MD Reference:	RKB @ 3224.80ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Mean Green 23-35 Fed Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 23-T26S-R34E - Mean Green 23 FED 1H - Original Hole - Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-GYRO													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,800.00	7,793.13	11,523.80	9,133.00	27.75	0.00	89.12	160.16	538.78	1,474.84	1,457.62	17.22	85.641		
7,900.00	7,893.13	11,523.47	9,133.00	28.11	0.00	89.15	159.83	538.79	1,386.30	1,368.34	17.96	77.190		
8,000.00	7,993.13	11,523.14	9,133.00	28.46	0.00	89.18	159.50	538.79	1,299.42	1,280.64	18.78	69.201		
8,100.00	8,093.13	11,522.81	9,133.00	28.82	0.00	89.21	159.17	538.79	1,214.56	1,194.87	19.69	61.693		
8,200.00	8,193.13	11,522.48	9,133.00	29.18	0.00	89.24	158.84	538.80	1,132.17	1,111.47	20.70	54.688		
8,300.00	8,293.13	11,522.14	9,133.00	29.53	0.00	89.27	158.51	538.80	1,052.85	1,031.01	21.84	48.216		
8,400.00	8,393.13	11,521.81	9,133.00	29.89	0.00	89.30	158.18	538.80	977.32	954.22	23.10	42.313		
8,500.00	8,493.13	11,521.48	9,133.00	30.25	0.00	89.32	157.84	538.80	906.54	882.05	24.49	37.020		
8,600.00	8,593.13	11,521.15	9,133.00	30.60	0.00	89.35	157.51	538.81	841.71	815.72	25.99	32.384		
8,700.00	8,693.13	11,520.82	9,133.01	30.96	0.00	89.38	157.18	538.81	784.31	756.74	27.57	28.453		
8,800.00	8,793.13	11,520.49	9,133.01	31.32	0.00	89.41	156.85	538.81	736.07	706.95	29.13	25.272		
8,900.00	8,893.13	11,520.15	9,133.01	31.67	0.00	89.44	156.52	538.82	698.91	668.36	30.54	22.882		
9,000.00	8,993.13	11,519.82	9,133.01	32.03	0.00	89.47	156.19	538.82	674.63	642.98	31.66	21.310		
9,100.00	9,093.13	11,519.49	9,133.01	32.39	0.00	89.50	155.85	538.82	664.68	632.36	32.32	20.567		
9,116.68	9,109.81	11,519.44	9,133.01	32.45	0.00	89.50	155.80	538.82	664.47	632.09	32.38	20.523	CC, ES, SF	
9,200.00	9,193.13	11,519.16	9,133.01	32.74	0.00	89.52	155.52	538.82	669.67	637.22	32.45	20.639		
9,300.00	9,293.13	11,518.83	9,133.01	33.10	0.00	89.55	155.19	538.83	689.29	657.22	32.07	21.491		
9,400.00	9,393.13	11,518.50	9,133.01	33.46	0.00	89.58	154.86	538.83	722.35	691.02	31.32	23.061		
9,500.00	9,493.13	11,518.16	9,133.01	33.82	0.00	89.61	154.53	538.83	767.10	736.74	30.36	25.267		
9,600.00	9,593.13	11,517.83	9,133.02	34.17	0.00	89.64	154.20	538.84	821.65	792.32	29.33	28.017		
9,700.00	9,693.13	11,517.50	9,133.02	34.53	0.00	89.67	153.86	538.84	884.18	855.85	28.33	31.209		
9,800.00	9,793.13	11,517.17	9,133.02	34.89	0.00	89.70	153.53	538.84	953.12	925.68	27.43	34.744		
9,900.00	9,893.13	11,516.84	9,133.02	35.24	0.00	89.72	153.20	538.84	1,027.18	1,000.52	26.66	38.531		
10,000.00	9,993.13	11,516.51	9,133.02	35.60	0.00	89.75	152.87	538.85	1,105.33	1,079.31	26.02	42.486		
10,100.00	10,093.13	11,516.18	9,133.02	35.96	0.00	89.78	152.54	538.85	1,186.77	1,161.27	25.50	46.540		
10,200.00	10,193.13	11,515.84	9,133.02	36.32	0.00	89.81	152.21	538.85	1,270.86	1,245.76	25.10	50.637		
10,300.00	10,292.90	11,510.47	9,133.04	36.65	0.00	-76.89	146.83	538.90	1,356.92	1,332.13	24.79	54.743		
10,400.00	10,390.37	11,488.35	9,133.11	36.95	0.00	-59.86	124.71	539.09	1,442.71	1,418.15	24.56	58.752		

Anticollision Report

Company: WCDSC Permian NM
 Project: Lea County (NAD83 New Mexico East)
 Reference Site: Sec 23-T26S-R34E
 Site Error: 0.00 ft
 Reference Well: Mean Green 23-35 Fed Com 4H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 1

Local Co-ordinate Reference
 TVD Reference: RKB @ 3224.80ft
 MD Reference: RKB @ 3224.80ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM r5000.141_Prod US
 Offset TVD Reference: Offset Datum

Offset Design														Offset Site Error: 0.00 ft	
Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 1H - Wellbore #1 - Permit Plan 1														Offset Well Error: 0.50 ft	
Survey Program: 0-MWD+HDGM															
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.00	0.00	0.00	0.00	0.50	0.50	90.22	-0.11	30.00	30.00						
100.00	100.00	100.00	100.00	0.51	0.51	90.22	-0.11	30.00	30.00	28.97	1.03	29.133			
200.00	200.00	200.00	200.00	0.69	0.69	90.22	-0.11	30.00	30.00	28.61	1.39	21.611			
300.00	300.00	300.00	300.00	0.98	0.98	90.22	-0.11	30.00	30.00	28.05	1.96	15.346			
400.00	400.00	400.00	400.00	1.30	1.30	90.22	-0.11	30.00	30.00	27.41	2.60	11.552			
500.00	500.00	500.00	500.00	1.63	1.64	90.22	-0.11	30.00	30.00	26.73	3.27	9.174			
600.00	600.00	600.00	600.00	1.98	1.98	90.22	-0.11	30.00	30.00	26.04	3.96	7.578			
700.00	700.00	700.00	700.00	2.33	2.33	90.22	-0.11	30.00	30.00	25.35	4.66	6.443			
800.00	800.00	800.00	800.00	2.68	2.68	90.22	-0.11	30.00	30.00	24.64	5.36	5.599			
900.00	900.00	900.00	900.00	3.03	3.03	90.22	-0.11	30.00	30.00	23.94	6.06	4.947	Alert		
1,000.00	1,000.00	1,000.00	1,000.00	3.39	3.39	90.22	-0.11	30.00	30.00	23.23	6.77	4.430	Alert		
1,100.00	1,100.00	1,100.00	1,100.00	3.74	3.74	90.22	-0.11	30.00	30.00	22.52	7.48	4.010	Alert		
1,200.00	1,200.00	1,200.00	1,200.00	4.10	4.10	90.22	-0.11	30.00	30.00	21.81	8.19	3.662	Alert		
1,300.00	1,300.00	1,300.00	1,300.00	4.45	4.45	90.22	-0.11	30.00	30.00	21.10	8.91	3.369	Alert		
1,400.00	1,400.00	1,400.00	1,400.00	4.81	4.81	90.22	-0.11	30.00	30.00	20.38	9.62	3.119	Alert		
1,500.00	1,500.00	1,500.00	1,500.00	5.17	5.17	90.22	-0.11	30.00	30.00	19.67	10.33	2.904	Alert		
1,600.00	1,600.00	1,600.00	1,600.00	5.52	5.52	90.22	-0.11	30.00	30.00	18.96	11.05	2.716	Alert		
1,700.00	1,700.00	1,700.00	1,700.00	5.88	5.88	90.22	-0.11	30.00	30.00	18.24	11.76	2.551	Alert		
1,800.00	1,800.00	1,800.00	1,800.00	6.24	6.24	90.22	-0.11	30.00	30.00	17.53	12.47	2.405	Minor Risk		
1,900.00	1,900.00	1,900.00	1,900.00	6.59	6.59	90.22	-0.11	30.00	30.00	16.81	13.19	2.275	Minor Risk		
2,000.00	2,000.00	2,000.00	2,000.00	6.95	6.95	90.22	-0.11	30.00	30.00	16.10	13.90	2.158	Minor Risk		
2,100.00	2,100.00	2,100.00	2,100.00	7.31	7.31	90.22	-0.11	30.00	30.00	15.38	14.62	2.052	Minor Risk		
2,200.00	2,200.00	2,200.00	2,200.00	7.67	7.67	90.22	-0.11	30.00	30.00	14.67	15.33	1.957	Minor Risk		
2,300.00	2,300.00	2,300.00	2,300.00	8.02	8.03	90.22	-0.11	30.00	30.00	13.95	16.05	1.869	Minor Risk		
2,400.00	2,400.00	2,400.00	2,400.00	8.38	8.38	90.22	-0.11	30.00	30.00	13.24	16.77	1.790	Minor Risk		
2,500.00	2,500.00	2,500.00	2,500.00	8.74	8.74	90.22	-0.11	30.00	30.00	12.52	17.48	1.716	Minor Risk, CC		
2,600.00	2,599.99	2,600.01	2,599.99	9.10	9.10	131.46	-0.11	30.00	30.60	12.40	18.19	1.682	Minor Risk, ES, SF		
2,700.00	2,699.96	2,700.04	2,699.96	9.45	9.46	135.05	-0.11	30.00	32.46	13.56	18.91	1.717	Minor Risk		
2,800.00	2,799.85	2,800.15	2,799.85	9.81	9.82	140.16	-0.11	30.00	35.82	16.20	19.62	1.826	Minor Risk		
2,900.00	2,899.65	2,900.35	2,899.65	10.16	10.17	145.84	-0.11	30.00	40.90	20.57	20.33	2.012	Minor Risk		
3,000.00	2,999.38	3,000.62	2,999.38	10.52	10.53	150.84	-0.11	30.00	47.15	26.11	21.04	2.241	Minor Risk		
3,100.00	3,099.11	3,100.89	3,099.11	10.87	10.89	154.65	-0.11	30.00	53.67	31.91	21.76	2.467	Minor Risk		
3,200.00	3,198.84	3,201.16	3,198.84	11.23	11.25	157.63	-0.11	30.00	60.37	37.90	22.47	2.687	Alert		
3,300.00	3,298.57	3,301.43	3,298.57	11.59	11.61	160.00	-0.11	30.00	67.21	44.03	23.18	2.899	Alert		
3,400.00	3,398.30	3,401.70	3,398.30	11.95	11.97	161.94	-0.11	30.00	74.14	50.24	23.90	3.102	Alert		
3,500.00	3,498.04	3,501.96	3,498.04	12.31	12.33	163.54	-0.11	30.00	81.14	56.52	24.61	3.297	Alert		
3,600.00	3,597.77	3,602.23	3,597.77	12.67	12.69	164.89	-0.11	30.00	88.19	62.86	25.33	3.482	Alert		
3,700.00	3,697.50	3,702.50	3,697.50	13.03	13.05	166.04	-0.11	30.00	95.28	69.24	26.04	3.659	Alert		
3,800.00	3,797.23	3,797.23	3,797.23	13.39	13.39	167.03	-0.11	30.00	102.41	75.67	26.74	3.830	Alert		
3,900.00	3,896.96	3,898.52	3,898.52	13.76	13.75	167.65	0.69	29.73	108.87	81.41	27.46	3.965	Alert		
4,000.00	3,996.69	4,000.04	4,000.00	14.12	14.11	167.71	3.20	28.90	113.87	85.69	28.18	4.041	Alert		
4,100.00	4,096.42	4,101.67	4,101.53	14.48	14.47	167.28	7.42	27.49	117.39	88.51	28.89	4.064	Alert		
4,200.00	4,196.15	4,203.36	4,203.03	14.85	14.84	166.38	13.35	25.51	119.47	89.88	29.59	4.037	Alert		
4,300.00	4,295.89	4,304.55	4,303.90	15.21	15.20	165.04	20.88	23.01	120.21	89.91	30.30	3.967	Alert		
4,400.00	4,395.62	4,404.50	4,403.51	15.57	15.56	163.59	28.73	20.39	120.66	89.64	31.02	3.890	Alert		
4,500.00	4,495.35	4,504.45	4,503.12	15.94	15.91	162.17	36.59	17.77	121.18	89.45	31.73	3.819	Alert		
4,600.00	4,595.08	4,604.41	4,602.73	16.30	16.27	160.75	44.44	15.15	121.78	89.33	32.45	3.753	Alert		
4,700.00	4,694.81	4,704.36	4,702.34	16.67	16.63	159.35	52.30	12.53	122.46	89.29	33.17	3.692	Alert		
4,800.00	4,794.54	4,804.31	4,801.95	17.03	16.99	157.96	60.16	9.91	123.21	89.32	33.89	3.636	Alert		
4,900.00	4,894.27	4,904.27	4,901.56	17.40	17.35	156.60	68.01	7.29	124.02	89.41	34.61	3.583	Alert		
5,000.00	4,994.01	5,004.22	5,001.17	17.76	17.71	155.25	75.87	4.67	124.91	89.58	35.33	3.535	Alert		

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Lea County (NAD83 New Mexico East)
 Reference Site: Sec 23-T26S-R34E
 Site Error: 0.00 ft
 Reference Well: Mean Green 23-35 Fed Com 4H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 1

Local Co-ordinate Reference: Well Mean Green 23-35 Fed Com 4H
 TVD Reference: RKB @ 3224.80ft
 MD Reference: RKB @ 3224.80ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM r5000.141_Prod US
 Offset TVD Reference: Offset Datum

Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 1H - Wellbore #1 - Permit Plan 1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	5,093.74	5,104.17	5,100.78	18.13	18.07	153.92	83.73	2.06	125.87	89.81	36.05	3.491	Alert
5,200.00	5,193.47	5,204.12	5,200.39	18.50	18.43	152.61	91.58	-0.56	126.89	90.11	36.78	3.450	Alert
5,300.00	5,293.23	5,304.07	5,299.99	18.86	18.80	151.21	99.44	-3.18	127.51	90.01	37.50	3.400	Alert
5,400.00	5,393.14	5,403.96	5,399.54	19.22	19.16	149.24	107.29	-5.80	126.03	87.81	38.22	3.297	Alert
5,500.00	5,493.13	5,503.72	5,498.96	19.58	19.52	146.51	115.13	-8.41	122.42	83.47	38.95	3.143	Alert
5,600.00	5,593.13	5,603.38	5,598.27	19.93	19.88	103.28	122.96	-11.02	117.86	78.18	39.67	2.971	Alert
5,700.00	5,693.13	5,703.04	5,697.58	20.29	20.24	99.73	130.80	-13.63	113.71	73.31	40.40	2.815	Alert
5,800.00	5,793.13	5,802.69	5,796.90	20.64	20.61	95.94	138.63	-16.25	110.03	68.90	41.13	2.675	Alert
5,900.00	5,893.13	5,902.35	5,896.21	21.00	20.97	91.90	146.46	-18.86	106.87	65.01	41.86	2.553	Alert
6,000.00	5,993.13	6,002.01	5,995.52	21.35	21.33	87.64	154.29	-21.47	104.27	61.68	42.59	2.448	Minor Risk
6,100.00	6,093.13	6,101.66	6,094.84	21.71	21.70	83.19	162.13	-24.08	102.28	58.95	43.33	2.361	Minor Risk
6,200.00	6,193.13	6,201.32	6,194.15	22.06	22.06	78.59	169.96	-26.69	100.93	56.87	44.06	2.291	Minor Risk
6,300.00	6,293.13	6,300.97	6,293.47	22.42	22.43	73.90	177.79	-29.30	100.25	55.46	44.79	2.238	Minor Risk
6,349.57	6,342.69	6,350.37	6,342.69	22.59	22.61	71.57	181.68	-30.59	100.17	55.01	45.16	2.218	Minor Risk
6,400.00	6,393.13	6,400.63	6,392.78	22.77	22.79	69.18	185.63	-31.91	100.25	54.73	45.52	2.202	Minor Risk
6,500.00	6,493.13	6,500.29	6,492.09	23.13	23.16	64.50	193.46	-34.52	100.94	54.69	46.25	2.182	Minor Risk
6,600.00	6,593.13	6,600.06	6,591.41	23.48	23.52	59.90	201.29	-37.13	102.29	55.31	46.98	2.177	Minor Risk
6,700.00	6,693.13	6,700.40	6,690.72	23.84	23.89	55.45	209.12	-39.74	104.29	56.58	47.71	2.186	Minor Risk
6,800.00	6,793.13	6,799.26	6,790.03	24.19	24.25	51.20	216.96	-42.35	106.89	58.47	48.42	2.207	Minor Risk
6,900.00	6,893.13	6,901.09	6,889.35	24.55	24.63	47.16	224.79	-44.97	110.06	60.91	49.15	2.239	Minor Risk
7,000.00	6,993.13	7,001.43	6,988.66	24.90	24.99	43.37	232.62	-47.58	113.74	63.87	49.87	2.281	Minor Risk
7,100.00	7,093.13	7,101.78	7,087.97	25.26	25.36	39.83	240.46	-50.19	117.89	67.31	50.58	2.331	Minor Risk
7,200.00	7,193.13	7,202.12	7,187.29	25.62	25.73	36.53	248.29	-52.80	122.46	71.17	51.30	2.387	Minor Risk
7,300.00	7,293.13	7,302.46	7,286.80	25.97	26.10	33.49	256.12	-55.41	127.41	75.40	52.01	2.450	Minor Risk
7,400.00	7,393.13	7,402.81	7,385.91	26.33	26.47	30.68	263.95	-58.02	132.69	79.97	52.72	2.517	Alert
7,500.00	7,493.13	7,503.15	7,485.23	26.68	26.84	28.09	271.79	-60.63	138.27	84.83	53.44	2.587	Alert
7,600.00	7,593.13	7,603.50	7,584.54	27.04	27.21	25.70	279.62	-63.24	144.10	89.95	54.15	2.661	Alert
7,700.00	7,693.13	7,696.17	7,683.87	27.40	27.55	23.50	287.45	-65.85	150.17	95.34	54.83	2.739	Alert
7,800.00	7,793.13	7,799.04	7,786.48	27.75	27.93	21.74	294.22	-68.11	155.41	99.82	55.59	2.796	Alert
7,900.00	7,893.13	7,902.22	7,889.57	28.11	28.30	20.72	298.37	-69.49	158.67	102.35	56.32	2.817	Alert
8,000.00	7,993.13	8,005.56	7,992.89	28.46	28.67	20.36	299.88	-70.00	159.87	102.83	57.04	2.803	Alert
8,100.00	8,093.13	8,105.79	8,093.13	28.82	29.02	20.36	299.89	-70.00	159.87	102.13	57.75	2.768	Alert
8,200.00	8,193.13	8,205.79	8,193.13	29.18	29.38	20.36	299.89	-70.00	159.87	101.41	58.46	2.735	Alert
8,300.00	8,293.13	8,305.79	8,293.13	29.53	29.73	20.36	299.89	-70.00	159.87	100.70	59.17	2.702	Alert
8,400.00	8,393.13	8,405.79	8,393.13	29.89	30.09	20.36	299.89	-70.00	159.87	99.99	59.89	2.670	Alert
8,500.00	8,493.13	8,505.79	8,493.13	30.25	30.44	20.36	299.89	-70.00	159.87	99.28	60.60	2.638	Alert
8,600.00	8,593.13	8,605.79	8,593.13	30.60	30.80	20.36	299.89	-70.00	159.87	98.56	61.31	2.608	Alert
8,700.00	8,693.13	8,705.79	8,693.13	30.96	31.15	20.36	299.89	-70.00	159.87	97.85	62.02	2.578	Alert
8,800.00	8,793.13	8,805.79	8,793.13	31.32	31.50	20.36	299.89	-70.00	159.87	97.14	62.74	2.548	Alert
8,900.00	8,893.13	8,905.79	8,893.13	31.67	31.86	20.36	299.89	-70.00	159.87	96.42	63.45	2.520	Alert
9,000.00	8,993.13	9,005.79	8,993.13	32.03	32.21	20.36	299.89	-70.00	159.87	95.71	64.16	2.492	Minor Risk
9,100.00	9,093.13	9,105.79	9,093.13	32.39	32.57	20.36	299.89	-70.00	159.87	95.00	64.88	2.464	Minor Risk
9,200.00	9,193.13	9,205.79	9,193.13	32.74	32.92	20.36	299.89	-70.00	159.87	94.28	65.59	2.437	Minor Risk
9,300.00	9,293.13	9,305.79	9,293.13	33.10	33.28	20.36	299.89	-70.00	159.87	93.57	66.30	2.411	Minor Risk
9,400.00	9,393.13	9,405.79	9,393.13	33.46	33.64	20.36	299.89	-70.00	159.87	92.86	67.02	2.386	Minor Risk
9,500.00	9,493.13	9,505.79	9,493.13	33.82	33.99	20.36	299.89	-70.00	159.87	92.14	67.73	2.360	Minor Risk
9,600.00	9,593.13	9,605.79	9,593.13	34.17	34.35	20.36	299.89	-70.00	159.87	91.43	68.44	2.336	Minor Risk
9,700.00	9,693.13	9,705.79	9,693.13	34.53	34.70	20.36	299.89	-70.00	159.87	90.72	69.16	2.312	Minor Risk
9,800.00	9,793.13	9,805.79	9,793.13	34.89	35.06	20.36	299.89	-70.00	159.87	90.00	69.87	2.288	Minor Risk
9,900.00	9,893.13	9,905.79	9,893.13	35.24	35.41	20.36	299.89	-70.00	159.87	89.29	70.59	2.265	Minor Risk
10,000.00	9,993.13	10,005.79	9,993.13	35.60	35.77	20.36	299.89	-70.00	159.87	88.57	71.30	2.242	Minor Risk

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Mean Green 23-35 Fed Com 4H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3224.80ft
Reference Site:	Sec 23-T26S-R34E	MD Reference:	RKB @ 3224.80ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Mean Green 23-35 Fed Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 1H - Wellbore #1 - Permit Plan 1													Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft	
Reference		Offset		Semi Major Axis		Distance								
Measured Depth Depth (ft)	Vertical Depth (ft)	Measured Depth Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,100.00	10,093.13	10,105.79	10,093.13	35.96	36.12	20.36	299.89	-70.00	159.87	87.86	72.01	2.220	Minor Risk	
10,200.00	10,193.13	10,205.79	10,193.13	36.32	36.48	20.36	299.89	-70.00	159.87	87.15	72.73	2.198	Minor Risk	
10,300.00	10,292.90	10,305.57	10,292.90	36.65	36.83	-160.09	299.89	-70.00	164.61	91.20	73.41	2.242	Minor Risk	
10,400.00	10,390.37	10,403.03	10,390.37	36.95	37.18	-161.73	299.89	-70.00	165.28	111.22	74.06	2.502	Alert	
10,500.00	10,482.56	10,504.77	10,482.56	37.22	37.54	-163.73	299.89	-70.00	222.20	147.51	74.69	2.975	Alert	
10,600.00	10,566.70	10,579.36	10,566.70	37.46	37.81	-165.37	299.89	-70.00	274.64	199.46	75.18	3.653	Alert	
10,700.00	10,640.20	10,652.87	10,640.20	37.66	38.07	-166.23	299.89	-70.00	341.12	265.51	75.62	4.511	Alert	
10,800.00	10,700.85	10,713.52	10,700.85	37.89	38.29	-165.98	299.89	-70.00	419.61	343.65	75.97	5.524		
10,900.00	10,746.80	10,759.47	10,746.80	38.12	38.45	-163.86	299.89	-70.00	507.64	431.43	76.21	6.661		
11,000.00	10,776.65	10,789.32	10,776.65	38.36	38.56	-156.63	299.89	-70.00	602.46	526.10	76.36	7.889		
11,100.00	10,789.50	10,802.17	10,789.50	38.59	38.60	-117.67	299.89	-70.00	701.14	624.72	76.43	9.174		
11,200.00	10,790.00	10,802.67	10,790.00	38.84	38.60	-90.00	299.89	-70.00	800.86	724.43	76.43	10.478		
11,300.00	10,790.00	10,802.67	10,790.00	39.14	38.60	-90.00	299.89	-70.00	900.65	824.21	76.44	11.783		
11,400.00	10,790.00	10,802.67	10,790.00	39.49	38.60	-90.00	299.89	-70.00	1,000.48	924.03	76.44	13.088		
11,500.00	10,790.00	10,802.67	10,790.00	39.89	38.60	-90.00	299.89	-70.00	1,100.33	1,023.88	76.45	14.392		
11,600.00	10,790.00	10,802.67	10,790.00	40.34	38.60	-90.00	299.89	-70.00	1,200.22	1,123.76	76.46	15.697		
11,700.00	10,790.00	10,802.67	10,790.00	40.84	38.60	-90.00	299.89	-70.00	1,300.12	1,223.65	76.47	17.001		
11,800.00	10,790.00	10,802.67	10,790.00	41.38	38.60	-90.00	299.89	-70.00	1,400.03	1,323.55	76.49	18.305		
11,900.00	10,790.00	10,802.67	10,790.00	41.96	38.60	-90.00	299.89	-70.00	1,499.96	1,423.46	76.50	19.608		

Anticollision Report

Company: WCDSC Permian NM
 Project: Lea County (NAD83 New Mexico East)
 Reference Site: Sec 23-T26S-R34E
 Site Error: 0.00 ft
 Reference Well: Mean Green 23-35 Fed Com 4H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 1

Local Co-ordinate Reference
 TVD Reference: RKB @ 3224.80ft
 MD Reference: RKB @ 3224.80ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM r5000.141_Prod US
 Offset TVD Reference: Offset Datum

Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 2H - Wellbore #1 - Permit Plan 2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
0.00	0.00	6.50	-6.50	0.50	0.50	90.07	-0.07	59.99	59.99				
100.00	100.00	106.50	93.50	0.51	0.52	90.07	-0.07	59.99	59.99	58.95	1.04	57.727	
200.00	200.00	206.50	193.50	0.89	0.72	90.07	-0.07	59.99	59.99	58.57	1.41	42.465	
300.00	300.00	306.50	293.50	0.88	1.01	90.07	-0.07	59.99	59.99	58.00	1.98	30.223	
400.00	400.00	406.50	393.50	1.30	1.33	90.07	-0.07	59.99	59.99	57.36	2.63	22.818	
500.00	500.00	506.50	493.50	1.63	1.67	90.07	-0.07	59.99	59.99	56.68	3.30	18.160	
600.00	600.00	606.50	593.50	1.98	2.01	90.07	-0.07	59.99	59.99	55.99	3.99	15.025	
700.00	700.00	706.50	693.50	2.33	2.36	90.07	-0.07	59.99	59.99	55.30	4.69	12.790	
800.00	800.00	806.50	793.50	2.68	2.71	90.07	-0.07	59.99	59.99	54.59	5.39	11.124	
900.00	900.00	906.50	893.50	3.03	3.07	90.07	-0.07	59.99	59.99	53.89	6.10	9.836	
1,000.00	1,000.00	1,006.50	993.50	3.39	3.42	90.07	-0.07	59.99	59.99	53.18	6.81	8.813	
1,100.00	1,100.00	1,106.50	1,093.50	3.74	3.78	90.07	-0.07	59.99	59.99	52.47	7.52	7.980	
1,200.00	1,200.00	1,206.50	1,193.50	4.10	4.13	90.07	-0.07	59.99	59.99	51.76	8.23	7.291	
1,300.00	1,300.00	1,306.50	1,293.50	4.45	4.49	90.07	-0.07	59.99	59.99	51.05	8.94	6.710	
1,400.00	1,400.00	1,406.50	1,393.50	4.81	4.84	90.07	-0.07	59.99	59.99	50.33	9.65	6.215	
1,500.00	1,500.00	1,506.50	1,493.50	5.17	5.20	90.07	-0.07	59.99	59.99	49.62	10.37	5.787	
1,600.00	1,600.00	1,606.50	1,593.50	5.52	5.56	90.07	-0.07	59.99	59.99	48.91	11.08	5.414	
1,700.00	1,700.00	1,706.50	1,693.50	5.88	5.91	90.07	-0.07	59.99	59.99	48.19	11.79	5.086	
1,800.00	1,800.00	1,806.50	1,793.50	6.24	6.27	90.07	-0.07	59.99	59.99	47.48	12.51	4.796	Alert
1,900.00	1,900.00	1,906.50	1,893.50	6.59	6.63	90.07	-0.07	59.99	59.99	46.76	13.22	4.536	Alert
2,000.00	2,000.00	2,006.50	1,993.50	6.95	6.99	90.07	-0.07	59.99	59.99	46.05	13.94	4.304	Alert
2,100.00	2,100.00	2,106.50	2,093.50	7.31	7.34	90.07	-0.07	59.99	59.99	45.33	14.65	4.094	Alert
2,200.00	2,200.00	2,206.50	2,193.50	7.67	7.70	90.07	-0.07	59.99	59.99	44.62	15.37	3.903	Alert
2,300.00	2,300.00	2,306.50	2,293.50	8.02	8.06	90.07	-0.07	59.99	59.99	43.90	16.08	3.730	Alert
2,400.00	2,400.00	2,406.50	2,393.50	8.38	8.42	90.07	-0.07	59.99	59.99	43.19	16.80	3.571	Alert
2,500.00	2,500.00	2,506.50	2,493.50	8.74	8.78	90.07	-0.07	59.99	59.99	42.47	17.52	3.425	Alert, CC
2,600.00	2,599.99	2,606.51	2,593.49	9.10	9.13	130.67	-0.07	59.99	60.57	42.35	18.23	3.323	Alert, ES
2,700.00	2,699.96	2,706.54	2,693.46	9.45	9.49	132.55	-0.07	59.99	62.38	43.44	18.94	3.294	Alert, SF
2,800.00	2,799.85	2,793.35	2,793.35	9.81	9.80	135.45	-0.07	59.99	65.54	45.94	19.61	3.343	Alert
2,900.00	2,899.65	2,892.29	2,892.29	10.16	10.15	138.63	0.32	60.62	70.78	50.47	20.31	3.485	Alert
3,000.00	2,999.38	2,991.01	2,990.98	10.52	10.50	140.97	1.61	62.69	78.22	57.21	21.00	3.724	Alert
3,100.00	3,099.11	3,089.59	3,089.47	10.87	10.84	142.11	3.80	66.19	86.98	65.29	21.69	4.010	Alert
3,200.00	3,198.84	3,188.19	3,187.89	11.23	11.19	142.34	6.88	71.11	96.97	74.59	22.38	4.332	Alert
3,300.00	3,298.57	3,287.65	3,287.14	11.59	11.54	142.32	10.27	76.54	107.36	84.27	23.09	4.650	Alert
3,400.00	3,398.30	3,387.11	3,386.40	11.95	11.90	142.30	13.66	81.97	117.74	93.95	23.79	4.949	Alert
3,500.00	3,498.04	3,486.56	3,485.65	12.31	12.25	142.29	17.06	87.40	128.13	103.63	24.50	5.230	
3,600.00	3,597.77	3,586.02	3,584.90	12.67	12.60	142.27	20.45	92.83	138.51	113.31	25.21	5.495	
3,700.00	3,597.50	3,585.48	3,584.16	13.03	12.96	142.26	23.84	98.26	148.90	122.99	25.91	5.746	
3,800.00	3,797.23	3,784.94	3,783.41	13.39	13.31	142.25	27.24	103.68	159.29	132.66	26.62	5.983	
3,900.00	3,896.96	3,884.40	3,882.66	13.76	13.67	142.25	30.63	109.11	169.67	142.34	27.33	6.208	
4,000.00	3,996.69	3,983.86	3,981.92	14.12	14.02	142.24	34.03	114.54	180.06	152.01	28.04	6.421	
4,100.00	4,096.42	4,083.32	4,081.17	14.48	14.38	142.23	37.42	119.97	190.44	161.69	28.75	6.623	
4,200.00	4,196.15	4,182.78	4,180.42	14.85	14.74	142.23	40.81	125.40	200.83	171.36	29.46	6.816	
4,300.00	4,295.89	4,282.24	4,279.67	15.21	15.09	142.22	44.21	130.83	211.21	181.04	30.18	6.999	
4,400.00	4,395.62	4,381.70	4,378.93	15.57	15.45	142.22	47.60	136.26	221.60	190.71	30.89	7.174	
4,500.00	4,495.35	4,481.16	4,478.18	15.94	15.81	142.21	50.99	141.69	231.98	200.38	31.60	7.341	
4,600.00	4,595.08	4,580.62	4,577.43	16.30	16.17	142.21	54.39	147.12	242.37	210.05	32.32	7.500	
4,700.00	4,694.81	4,680.08	4,676.69	16.67	16.53	142.21	57.78	152.55	252.75	219.72	33.03	7.652	
4,800.00	4,794.54	4,779.53	4,775.94	17.03	16.88	142.20	61.17	157.98	263.14	229.39	33.75	7.798	
4,900.00	4,894.27	4,878.99	4,875.19	17.40	17.24	142.20	64.57	163.41	273.53	239.06	34.46	7.937	
5,000.00	4,994.01	4,978.45	4,974.44	17.76	17.60	142.20	67.96	168.84	283.91	248.73	35.18	8.071	

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Mean Green 23-35 Fed Com 4H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3224.80ft
Reference Site:	Sec 23-T26S-R34E	MD Reference:	RKB @ 3224.80ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Mean Green 23-35 Fed Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 2H - Wellbore #1 - Permit Plan 2														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
5,100.00	5,093.74	5,077.91	5,073.70	18.13	17.96	142.20	71.35	174.27	294.30	258.40	35.89	8.199			
5,200.00	5,193.47	5,177.37	5,172.95	18.50	18.32	142.19	74.75	179.70	304.68	268.07	36.61	8.322			
5,300.00	5,293.23	5,278.87	5,272.24	18.86	18.68	142.19	78.14	185.13	314.65	277.33	37.33	8.430			
5,400.00	5,393.14	5,376.53	5,371.70	19.22	19.05	141.93	81.54	190.57	322.64	284.60	38.04	8.481			
5,500.00	5,493.13	5,476.30	5,471.25	19.58	19.41	141.38	84.95	196.02	328.51	289.75	38.76	8.476			
5,600.00	5,593.13	5,576.09	5,570.84	19.93	19.77	100.67	88.35	201.47	333.22	293.75	39.47	8.443			
5,700.00	5,693.13	5,675.88	5,670.43	20.29	20.13	99.93	91.76	206.91	337.99	297.80	40.18	8.411			
5,800.00	5,793.13	5,775.67	5,770.01	20.64	20.49	99.22	95.16	212.36	342.81	301.91	40.90	8.382			
5,900.00	5,893.13	5,875.47	5,869.60	21.00	20.86	98.52	98.57	217.81	347.68	306.07	41.61	8.356			
6,000.00	5,993.13	5,975.26	5,969.18	21.35	21.22	97.84	101.97	223.26	352.60	310.28	42.32	8.331			
6,100.00	6,093.13	6,075.05	6,068.77	21.71	21.58	97.18	105.38	228.71	357.57	314.53	43.04	8.309			
6,200.00	6,193.13	6,174.84	6,168.35	22.06	21.95	96.54	108.78	234.15	362.59	318.84	43.75	8.288			
6,300.00	6,293.13	6,274.64	6,267.94	22.42	22.31	95.91	112.19	239.60	367.65	323.18	44.46	8.268			
6,400.00	6,393.13	6,374.43	6,367.52	22.77	22.67	95.30	115.59	245.05	372.75	327.57	45.18	8.251			
6,500.00	6,493.13	6,474.22	6,467.11	23.13	23.04	94.71	119.00	250.50	377.90	332.00	45.89	8.234			
6,600.00	6,593.13	6,574.01	6,566.70	23.48	23.40	94.14	122.40	255.95	383.08	336.47	46.61	8.219			
6,700.00	6,693.13	6,673.81	6,666.28	23.84	23.76	93.58	125.81	261.39	388.30	340.98	47.32	8.206			
6,800.00	6,793.13	6,773.60	6,765.87	24.19	24.13	93.03	129.21	266.84	393.56	345.52	48.04	8.193			
6,900.00	6,893.13	6,873.39	6,865.45	24.55	24.49	92.50	132.62	272.29	398.85	350.10	48.75	8.181			
7,000.00	6,993.13	6,973.18	6,965.04	24.90	24.85	91.98	136.02	277.74	404.18	354.71	49.47	8.171			
7,100.00	7,093.13	7,072.98	7,064.62	25.26	25.22	91.48	139.43	283.18	409.53	359.35	50.18	8.161			
7,200.00	7,193.13	7,172.77	7,164.21	25.62	25.58	90.99	142.83	288.63	414.92	364.02	50.90	8.152			
7,300.00	7,293.13	7,272.56	7,263.79	25.97	25.95	90.51	146.24	294.08	420.34	368.73	51.61	8.144			
7,400.00	7,393.13	7,372.35	7,363.38	26.33	26.31	90.05	149.64	299.53	425.78	373.46	52.33	8.137			
7,500.00	7,493.13	7,472.15	7,462.97	26.68	26.68	89.59	153.04	304.98	431.26	378.22	53.04	8.131			
7,600.00	7,593.13	7,571.94	7,562.55	27.04	27.04	89.15	156.45	310.42	436.76	383.00	53.76	8.125			
7,700.00	7,693.13	7,671.73	7,662.14	27.40	27.40	88.72	159.85	315.87	442.28	387.81	54.47	8.119			
7,800.00	7,793.13	7,771.52	7,761.72	27.75	27.77	88.30	163.26	321.32	447.83	392.64	55.19	8.115			
7,900.00	7,893.13	7,871.32	7,861.31	28.11	28.13	87.89	166.66	326.77	453.40	397.50	55.90	8.111			
8,000.00	7,993.13	7,971.11	7,960.89	28.46	28.50	87.49	170.07	332.22	459.00	402.38	56.62	8.107			
8,100.00	8,093.13	8,070.90	8,060.48	28.82	28.86	87.10	173.47	337.66	464.61	407.28	57.33	8.104			
8,200.00	8,193.13	8,170.69	8,160.06	29.18	29.23	86.72	176.88	343.11	470.25	412.20	58.05	8.101			
8,300.00	8,293.13	8,270.49	8,259.65	29.53	29.59	86.35	180.28	348.56	475.91	417.15	58.76	8.099			
8,400.00	8,393.13	8,370.28	8,359.24	29.89	29.96	85.98	183.69	354.01	481.59	422.11	59.48	8.097			
8,500.00	8,493.13	8,470.07	8,458.82	30.25	30.32	85.63	187.09	359.45	487.28	427.09	60.20	8.095			
8,600.00	8,593.13	8,569.86	8,558.41	30.60	30.69	85.28	190.50	364.90	493.00	432.09	60.91	8.094			
8,700.00	8,693.13	8,669.66	8,657.99	30.96	31.05	84.94	193.90	370.35	498.73	437.10	61.63	8.093			
8,800.00	8,793.13	8,769.45	8,757.58	31.32	31.42	84.61	197.31	375.80	504.48	442.14	62.34	8.092			
8,900.00	8,893.13	8,869.24	8,857.16	31.67	31.78	84.29	200.71	381.25	510.25	447.19	63.06	8.091			
9,000.00	8,993.13	8,969.03	8,956.75	32.03	32.15	83.97	204.12	386.69	516.03	452.25	63.78	8.091			
9,100.00	9,093.13	9,068.83	9,056.33	32.39	32.51	83.66	207.52	392.14	521.83	457.33	64.49	8.091			
9,200.00	9,193.13	9,168.62	9,155.92	32.74	32.88	83.36	210.93	397.59	527.64	462.43	65.21	8.092			
9,300.00	9,293.13	9,268.41	9,255.51	33.10	33.25	83.06	214.33	403.04	533.47	467.54	65.92	8.092			
9,400.00	9,393.13	9,368.21	9,355.09	33.46	33.61	82.77	217.74	408.48	539.31	472.67	66.64	8.093			
9,500.00	9,493.13	9,468.00	9,454.68	33.82	33.98	82.49	221.14	413.93	545.16	477.80	67.36	8.094			
9,600.00	9,593.13	9,567.79	9,554.26	34.17	34.34	82.21	224.55	419.38	551.03	482.95	68.07	8.095			
9,700.00	9,693.13	9,667.58	9,653.85	34.53	34.71	81.94	227.95	424.83	556.91	488.12	68.79	8.096			
9,800.00	9,793.13	9,767.38	9,753.43	34.89	35.07	81.67	231.36	430.28	562.80	493.29	69.51	8.097			
9,900.00	9,893.13	9,867.17	9,853.02	35.24	35.44	81.41	234.76	435.72	568.70	498.48	70.22	8.099			
10,000.00	9,993.13	9,966.96	9,952.60	35.60	35.80	81.16	238.17	441.17	574.62	503.68	70.94	8.100			
10,100.00	10,093.13	10,066.75	10,052.19	35.96	36.17	80.91	241.57	446.62	580.54	508.89	71.66	8.102			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Mean Green 23-35 Fed Com 4H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3224.80ft
Reference Site:	Sec 23-T26S-R34E	MD Reference:	RKB @ 3224.80ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Mean Green 23-35 Fed Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 2H - Wellbore #1 - Permit Plan 2													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toothface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(")	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
10,200.00	10,193.13	10,166.55	10,151.78	36.32	36.54	80.66	244.98	452.07	586.48	514.11	72.37	8.104		
10,300.00	10,292.90	10,265.94	10,250.97	36.65	36.90	-99.52	248.37	457.49	593.27	520.21	73.08	8.120		
10,400.00	10,390.37	10,362.46	10,347.29	36.95	37.25	-100.72	251.66	462.76	603.36	529.66	73.70	8.186		
10,500.00	10,482.56	10,453.16	10,437.79	37.22	37.59	-102.63	254.76	467.71	618.39	544.09	74.30	8.322		
10,600.00	10,566.70	10,535.28	10,519.74	37.46	37.89	-104.52	257.56	472.20	640.61	565.76	74.85	8.559		
10,700.00	10,640.20	10,606.33	10,590.64	37.66	38.15	-105.62	259.98	476.08	672.23	596.90	75.34	8.923		
10,800.00	10,700.85	10,664.14	10,648.34	37.89	38.36	-105.14	261.96	479.23	714.72	638.98	75.75	9.436		
10,900.00	10,746.80	10,706.97	10,691.08	38.12	38.52	-102.34	263.42	481.57	768.27	692.20	76.07	10.099		
11,000.00	10,776.65	10,733.51	10,717.56	38.36	38.61	-96.54	264.32	483.02	831.67	755.37	76.30	10.901		
11,100.00	10,789.50	10,742.95	10,726.98	38.59	38.65	-87.34	264.64	483.53	902.61	826.19	76.42	11.811		
11,200.00	10,790.00	10,740.04	10,724.08	38.84	38.64	-84.43	264.54	483.38	978.50	902.03	76.47	12.795		
11,300.00	10,790.00	10,736.62	10,720.67	39.14	38.62	-84.11	264.43	483.19	1,058.38	981.86	76.53	13.830		
11,400.00	10,790.00	10,733.21	10,717.27	39.49	38.61	-83.79	264.31	483.00	1,141.43	1,064.85	76.58	14.906		
11,500.00	10,790.00	10,729.80	10,713.86	39.89	38.60	-83.47	264.20	482.82	1,227.00	1,150.37	76.62	16.013		
11,600.00	10,790.00	10,726.39	10,710.46	40.34	38.59	-83.15	264.08	482.63	1,314.59	1,237.93	76.67	17.147		
11,700.00	10,790.00	10,722.98	10,707.05	40.84	38.57	-82.83	263.96	482.44	1,403.84	1,327.13	76.71	18.301		
11,800.00	10,790.00	10,719.56	10,703.65	41.38	38.56	-82.52	263.85	482.26	1,494.44	1,417.70	76.75	19.472		

Anticollision Report

Company: WCDSC Permian NM
 Project: Lea County (NAD83 New Mexico East)
 Reference Site: Sec 23-T26S-R34E
 Site Error: 0.00 ft
 Reference Well: Mean Green 23-35 Fed Com 4H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 1

Local Co-ordinate Reference: Well Mean Green 23-35 Fed Com 4H
 TVD Reference: RKB @ 3224.80ft
 MD Reference: RKB @ 3224.80ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM r5000.141_Prod US
 Offset TVD Reference: Offset Datum

Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 3H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.50 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.50	0.50	89.89	0.18	90.03	90.03				
100.00	100.00	100.00	100.00	0.51	0.51	89.89	0.18	90.03	90.03	89.00	1.03	87.458	
200.00	200.00	200.00	200.00	0.69	0.69	89.89	0.18	90.03	90.03	88.65	1.39	64.903	
300.00	300.00	300.00	300.00	0.98	0.98	89.89	0.18	90.03	90.03	88.08	1.95	46.084	
400.00	400.00	400.00	400.00	1.30	1.30	89.89	0.18	90.03	90.03	87.44	2.60	34.686	
500.00	500.00	500.00	500.00	1.63	1.63	89.89	0.18	90.03	90.03	86.76	3.27	27.542	
600.00	600.00	600.00	600.00	1.98	1.98	89.89	0.18	90.03	90.03	86.08	3.96	22.750	
700.00	700.00	700.00	700.00	2.33	2.33	89.89	0.18	90.03	90.03	85.38	4.65	19.342	
800.00	800.00	800.00	800.00	2.68	2.68	89.89	0.18	90.03	90.03	84.68	5.36	16.806	
900.00	900.00	900.00	900.00	3.03	3.03	89.89	0.18	90.03	90.03	83.97	6.06	14.850	
1,000.00	1,000.00	1,000.00	1,000.00	3.39	3.39	89.89	0.18	90.03	90.03	83.25	6.77	13.297	
1,100.00	1,100.00	1,100.00	1,100.00	3.74	3.74	89.89	0.18	90.03	90.03	82.55	7.48	12.035	
1,200.00	1,200.00	1,200.00	1,200.00	4.10	4.10	89.89	0.18	90.03	90.03	81.84	8.19	10.990	
1,300.00	1,300.00	1,300.00	1,300.00	4.45	4.45	89.89	0.18	90.03	90.03	81.13	8.90	10.111	
1,400.00	1,400.00	1,400.00	1,400.00	4.81	4.81	89.89	0.18	90.03	90.03	80.42	9.62	9.362	
1,500.00	1,500.00	1,500.00	1,500.00	5.17	5.16	89.89	0.18	90.03	90.03	79.70	10.33	8.716	
1,600.00	1,600.00	1,600.00	1,600.00	5.52	5.52	89.89	0.18	90.03	90.03	78.99	11.04	8.152	
1,700.00	1,700.00	1,700.00	1,700.00	5.88	5.88	89.89	0.18	90.03	90.03	78.28	11.76	7.657	
1,800.00	1,800.00	1,800.00	1,800.00	6.24	6.24	89.89	0.18	90.03	90.03	77.56	12.47	7.218	
1,900.00	1,900.00	1,900.00	1,900.00	6.59	6.59	89.89	0.18	90.03	90.03	76.85	13.19	6.827	
2,000.00	2,000.00	2,000.00	2,000.00	6.95	6.95	89.89	0.18	90.03	90.03	76.13	13.90	6.476	
2,100.00	2,100.00	2,100.00	2,100.00	7.31	7.31	89.89	0.18	90.03	90.03	75.42	14.62	6.159	
2,200.00	2,200.00	2,200.00	2,200.00	7.67	7.67	89.89	0.18	90.03	90.03	74.70	15.33	5.872	
2,300.00	2,300.00	2,300.00	2,300.00	8.02	8.02	89.89	0.18	90.03	90.03	73.99	16.05	5.610	
2,400.00	2,400.00	2,400.00	2,400.00	8.38	8.38	89.89	0.18	90.03	90.03	73.27	16.76	5.371	
2,500.00	2,500.00	2,500.00	2,500.00	8.74	8.74	89.89	0.18	90.03	90.03	72.55	17.48	5.151 CC, ES	
2,600.00	2,599.99	2,598.12	2,598.12	9.10	9.08	130.06	0.48	91.04	91.64	73.47	18.18	5.042	
2,700.00	2,699.96	2,696.08	2,696.02	9.45	9.42	130.70	1.38	94.05	96.47	77.61	18.86	5.115	
2,800.00	2,799.85	2,805.85	2,793.95	9.81	9.81	131.63	2.87	99.02	104.49	84.91	19.58	5.337	
2,900.00	2,899.65	2,893.62	2,893.24	10.16	10.11	132.99	4.58	104.70	114.39	94.15	20.24	5.652	
3,000.00	2,999.38	2,993.00	2,992.45	10.52	10.46	134.51	6.28	110.37	125.03	104.09	20.94	5.972	
3,100.00	3,099.11	3,107.62	3,091.66	10.87	10.86	135.80	7.98	116.04	135.74	114.05	21.69	6.258	
3,200.00	3,198.84	3,208.23	3,190.86	11.23	11.22	136.90	9.68	121.71	146.51	124.11	22.40	6.542	
3,300.00	3,298.57	3,308.85	3,290.07	11.59	11.58	137.85	11.38	127.38	157.33	134.22	23.10	6.810	
3,400.00	3,398.30	3,409.47	3,389.27	11.95	11.93	138.67	13.08	133.05	168.18	144.37	23.81	7.063	
3,500.00	3,498.04	3,489.91	3,488.48	12.31	12.22	139.40	14.78	138.72	179.06	154.61	24.45	7.324	
3,600.00	3,597.77	3,589.29	3,587.68	12.67	12.57	140.04	16.48	144.39	189.97	164.81	25.16	7.552	
3,700.00	3,697.50	3,688.68	3,686.89	13.03	12.93	140.61	18.18	150.05	200.90	175.04	25.86	7.768	
3,800.00	3,797.23	3,788.06	3,786.09	13.39	13.28	141.13	19.88	155.72	211.85	185.28	26.57	7.973	
3,900.00	3,896.96	3,887.44	3,885.30	13.75	13.64	141.59	21.58	161.39	222.81	195.53	27.28	8.168	
4,000.00	3,996.69	3,986.82	3,984.51	14.12	13.99	142.01	23.29	167.06	233.78	205.80	27.99	8.353	
4,100.00	4,096.42	4,086.20	4,083.71	14.48	14.35	142.39	24.99	172.73	244.77	216.07	28.70	8.530	
4,200.00	4,196.15	4,185.59	4,182.92	14.85	14.70	142.74	26.69	178.40	255.77	226.36	29.41	8.698	
4,300.00	4,295.89	4,284.97	4,282.12	15.21	15.06	143.06	28.39	184.07	266.77	236.65	30.12	8.858	
4,400.00	4,395.62	4,384.35	4,381.33	15.57	15.42	143.36	30.09	189.74	277.78	246.95	30.83	9.010	
4,500.00	4,495.35	4,483.73	4,480.53	15.94	15.78	143.63	31.79	195.41	288.80	257.26	31.54	9.157	
4,600.00	4,595.08	4,583.11	4,579.74	16.30	16.13	143.88	33.49	201.08	299.83	267.58	32.25	9.296	
4,700.00	4,694.81	4,682.50	4,678.95	16.67	16.49	144.12	35.19	206.75	310.86	277.89	32.97	9.430	
4,800.00	4,794.54	4,781.88	4,778.15	17.03	16.85	144.33	36.89	212.42	321.89	288.22	33.68	9.558	
4,900.00	4,894.27	4,881.26	4,877.36	17.40	17.21	144.54	38.59	218.09	332.93	298.54	34.39	9.681	
5,000.00	4,994.01	4,980.64	4,976.56	17.76	17.57	144.73	40.29	223.76	343.98	308.87	35.11	9.798	

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Mean Green 23-35 Fed Com 4H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3224.80ft
Reference Site:	Sec 23-T26S-R34E	MD Reference:	RKB @ 3224.80ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Mean Green 23-35 Fed Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 3H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.00	5,093.74	5,080.02	5,075.77	18.13	17.93	144.91	41.99	229.43	355.02	319.20	35.82	9.911		
5,200.00	5,193.47	5,179.41	5,174.67	18.50	18.29	145.08	43.70	235.10	366.07	329.54	36.53	10.020		
5,300.00	5,293.23	5,278.84	5,274.23	18.86	18.65	145.25	45.40	240.77	376.70	339.45	37.25	10.113		
5,400.00	5,393.14	5,378.46	5,373.68	19.22	19.01	145.21	47.10	246.45	385.25	347.29	37.96	10.148		
5,500.00	5,493.13	5,478.24	5,473.27	19.58	19.37	144.94	48.81	252.14	391.58	352.90	38.68	10.125		
5,600.00	5,593.13	5,578.06	5,572.92	19.93	19.73	104.54	50.52	257.84	396.67	357.28	39.39	10.071		
5,700.00	5,693.13	5,677.88	5,672.56	20.29	20.09	104.10	52.23	263.53	401.77	361.67	40.10	10.019		
5,800.00	5,793.13	5,777.70	5,772.21	20.64	20.46	103.67	53.93	269.23	406.90	366.09	40.81	9.970		
5,900.00	5,893.13	5,877.53	5,871.85	21.00	20.82	103.26	55.64	274.92	412.05	370.53	41.53	9.923		
6,000.00	5,993.13	5,977.35	5,971.50	21.35	21.18	102.85	57.35	280.62	417.23	374.99	42.24	9.878		
6,100.00	6,093.13	6,077.17	6,071.14	21.71	21.54	102.45	59.06	286.31	422.42	379.47	42.95	9.835		
6,200.00	6,193.13	6,176.99	6,170.79	22.06	21.91	102.06	60.77	292.00	427.63	383.97	43.66	9.794		
6,300.00	6,293.13	6,276.82	6,270.43	22.42	22.27	101.68	62.48	297.70	432.87	388.49	44.38	9.754		
6,400.00	6,393.13	6,376.64	6,370.08	22.77	22.63	101.31	64.18	303.39	438.12	393.03	45.09	9.716		
6,500.00	6,493.13	6,476.46	6,469.72	23.13	22.99	100.95	65.89	309.09	443.39	397.58	45.81	9.680		
6,600.00	6,593.13	6,576.28	6,569.37	23.48	23.36	100.60	67.60	314.78	448.67	402.15	46.52	9.645		
6,700.00	6,693.13	6,676.11	6,669.01	23.84	23.72	100.25	69.31	320.48	453.98	406.74	47.23	9.611		
6,800.00	6,793.13	6,775.93	6,768.66	24.19	24.08	99.92	71.02	326.17	459.30	411.35	47.95	9.579		
6,900.00	6,893.13	6,875.75	6,868.31	24.55	24.45	99.59	72.73	331.87	464.63	415.97	48.66	9.548		
7,000.00	6,993.13	6,975.57	6,967.95	24.90	24.81	99.27	74.43	337.56	469.98	420.60	49.38	9.518		
7,100.00	7,093.13	7,075.39	7,067.60	25.26	25.18	98.95	76.14	343.25	475.34	425.25	50.09	9.490		
7,200.00	7,193.13	7,175.22	7,167.24	25.62	25.54	98.64	77.85	348.95	480.72	429.92	50.80	9.462		
7,300.00	7,293.13	7,275.04	7,266.89	25.97	25.90	98.34	79.56	354.64	486.11	434.59	51.52	9.436		
7,400.00	7,393.13	7,374.86	7,366.53	26.33	26.27	98.05	81.27	360.34	491.51	439.28	52.23	9.410		
7,500.00	7,493.13	7,474.68	7,466.18	26.68	26.63	97.76	82.98	366.03	496.93	443.98	52.95	9.385		
7,600.00	7,593.13	7,574.51	7,565.82	27.04	26.99	97.48	84.69	371.73	502.36	448.70	53.66	9.361		
7,700.00	7,693.13	7,674.33	7,665.47	27.40	27.36	97.21	86.39	377.42	507.80	453.42	54.38	9.338		
7,800.00	7,793.13	7,774.15	7,765.11	27.75	27.72	96.94	88.10	383.12	513.25	458.16	55.09	9.316		
7,900.00	7,893.13	7,874.11	7,864.95	28.11	28.13	96.70	89.62	388.17	517.54	461.65	55.89	9.260		
8,000.00	7,993.13	7,974.11	7,964.14	28.46	28.54	96.62	90.17	390.03	519.11	462.44	56.66	9.162		
8,100.00	8,093.13	8,074.11	8,064.13	28.82	28.89	96.62	90.18	390.03	519.11	461.74	57.37	9.048		
8,200.00	8,193.13	8,174.11	8,164.13	29.18	29.24	96.62	90.18	390.03	519.11	461.03	58.08	8.938		
8,300.00	8,293.13	8,274.11	8,264.13	29.53	29.59	96.62	90.18	390.03	519.11	460.32	58.79	8.830		
8,400.00	8,393.13	8,374.11	8,364.13	29.89	29.94	96.62	90.18	390.03	519.11	459.62	59.50	8.725		
8,500.00	8,493.13	8,474.11	8,464.13	30.25	30.29	96.62	90.18	390.03	519.11	458.91	60.20	8.622		
8,600.00	8,593.13	8,574.11	8,564.13	30.60	30.64	96.62	90.18	390.03	519.11	458.20	60.91	8.522		
8,700.00	8,693.13	8,674.11	8,664.13	30.96	30.99	96.62	90.18	390.03	519.11	457.49	61.62	8.424		
8,800.00	8,793.13	8,774.11	8,764.13	31.32	31.34	96.62	90.18	390.03	519.11	456.78	62.33	8.328		
8,900.00	8,893.13	8,874.11	8,864.13	31.67	31.69	96.62	90.18	390.03	519.11	456.07	63.04	8.235		
9,000.00	8,993.13	8,974.11	8,964.13	32.03	32.04	96.62	90.18	390.03	519.11	455.36	63.75	8.143		
9,100.00	9,093.13	9,074.11	9,064.13	32.39	32.39	96.62	90.18	390.03	519.11	454.65	64.46	8.053		
9,200.00	9,193.13	9,174.11	9,164.13	32.74	32.74	96.62	90.18	390.03	519.11	453.94	65.17	7.966		
9,300.00	9,293.13	9,274.11	9,264.13	33.10	33.09	96.62	90.18	390.03	519.11	453.23	65.88	7.880		
9,400.00	9,393.13	9,374.11	9,364.13	33.46	33.45	96.62	90.18	390.03	519.11	452.52	66.59	7.796		
9,500.00	9,493.13	9,474.11	9,464.13	33.82	33.80	96.62	90.18	390.03	519.11	451.81	67.30	7.714		
9,600.00	9,593.13	9,574.11	9,564.13	34.17	34.15	96.62	90.18	390.03	519.11	451.10	68.01	7.633		
9,700.00	9,693.13	9,674.11	9,664.13	34.53	34.50	96.62	90.18	390.03	519.11	450.39	68.72	7.554		
9,800.00	9,793.13	9,774.11	9,764.13	34.89	34.85	96.62	90.18	390.03	519.11	449.68	69.43	7.477		
9,900.00	9,893.13	9,874.11	9,864.13	35.24	35.21	96.62	90.18	390.03	519.11	448.97	70.14	7.401		
10,000.00	9,993.13	9,974.11	9,964.13	35.60	35.56	96.62	90.18	390.03	519.11	448.26	70.85	7.327		
10,100.00	10,093.13	10,074.11	10,064.13	35.96	35.91	96.62	90.18	390.03	519.11	447.55	71.56	7.254		

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Lea County (NAD83 New Mexico East)
 Reference Site: Sec 23-T26S-R34E
 Site Error: 0.00 ft
 Reference Well: Mean Green 23-35 Fed Com 4H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 1

Local Co-ordinate Reference
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:
 Output errors are at
 Database:
 Offset TVD Reference:

Well Mean Green 23-35 Fed Com 4H
 RKB @ 3224.80ft
 RKB @ 3224.80ft
 Grid
 Minimum Curvature
 2.00 sigma
 EDM r5000.141_Prod US
 Offset Datum

Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 3H - Wellbore #1 - Permit Plan 1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Trueface (ft)	Offset Wellbore Centre N-S (ft)	Offset Wellbore Centre E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.00	10,193.13	10,174.53	10,165.22	36.32	36.17	96.28	93.04	392.10	521.59	449.47	72.12	7.232	
10,300.00	10,292.90	10,242.23	10,231.97	36.65	36.42	-84.48	102.03	398.58	529.47	457.02	72.46	7.307	
10,400.00	10,390.37	10,310.27	10,297.65	36.95	36.67	-86.29	116.19	409.19	542.83	470.21	72.62	7.475	
10,500.00	10,482.56	10,397.67	10,383.01	37.22	37.00	-89.07	126.75	424.26	560.40	487.24	73.16	7.660	
10,600.00	10,566.70	10,491.97	10,475.72	37.46	37.36	-91.84	123.98	440.76	581.14	507.21	73.93	7.861	
10,700.00	10,640.20	10,595.87	10,575.95	37.66	37.72	-94.64	104.01	458.74	604.49	529.66	74.83	8.078	
10,800.00	10,700.85	10,713.20	10,683.13	37.89	38.08	-97.53	60.89	478.16	629.42	553.77	75.65	8.320	
10,900.00	10,746.80	10,849.17	10,794.24	38.12	38.45	-100.56	-14.26	498.56	654.31	578.22	76.09	8.599	
11,000.00	10,776.65	11,009.89	10,900.20	38.36	38.84	-103.66	-132.81	518.43	676.77	600.82	75.95	8.911	
11,100.00	10,789.50	11,199.61	10,980.43	38.59	39.34	-106.45	-303.15	534.17	693.52	618.06	75.46	9.191	
11,200.00	10,790.00	11,407.86	11,005.00	38.84	39.92	-107.90	-493.23	540.19	699.69	624.06	75.63	9.252	
11,300.00	10,790.00	11,507.86	11,005.00	39.14	40.24	-107.87	-593.22	541.07	700.52	624.31	76.21	9.192	
11,400.00	10,790.00	11,607.86	11,005.00	39.49	40.60	-107.85	-693.22	541.84	701.35	624.47	76.89	9.122	
11,500.00	10,790.00	11,707.87	11,005.00	39.89	41.01	-107.83	-793.21	542.81	702.18	624.52	77.66	9.042	
11,600.00	10,790.00	11,792.13	11,005.00	40.34	41.40	-107.81	-893.20	543.68	703.01	624.56	78.46	8.960	
11,700.00	10,790.00	11,907.87	11,005.00	40.84	41.97	-107.79	-993.19	544.56	703.84	624.36	79.48	8.855	
11,800.00	10,790.00	12,007.88	11,005.00	41.38	42.51	-107.77	-1,093.19	545.43	704.68	624.15	80.53	8.751	
11,900.00	10,790.00	12,107.88	11,005.00	41.96	43.10	-107.74	-1,193.18	546.30	705.51	623.85	81.65	8.640	
12,000.00	10,790.00	12,207.89	11,005.00	42.58	43.72	-107.72	-1,293.17	547.18	706.34	623.48	82.86	8.524	
12,100.00	10,790.00	12,307.89	11,005.00	43.24	44.38	-107.70	-1,393.16	548.05	707.17	623.02	84.14	8.404	
12,200.00	10,790.00	12,407.89	11,005.00	43.95	45.08	-107.68	-1,493.16	548.92	708.00	622.50	85.50	8.281	
12,300.00	10,790.00	12,507.90	11,005.00	44.68	45.82	-107.66	-1,593.15	549.79	708.83	621.90	86.93	8.154	
12,400.00	10,790.00	12,592.10	11,005.00	45.45	46.47	-107.64	-1,693.14	550.67	709.66	621.36	88.30	8.037	
12,500.00	10,790.00	12,707.90	11,005.00	46.26	47.39	-107.61	-1,793.13	551.54	710.50	620.52	89.98	7.896	
12,600.00	10,790.00	12,807.91	11,005.00	47.09	48.22	-107.59	-1,893.13	552.41	711.33	619.73	91.59	7.766	
12,700.00	10,790.00	12,907.91	11,005.00	47.96	49.08	-107.57	-1,993.12	553.28	712.16	618.89	93.27	7.636	
12,800.00	10,790.00	13,007.92	11,005.00	48.85	49.97	-107.55	-2,093.11	554.16	712.99	617.99	95.00	7.505	
12,900.00	10,790.00	13,092.08	11,005.00	49.77	50.74	-107.53	-2,193.10	555.03	713.82	617.19	96.63	7.387	
13,000.00	10,790.00	13,207.92	11,005.00	50.71	51.82	-107.51	-2,293.09	555.90	714.66	616.05	98.60	7.248	
13,100.00	10,790.00	13,307.93	11,005.00	51.67	52.78	-107.49	-2,393.09	556.77	715.49	615.01	100.48	7.121	
13,200.00	10,790.00	13,392.07	11,005.00	52.66	53.61	-107.47	-2,493.08	557.65	716.32	614.08	102.24	7.006	
13,300.00	10,790.00	13,492.07	11,005.00	53.67	54.61	-107.45	-2,593.07	558.52	717.15	612.96	104.19	6.883	
13,400.00	10,790.00	13,607.94	11,005.00	54.70	55.80	-107.43	-2,693.06	559.39	717.98	611.64	106.35	6.751	
13,500.00	10,790.00	13,707.94	11,005.00	55.75	56.84	-107.40	-2,793.06	560.26	718.82	610.44	108.38	6.632	
13,600.00	10,790.00	13,807.95	11,005.00	56.81	57.90	-107.38	-2,893.05	561.14	719.65	609.20	110.45	6.516	
13,700.00	10,790.00	13,907.95	11,005.00	57.90	58.98	-107.36	-2,993.04	562.01	720.48	607.94	112.55	6.402	
13,800.00	10,790.00	14,007.95	11,005.00	58.99	60.07	-107.34	-3,093.03	562.88	721.32	606.64	114.68	6.290	
13,900.00	10,790.00	14,107.96	11,005.00	60.11	61.18	-107.32	-3,193.03	563.76	722.15	605.31	116.84	6.181	
14,000.00	10,790.00	14,207.96	11,005.00	61.23	62.30	-107.30	-3,293.02	564.63	722.98	603.96	119.03	6.074	
14,100.00	10,790.00	14,307.97	11,005.00	62.37	63.44	-107.28	-3,393.01	565.50	723.82	602.57	121.24	5.970	
14,200.00	10,790.00	14,407.97	11,005.00	63.52	64.59	-107.26	-3,493.00	566.37	724.65	601.17	123.48	5.869	
14,300.00	10,790.00	14,507.97	11,005.00	64.69	65.75	-107.24	-3,593.00	567.25	725.48	599.74	125.74	5.770	
14,400.00	10,790.00	14,607.98	11,005.00	65.87	66.92	-107.22	-3,692.99	568.12	726.32	598.29	128.03	5.673	
14,500.00	10,790.00	14,707.98	11,005.00	67.05	68.10	-107.20	-3,792.98	568.99	727.15	596.81	130.34	5.579	
14,600.00	10,790.00	14,792.02	11,005.00	68.25	69.11	-107.18	-3,892.97	569.86	727.98	595.51	132.48	5.495	
14,700.00	10,790.00	14,907.99	11,005.00	69.45	70.50	-107.16	-3,992.97	570.74	728.82	593.81	135.01	5.398	
14,800.00	10,790.00	15,007.99	11,005.00	70.67	71.71	-107.14	-4,092.96	571.61	729.65	592.28	137.37	5.311	
14,900.00	10,790.00	15,108.00	11,005.00	71.89	72.94	-107.12	-4,192.95	572.48	730.48	590.73	139.75	5.227	
15,000.00	10,790.00	15,208.00	11,005.00	73.13	74.17	-107.10	-4,292.94	573.35	731.32	589.17	142.15	5.145	
15,100.00	10,790.00	15,292.00	11,005.00	74.37	75.20	-107.08	-4,392.93	574.23	732.15	587.78	144.37	5.071	
15,200.00	10,790.00	15,408.01	11,005.00	75.61	76.65	-107.06	-4,492.93	575.10	732.99	585.99	146.99	4.987 Alert	

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Lea County (NAD83 New Mexico East)
 Reference Site: Sec 23-T26S-R34E
 Site Error: 0.00 ft
 Reference Well: Mean Green 23-35 Fed Com 4H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 1

Local Co-ordinate Reference: Well Mean Green 23-35 Fed Com 4H
 TVD Reference: RKB @ 3224.80ft
 MD Reference: RKB @ 3224.80ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM r5000.141_Prod US
 Offset TVD Reference: Offset Datum

Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 3H - Wellbore #1 - Permit Plan 1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Topface (ft)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
15,300.00	10,790.00	15,508.01	11,005.00	76.87	77.90	-107.04	-4,592.92	575.97	733.82	584.38	149.44	4.911	Alert
15,400.00	10,790.00	15,608.02	11,005.00	78.13	79.16	-107.02	-4,692.91	576.84	734.66	582.76	151.89	4.837	Alert
15,500.00	10,790.00	15,708.02	11,005.00	79.40	80.43	-107.00	-4,792.90	577.72	735.49	581.13	154.36	4.765	Alert
15,600.00	10,790.00	15,808.02	11,005.00	80.67	81.70	-106.98	-4,892.90	578.59	736.32	579.48	156.84	4.695	Alert
15,700.00	10,790.00	15,908.03	11,005.00	81.95	82.98	-106.96	-4,992.89	579.46	737.16	577.82	159.34	4.626	Alert
15,800.00	10,790.00	16,008.03	11,005.00	83.24	84.26	-106.94	-5,092.88	580.33	737.99	576.15	161.84	4.560	Alert
15,900.00	10,790.00	16,108.03	11,005.00	84.53	85.55	-106.92	-5,192.87	581.21	738.83	574.47	164.35	4.495	Alert
16,000.00	10,790.00	16,208.04	11,005.00	85.82	86.84	-106.90	-5,292.87	582.08	739.66	572.78	166.88	4.432	Alert
16,100.00	10,790.00	16,308.04	11,005.00	87.12	88.14	-106.88	-5,392.86	582.95	740.50	571.08	169.41	4.371	Alert
16,200.00	10,790.00	16,408.05	11,005.00	88.43	89.45	-106.86	-5,492.85	583.83	741.33	569.38	171.96	4.311	Alert
16,300.00	10,790.00	16,508.05	11,005.00	89.74	90.76	-106.84	-5,592.84	584.70	742.17	567.66	174.51	4.253	Alert
16,400.00	10,790.00	16,608.05	11,005.00	91.05	92.07	-106.82	-5,692.84	585.57	743.00	565.93	177.07	4.196	Alert
16,500.00	10,790.00	16,708.06	11,005.00	92.37	93.39	-106.80	-5,792.83	586.44	743.84	564.20	179.64	4.141	Alert
16,600.00	10,790.00	16,808.06	11,005.00	93.69	94.71	-106.78	-5,892.82	587.32	744.68	562.45	182.22	4.087	Alert
16,700.00	10,790.00	16,908.06	11,005.00	95.02	96.03	-106.76	-5,992.81	588.19	745.51	560.70	184.81	4.034	Alert
16,800.00	10,790.00	17,008.07	11,005.00	96.35	97.36	-106.74	-6,092.81	589.06	746.35	558.95	187.40	3.983	Alert
16,900.00	10,790.00	17,108.07	11,005.00	97.68	98.70	-106.72	-6,192.80	589.93	747.18	557.18	190.00	3.933	Alert
17,000.00	10,790.00	17,208.08	11,005.00	99.02	100.03	-106.70	-6,292.79	590.81	748.02	555.41	192.61	3.884	Alert
17,100.00	10,790.00	17,308.08	11,005.00	100.35	101.37	-106.69	-6,392.78	591.68	748.85	553.63	195.22	3.836	Alert
17,200.00	10,790.00	17,408.08	11,005.00	101.70	102.71	-106.67	-6,492.77	592.55	749.69	551.85	197.84	3.789	Alert
17,300.00	10,790.00	17,508.09	11,005.00	103.04	104.06	-106.65	-6,592.77	593.42	750.53	550.06	200.46	3.744	Alert
17,400.00	10,790.00	17,608.09	11,005.00	104.39	105.40	-106.63	-6,692.76	594.30	751.36	548.27	203.10	3.700	Alert
17,500.00	10,790.00	17,708.10	11,005.00	105.74	106.76	-106.61	-6,792.75	595.17	752.20	546.46	205.73	3.656	Alert
17,600.00	10,790.00	17,808.10	11,005.00	107.09	108.11	-106.59	-6,892.74	596.04	753.03	544.66	208.38	3.614	Alert
17,700.00	10,790.00	17,908.10	11,005.00	108.45	109.46	-106.57	-6,992.74	596.91	753.87	542.85	211.02	3.572	Alert
17,800.00	10,790.00	18,008.11	11,005.00	109.80	110.82	-106.55	-7,092.73	597.79	754.71	541.03	213.68	3.532	Alert
17,900.00	10,790.00	18,108.11	11,005.00	111.16	112.18	-106.53	-7,192.72	598.66	755.54	539.21	216.33	3.493	Alert
18,000.00	10,790.00	18,208.11	11,005.00	112.53	113.55	-106.51	-7,292.71	599.53	756.38	537.39	219.00	3.454	Alert
18,100.00	10,790.00	18,308.12	11,005.00	113.89	114.91	-106.50	-7,392.71	600.41	757.22	535.56	221.66	3.416	Alert
18,200.00	10,790.00	18,391.88	11,005.00	115.26	116.06	-106.48	-7,492.70	601.28	758.05	533.94	224.12	3.382	Alert
18,300.00	10,790.00	18,508.13	11,005.00	116.63	117.65	-106.46	-7,592.69	602.15	758.89	531.88	227.01	3.343	Alert
18,400.00	10,790.00	18,608.13	11,005.00	118.00	119.02	-106.44	-7,692.68	603.02	759.73	530.04	229.69	3.308	Alert
18,500.00	10,790.00	18,708.13	11,005.00	119.37	120.39	-106.42	-7,792.68	603.90	760.56	528.19	232.37	3.273	Alert
18,600.00	10,790.00	18,808.14	11,005.00	120.74	121.77	-106.40	-7,892.67	604.77	761.40	526.34	235.06	3.239	Alert
18,700.00	10,790.00	18,908.14	11,005.00	122.12	123.15	-106.38	-7,992.66	605.64	762.24	524.49	237.75	3.206	Alert
18,800.00	10,790.00	19,008.14	11,005.00	123.50	124.53	-106.37	-8,092.65	606.51	763.08	522.63	240.44	3.174	Alert
18,900.00	10,790.00	19,108.15	11,005.00	124.88	125.91	-106.35	-8,192.65	607.39	763.91	520.77	243.14	3.142	Alert
19,000.00	10,790.00	19,208.15	11,005.00	126.26	127.29	-106.33	-8,292.64	608.26	764.75	518.91	245.84	3.111	Alert
19,100.00	10,790.00	19,308.16	11,005.00	127.64	128.67	-106.31	-8,392.63	609.13	765.59	517.04	248.55	3.080	Alert
19,200.00	10,790.00	19,408.16	11,005.00	129.02	130.06	-106.29	-8,492.62	610.00	766.43	515.17	251.25	3.050	Alert
19,300.00	10,790.00	19,508.16	11,005.00	130.41	131.44	-106.27	-8,592.61	610.88	767.26	513.30	253.97	3.021	Alert
19,400.00	10,790.00	19,608.17	11,005.00	131.79	132.83	-106.26	-8,692.61	611.75	768.10	511.42	256.68	2.992	Alert
19,500.00	10,790.00	19,708.17	11,005.00	133.18	134.22	-106.24	-8,792.60	612.62	768.94	509.54	259.40	2.964	Alert
19,600.00	10,790.00	19,808.18	11,005.00	134.57	135.61	-106.22	-8,892.59	613.49	769.78	507.66	262.12	2.937	Alert
19,700.00	10,790.00	19,908.18	11,005.00	135.96	137.01	-106.20	-8,992.58	614.37	770.61	505.78	264.84	2.910	Alert
19,800.00	10,790.00	20,008.18	11,005.00	137.35	138.40	-106.18	-9,092.58	615.24	771.45	503.89	267.56	2.883	Alert
19,900.00	10,790.00	20,108.19	11,005.00	138.75	139.79	-106.16	-9,192.57	616.11	772.29	502.00	270.29	2.857	Alert
20,000.00	10,790.00	20,191.81	11,005.00	140.14	140.96	-106.15	-9,292.56	616.98	773.13	500.33	272.80	2.834	Alert
20,100.00	10,790.00	20,308.19	11,005.00	141.54	142.59	-106.13	-9,392.55	617.86	773.97	498.21	275.75	2.807	Alert
20,200.00	10,790.00	20,391.80	11,005.00	142.93	143.76	-106.11	-9,492.55	618.73	774.81	496.54	278.27	2.784	Alert
20,300.00	10,790.00	20,508.20	11,005.00	144.33	145.38	-106.09	-9,592.54	619.60	775.64	494.42	281.23	2.758	Alert

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Mean Green 23-35 Fed Com 4H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3224.80ft
Reference Site:	Sec 23-T26S-R34E	MD Reference:	RKB @ 3224.80ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Mean Green 23-35 Fed Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 3H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
20,400.00	10,790.00	20,591.80	11,005.00	145.73	146.55	-106.08	-9,692.53	620.48	776.48	492.74	283.74	2.737	Alert	
20,500.00	10,790.00	20,691.79	11,005.00	147.13	147.96	-106.06	-9,792.52	621.35	777.32	490.84	286.48	2.713	Alert	
20,600.00	10,790.00	20,808.21	11,005.00	148.53	149.59	-106.04	-9,892.52	622.22	778.16	488.71	289.45	2.688	Alert	
20,700.00	10,790.00	20,891.78	11,005.00	149.93	150.76	-106.02	-9,992.51	623.09	779.00	487.02	291.97	2.668	Alert	
20,706.12	10,790.00	20,897.90	11,005.00	150.01	150.85	-106.02	-9,998.62	623.15	779.05	486.91	292.14	2.667	Alert, SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Mean Green 23-35 Fed Com 4H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3224.80ft
Reference Site:	Sec 23-T26S-R34E	MD Reference:	RKB @ 3224.80ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Mean Green 23-35 Fed Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 26-26S-34E - Rattlesnake Federal Unit 1 - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 250-INC-ONLY													Offset Well Error:	5.00 ft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,100.00	10,790.00	10,783.57	10,780.64	51.67	242.84	89.84	-3,555.52	-1,030.97	1,468.71	1,182.48	286.23	5.131		
13,200.00	10,790.00	10,783.78	10,780.85	52.66	242.85	89.85	-3,555.52	-1,030.97	1,391.34	1,104.02	287.31	4.843	Alert	
13,300.00	10,790.00	10,783.99	10,781.06	53.67	242.85	89.86	-3,555.52	-1,030.97	1,317.01	1,028.43	288.58	4.564	Alert	
13,400.00	10,790.00	10,784.21	10,781.28	54.70	242.86	89.88	-3,555.52	-1,030.97	1,246.28	956.24	290.05	4.297	Alert	
13,500.00	10,790.00	10,784.43	10,781.49	55.75	242.86	89.89	-3,555.52	-1,030.97	1,179.80	888.07	291.73	4.044	Alert	
13,600.00	10,790.00	10,784.64	10,781.71	56.81	242.87	89.91	-3,555.52	-1,030.97	1,118.32	824.70	293.62	3.809	Alert	
13,700.00	10,790.00	10,784.86	10,781.93	57.90	242.87	89.92	-3,555.52	-1,030.97	1,062.70	767.00	295.70	3.594	Alert	
13,800.00	10,790.00	10,785.09	10,782.15	58.99	242.88	89.93	-3,555.52	-1,030.97	1,013.92	715.99	297.93	3.403	Alert	
13,900.00	10,790.00	10,785.31	10,782.38	60.11	242.88	89.95	-3,555.52	-1,030.97	973.01	672.78	300.23	3.241	Alert	
14,000.00	10,790.00	10,785.54	10,782.60	61.23	242.89	89.96	-3,555.52	-1,030.97	940.98	638.51	302.47	3.111	Alert	
14,100.00	10,790.00	10,785.76	10,782.83	62.37	242.89	89.98	-3,555.53	-1,030.97	918.78	614.24	304.53	3.017	Alert	
14,200.00	10,790.00	10,785.99	10,783.06	63.52	242.90	89.99	-3,555.53	-1,030.97	907.11	600.84	305.27	2.962	Alert	
14,256.48	10,790.00	10,786.13	10,783.19	64.18	242.90	90.00	-3,555.53	-1,030.97	905.35	598.28	307.07	2.948	Alert, CC, ES	
14,300.00	10,790.00	10,786.23	10,783.29	64.69	242.90	90.01	-3,555.53	-1,030.97	906.40	598.82	307.58	2.947	Alert, SF	
14,400.00	10,790.00	10,786.46	10,783.53	65.87	242.91	90.02	-3,555.53	-1,030.97	916.66	608.28	308.38	2.972	Alert	
14,500.00	10,790.00	10,786.70	10,783.76	67.05	242.91	90.04	-3,555.53	-1,030.97	937.53	628.85	308.68	3.037	Alert	
14,600.00	10,790.00	10,786.93	10,784.00	68.25	242.92	90.05	-3,555.53	-1,030.97	968.33	659.81	308.52	3.139	Alert	
14,700.00	10,790.00	10,787.17	10,784.24	69.45	242.92	90.07	-3,555.53	-1,030.97	1,008.15	700.15	308.00	3.273	Alert	
14,800.00	10,790.00	10,787.42	10,784.48	70.67	242.93	90.08	-3,555.53	-1,030.97	1,055.97	748.76	307.21	3.437	Alert	
14,900.00	10,790.00	10,787.66	10,784.73	71.89	242.94	90.10	-3,555.53	-1,030.97	1,110.75	804.50	306.25	3.627	Alert	
15,000.00	10,790.00	10,787.91	10,784.97	73.13	242.94	90.11	-3,555.53	-1,030.97	1,171.53	866.33	305.20	3.839	Alert	
15,100.00	10,790.00	10,788.16	10,785.22	74.37	242.95	90.13	-3,555.53	-1,030.97	1,237.41	933.29	304.12	4.069	Alert	
15,200.00	10,790.00	10,788.41	10,785.47	75.61	242.95	90.14	-3,555.53	-1,030.97	1,307.62	1,004.58	303.05	4.315	Alert	
15,300.00	10,790.00	10,788.66	10,785.73	76.87	242.96	90.16	-3,555.53	-1,030.97	1,381.51	1,079.50	302.01	4.574	Alert	
15,400.00	10,790.00	10,788.92	10,785.98	78.13	242.97	90.18	-3,555.53	-1,030.97	1,458.52	1,157.49	301.04	4.845	Alert	

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

Anticollision Report

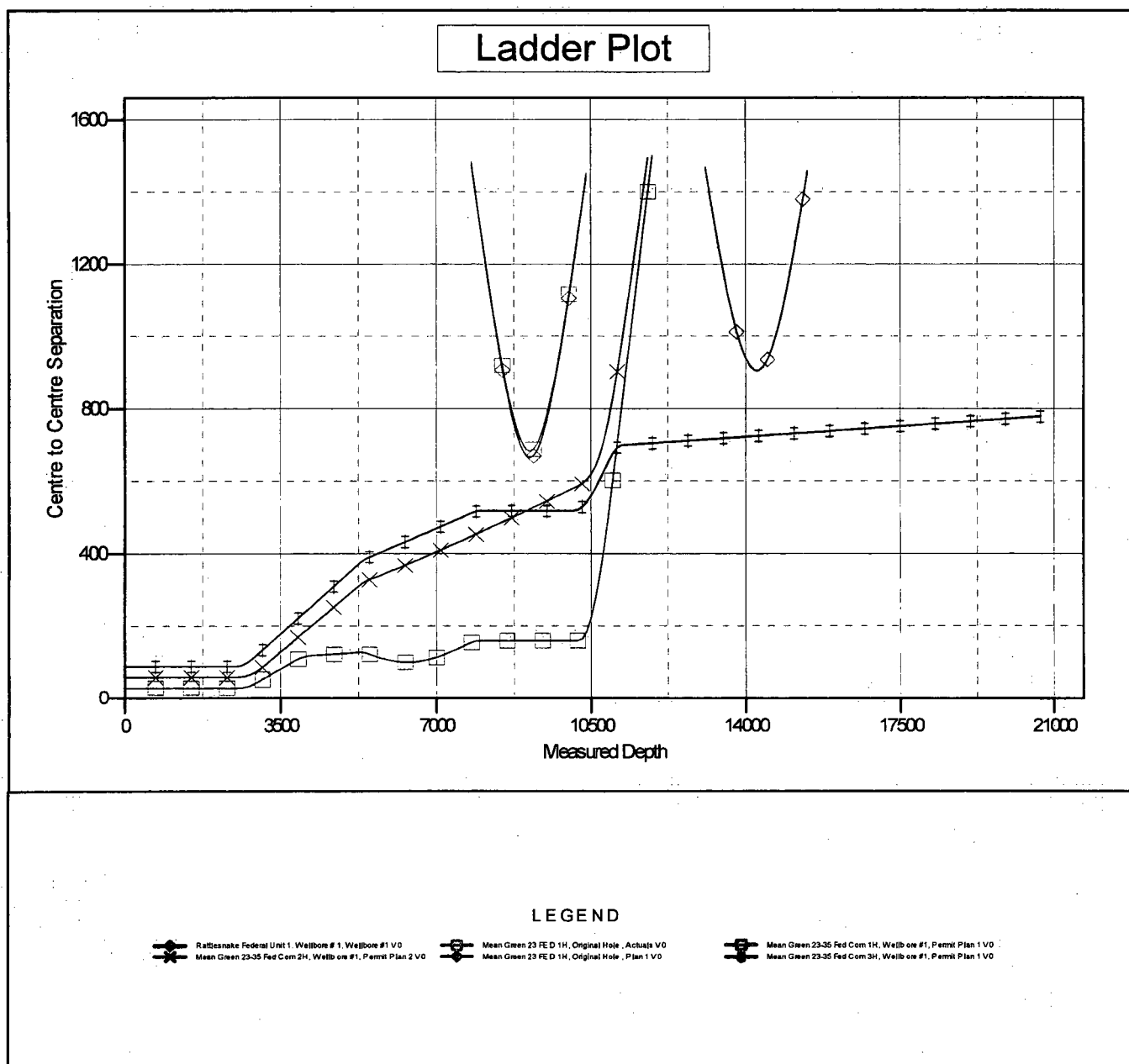
Company: WCDSC Permian NM
Project: Lea County (NAD83 New Mexico East)
Reference Site: Sec 23-T26S-R34E
Site Error: 0.00 ft
Reference Well: Mean Green 23-35 Fed Com 4H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 1

Local Co-ordinate Reference
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Output errors are at
Database:
Offset TVD Reference:

Well Mean Green 23-35 Fed Com 4H
 RKB @ 3224.80ft
 RKB @ 3224.80ft
 Grid
 Minimum Curvature
 2.00 sigma
 EDM r5000.141_Prod US
 Offset Datum

Reference Depths are relative to RKB @ 3224.80ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Mean Green 23-35 Fed Com 4H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.48°



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

Anticollision Report

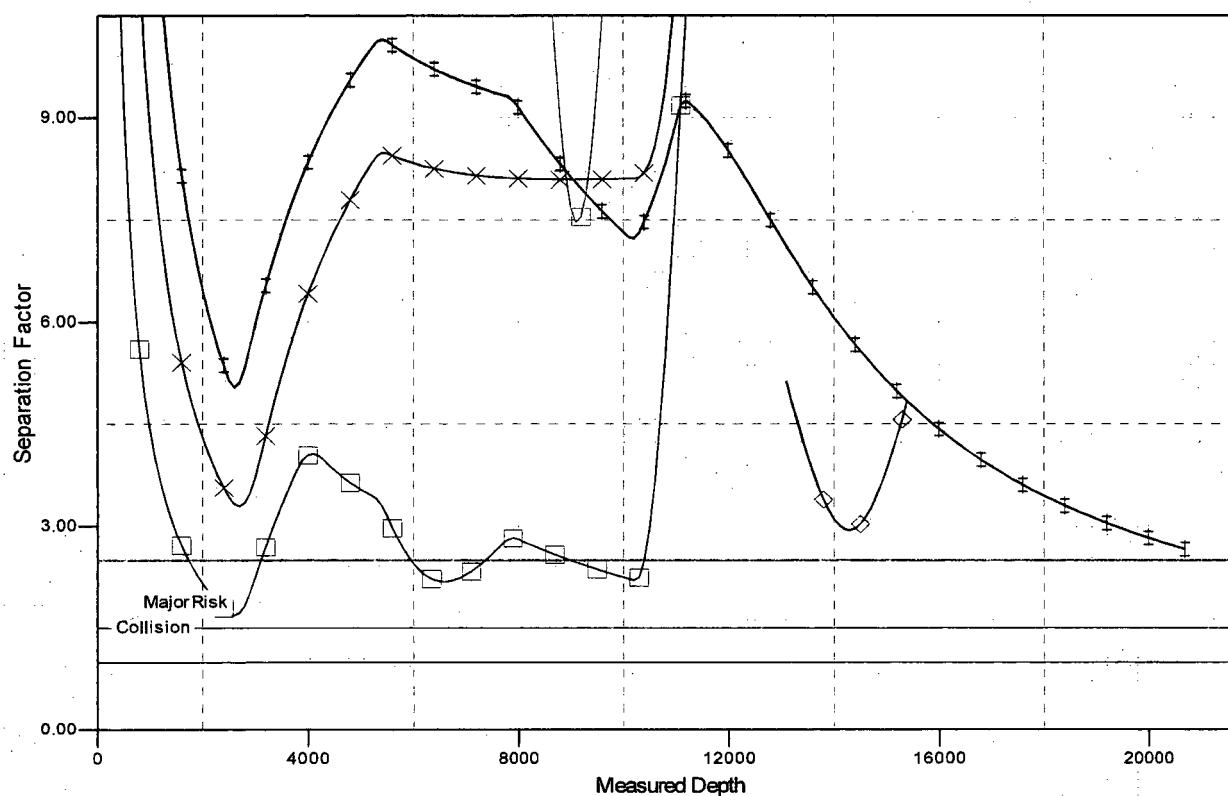
Company: WCDSC Permian NM
Project: Lea County (NAD83 New Mexico East)
Reference Site: Sec 23-T26S-R34E
Site Error: 0.00 ft
Reference Well: Mean Green 23-35 Fed Com 4H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 1

Local Co-ordinate Reference: Well Mean Green 23-35 Fed Com 4H
TVD Reference: RKB @ 3224.80ft
MD Reference: RKB @ 3224.80ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM r5000.141_Prod US
Offset TVD Reference: Offset Datum

Reference Depths are relative to RKB @ 3224.80ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Mean Green 23-35 Fed Com 4H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.48°

Separation Factor Plot



LEGEND

Rattlesnake Federal Unit 1, Wellbore #1, Wellbore #1 V0
 Mean Green 23-35 Fed Com 2H, Wellbore #1, Permit Plan 2 V0
 Mean Green 23-35 Fed Com 1H, Original Hole, Actuals V0
 Mean Green 23-35 Fed Com 1H, Original Hole, Plan 1 V0
 Mean Green 23-35 Fed Com 3H, Wellbore #1, Permit Plan 1 V0
 Mean Green 23-35 Fed Com 3H, Wellbore #1, Permit Plan 1 V0

PECOS DISTRICT

DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company
LEASE NO.:	NMNM100568
WELL NAME & NO.:	Mean Green 23-35 Fed Com 4H
SURFACE HOLE FOOTAGE:	2449'/S & 920'/E
BOTTOM HOLE FOOTAGE	200'/S & 1026'/E
LOCATION:	Section 23, T.26 S., R.34 E., NMPM
COUNTY:	Lea County, New Mexico

COA

All previous COA still apply expect the following:

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

A. Hydrogen Sulfide

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

B. CASING

1. The 13-3/8 inch surface casing shall be set at approximately 1050 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of 8 hours or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Operator shall filled 1/3rd casing with fluid while running intermediate casing to maintain collapse safety factor.

- 2. The minimum required fill of cement behind the 9 5/8 inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.
- 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. **Additional cement maybe required. Excess calculates to -30%.**

C. PRESSURE CONTROL

- 1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
- 2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) psi**.
- 3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 7-5/8 intermediate casing shoe shall be **3000 (3M) psi**.

GENERAL REQUIREMENTS

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

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

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

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

☒ Lea County

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

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. **The operator proposes to set surface casing with Spudder Rig**
 - **Notify the BLM when moving in and removing the Spudder Rig.**
 - **Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.**
 - **BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.**
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive

strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating.

Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

- c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.
- g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Waste Minimization Plan (WMP)

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

ZS 052918

263423I SUNDRY MEAN GREEN 23-25 FED COM 4H 30015 NMNM100568 DEVON
ENERGY 12-55 419557 05292018 ZS

13 3/8	surface csg in a	17 1/2	inch hole.	Design Factors			SURFACE		
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight	
"A"	48.00	H 40	ST&C	6.39	1.6	0.61	1,050	50,400	
"B"							0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 753				Tail Cmt	does	circ to sfc.	Totals:	1,050	50,400
Comparison of Proposed to Minimum Required Cement Volumes									
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
17 1/2	0.6946	823	1103	784	41	8.80	1658	2M	1.56

Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.

9 5/8	casing inside the	13 3/8	Design Factors				INTERMEDIATE		
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight	
"A"	40.00	J 55	LT&C	2.43	0.91	0.76	5,350	214,000	
"B"			LT&C				0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig:						Totals:	5,350	214,000	
The cement volume(s) are intended to achieve a top of				0	ft from surface or a		1050	overlap.	
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
12 1/4	0.3132	1379	2392	1761	36	10.20	2839	3M	0.81

Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.74, b, c, d

All > 0.70, OK.

ALT. COLLAPSE SF : 0.91*1.5= 1.37

5 1/2 casing inside the 9 5/8			Design Factors			PRODUCTION		
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight
"A"	17.00	P 110	VAM SG	2.98	1.51	2.04	10,224	173,808
"B"	17.00	P 110	VAM SG	7.96	1.31	2.04	10,482	178,194
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,249						Totals:	20,706	352,002
B would be:				56.74	1.43	if it were a vertical wellbore.		
No Pilot Hole Planned			MTD	Max VTD	Csg VD	Curve KOP	Dogleg°	Severity°
			20706	10790	10790	10224	90	10
The cement volume(s) are intended to achieve a top of				5150	ft from surface or a		200	overlap.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE
8 3/4	0.2526	2283	2740	3937	30	9.30		
								Min Dist
								Hole-Cplg
								1.35