Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM 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.

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
NMNM124664

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
GUNNER 8 FEDERAL COM 604H

2. Name of Operator
COG OPERATING LLC
Contact: STAN WAGNER
E-Mail: swagner@concho.com

9. API Well No.
30-025-46758-00-X1

3a. Address
ONE CONCHO CENTER 600 W ILLINOIS AVENUE
MIDLAND, TX 79701-4287

3b. Phone No. (include area code)
Ph: 432.253.9685

10. Field and Pool or Exploratory Area
RATTLESNAKE FLAT

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 5 T26S R34E NWNW 250FNL 560FWL
32.079044 N Lat, 103.498665 W Lon

11. County or Parish, State
LEA COUNTY, NM

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

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

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete 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 recompletion 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.

COG Operating LLC requests an amendment to our approved APD for this well to reflect changes in the drill plan and BHL as detailed by attachments to this sundry.

Change BHL TO: 50' FSL & 1650' FWL SESW 8-26S-34E Lea County NM.

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

Electronic Submission #510761 verified by the BLM Well Information System
For COG OPERATING LLC, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 04/15/2020 (20PP2045SE)

Name *(Printed/Typed)* STAN WAGNER — Title REGULATORY ADVISOR

Signature (Electronic Submission) — Date 04/14/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By DYLAN ROSSMANGO — Title PETROLEUM ENGINEER — Date 08/25/2020

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 ****

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. FIRST ST., ARTESIA, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 RIO BRAZOS 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) 476-3460 Fax: (505) 476-3462

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	Pool Code	Pool Name
30-025-46758	98094	Bobcat Draw; Wolfcamp

Property Code	Property Name	Well Number
	GUNNER 8 FEDERAL COM	604H

OGRID No.	Operator Name	Elevation
229137	COG OPERATING, LLC	3333.4'

Surface Location

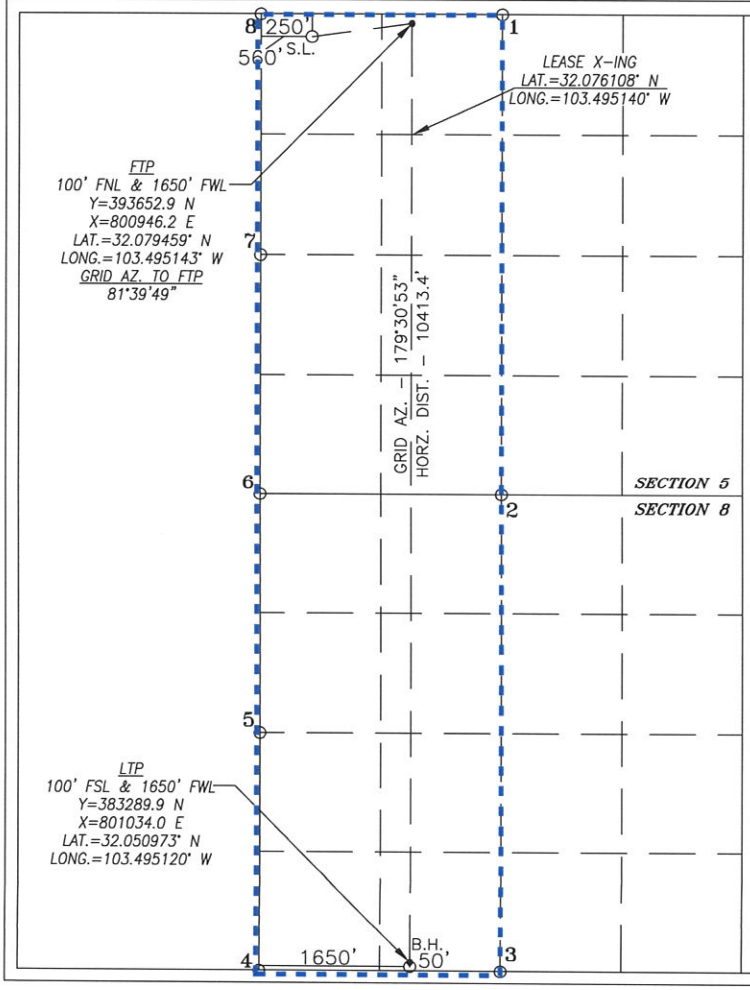
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	5	26-S	34-E		250	NORTH	560	WEST	LEA

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
N	8	26-S	34-E		50	SOUTH	1650	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
640			

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



NAD 83 NME
SURFACE LOCATION
Y=393493.4 N
X=799857.6 E
LAT.=32.079044° N
LONG.=103.498662° W

POINT LEGEND	
1	Y=393761.6 N X=801937.5 E
2	Y=388481.8 N X=801990.0 E
3	Y=383197.3 N X=802030.8 E
4	Y=383177.8 N X=799384.9 E
5	Y=385820.8 N X=799363.3 E
6	Y=388463.5 N X=799339.8 E
7	Y=391104.4 N X=799318.3 E
8	Y=393738.6 N X=799295.4 E

NAD 83 NME
PROPOSED BOTTOM
HOLE LOCATION
Y=383239.9 N
X=801034.4 E
LAT.=32.050835° N
LONG.=103.495119° W

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.

Stan Wagner 4/14/2020
Signature Date

Stan Wagner
Printed Name

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.

NOVEMBER 15, 2019
Date of Survey

Signature & Seal of Professional Surveyor

CHAD L. HARCROW
NEW MEXICO
17777
LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 3/30/20
Certificate No. CHAD HARCROW 17777

W.O. # 20-495 DRAWN BY: DS

Intent [X] As Drilled [ ]

API #		
30-025-46758		
Operator Name:	Property Name:	Well Number
COG Operating LLC	Gunner 8 Federal Com	604H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
D	5	26S	34E						Lea
Latitude			Longitude						NAD
									83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
C	5	26S	34E		100	North	1650	West	Lea
Latitude			Longitude						NAD
32.079459			-103.495143						NAD 83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
N	8	26S	34E		100	South	1650	West	Lea
Latitude			Longitude						NAD
32.050973			-103.495120						NAD 83

Is this well the defining well for the Horizontal Spacing Unit? [No]

Is this well an infill well? [Yes]

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

API #		
30-025-		
Operator Name:	Property Name:	Well Number
COG Operating LLC	Gunner 8 Federal Com	704H

KZ 06/29/2018

Gunner Federal Com 604H Sundry Information

Interval	**Hole Size**	**Casing Interval**		**Csg. Size**	**Weight**	**Grade**	**Conn.**
		From	**To**		**(lbs)**		
Surface	14.75''	0	900	10.75''	45.5	J55	BTC
Intermediate	9.875"	0	8000	7.625''	29.7	L80 HC	BTC
	8.75"	8000*	11900	7.625"	29.7	P-110 HC	Tech Lock Flush Joint
Production	6.75''	0	11900	5.5''	23	P110	BTC
	6.75''	11900	23,062	5.5''	23	P110	Tech Lock Wedge

The Tech Lock Flush Joint by BTC cross over will be 200’ above where the bit size changes from 9.875” to 8.75”

Cement

Surface
Lead: 300 sx 13.5#; 1.75 cuft/sx; 9.21 H20 Gal/sx; Class C + 4% Gel
Tail: 300 sx 14.8#; 1.34 cuft/sx; 6.34 H20 Gal/sx; Class C + 2% CaCl2

Intermediate
Lead: 900 sx 10.3#; 3.6 cuft/sx; 21.87 H20 Gal/sx; NeoCem
Tail: 150 sx 15.6#; 1.2 cuft/sx; 5.41 H20 Gal/sx; Class H

Production
Lead: 650 sx; 12.7#; 1.97 cuft/sx; 10.8 H20 Gal/sx; 35:65:6 H Blend
Tail: 950 sx; 14.5#; 1.22 cuft.sx; 5.56 H20 Gal/sx; 50:50:2 H Blend

TEC-LOCK WEDGE

5.500" 23.00 LB/FT (.415"Wall) with 5.875" Special Clearance OD
BORUSAN P110 CY

Pipe Body Data

Nominal OD:	5.500	in
Nominal Wall:	.415	in
Nominal Weight:	23.00	lb/ft
Plain End Weight:	22.56	lb/ft
Material Grade:	P110 CY	
Mill/Specification:	BORUSAN	
Yield Strength:	110,000	psi
Tensile Strength:	125,000	psi
Nominal ID:	4.670	in
API Drift Diameter:	4.545	in
Special Drift Diameter:	None	in
RBW:	87.5 %	
Body Yield:	729,000	lbf
Burst:	14,540	psi
Collapse:	14,540	psi

Connection Data

Standard OD:	5.875	in
Pin Bored ID:	4.670	in
Critical Section Area:	6.457	in^2
Tensile Efficiency:	97.4 %	
Compressive Efficiency:	100 %	
Longitudinal Yield Strength:	710,000	lbf
Compressive Limit:	729,000	lbf
Internal Pressure Rating:	14,540	psi
External Pressure Rating:	14,540	psi
Maximum Bend:	89.4	°/100ft

Operational Data

Minimum Makeup Torque:	14,900	ft*lbf
Optimum Makeup Torque:	18,600	ft*lbf
Maximum Makeup Torque:	40,800	ft*lbf
Minimum Yield:	45,300	ft*lbf
Makeup Loss:	5.97	in

Notes

Operational Torque is equivalent to the Maximum Make-Up Torque

HUNTING

Generated on Sep 18, 2019

TEC-LOCK FJ

7.625" 29.7 LB/FT (.375" Wall)
P110 HC

Pipe Body Data

Nominal OD:	7.625	in
Nominal Wall:	0.375	in
Nominal Weight:	29.70	lb/ft
Plain End Weight:	29.22	lb/ft
Material Grade:	P110 HC	
Mill/Specification:	BORUSAN MANNESMANN	
Yield Strength:	110,000	psi
Tensile Strength:	125,000	psi
Nominal ID:	6.875	in
API Drift Diameter:	6.750	in
Special Drift Diameter:	NA	in
RBW:	87.5%	
Body Yield:	940,000	lbf
Burst:	9,460	psi
Collapse:	7,050	psi

Connection Data

Standard OD:	7.625	in
Pin Bored ID:	6.875	in
Critical Section Area:	6.299	in^2
Tensile Efficiency:	70.0%	
Compressive Efficiency:	61.9%	
Longitudinal Yield Strength:	658,000	lbf
Compressive Limit:	581,860	lbf
Internal Pressure Rating:	7,570	psi
External Pressure Rating:	7,050	psi
Maximum Bend:	26	°/100ft

Operational Data

Minimum Makeup Torque:	3,600	ft*lbf
Optimum Makeup Torque:	6,500	ft*lbf
Maximum Makeup Torque:	9,400	ft*lbf
Minimum Yield:	14,500	ft*lbf
Makeup Loss:	5.97	in

Notes Preliminary DataSheet

The Connection ratings are structural

HUNTING

Generated on Sep 05, 2019

Project: LEA COUNTY, NM
Site: BULLDOG
Well: GUNNER 8 FED COM 604H
Wellbore: OWB
Design: PWP3
GL: 3333.4
KB=26' @ 3359.4usft (McVAY 8)

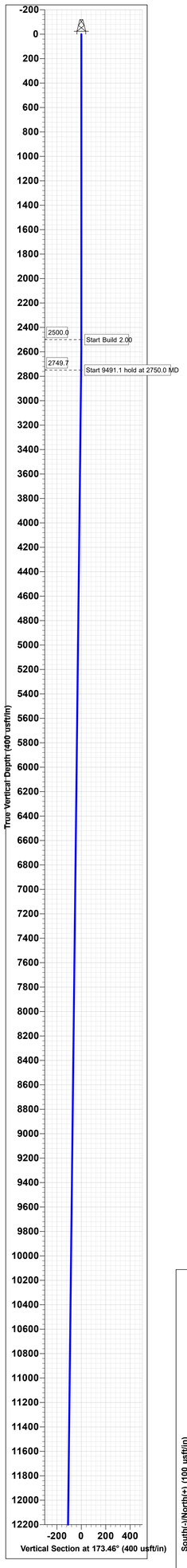
CONCHO

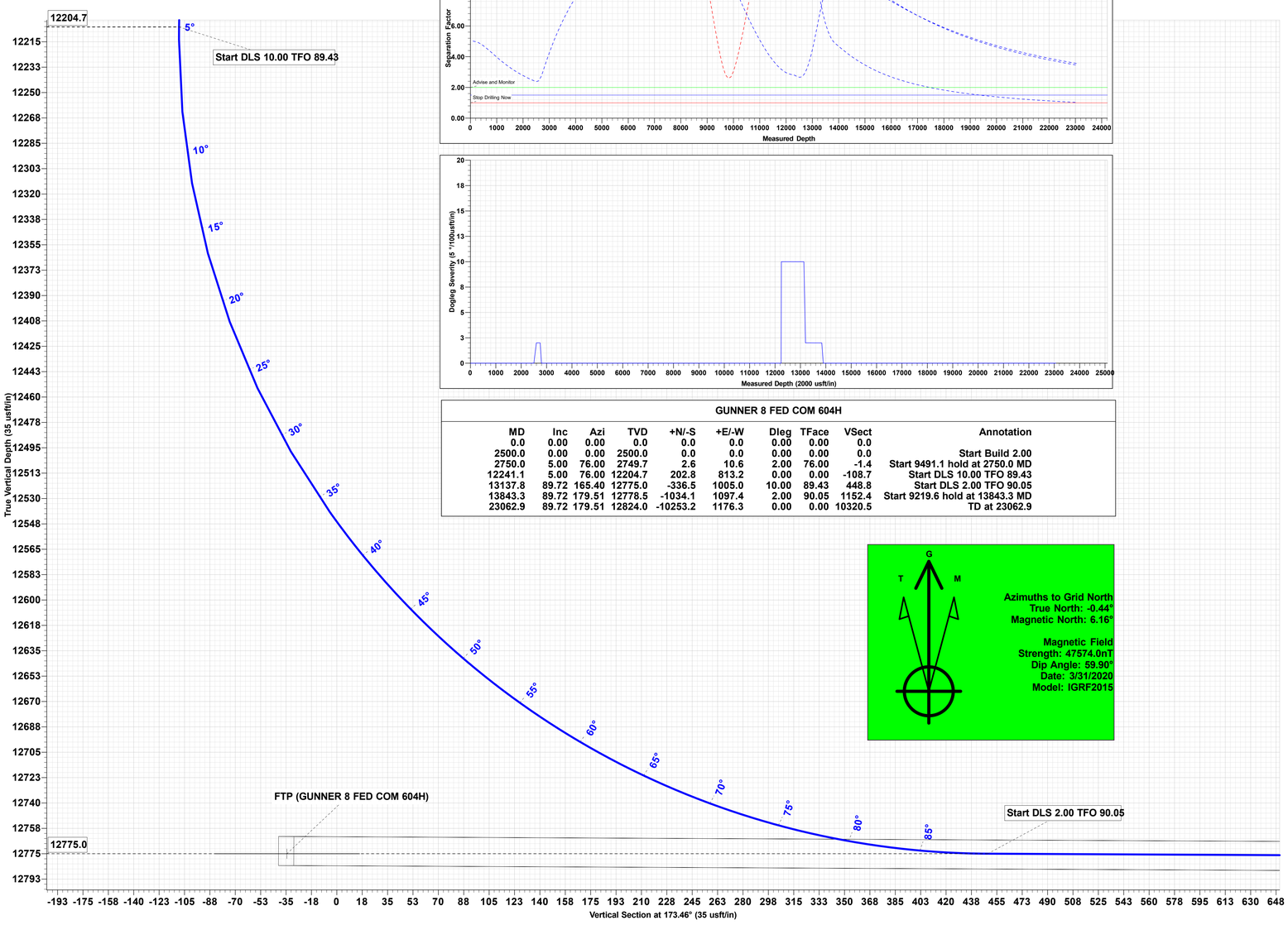
WELL DETAILS: GUNNER 8 FED COM 604H

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude
0.0	0.0	393436.00	758670.60	32° 4' 44.108 N	103° 29' 53.501 W

DESIGN TARGET DETAILS

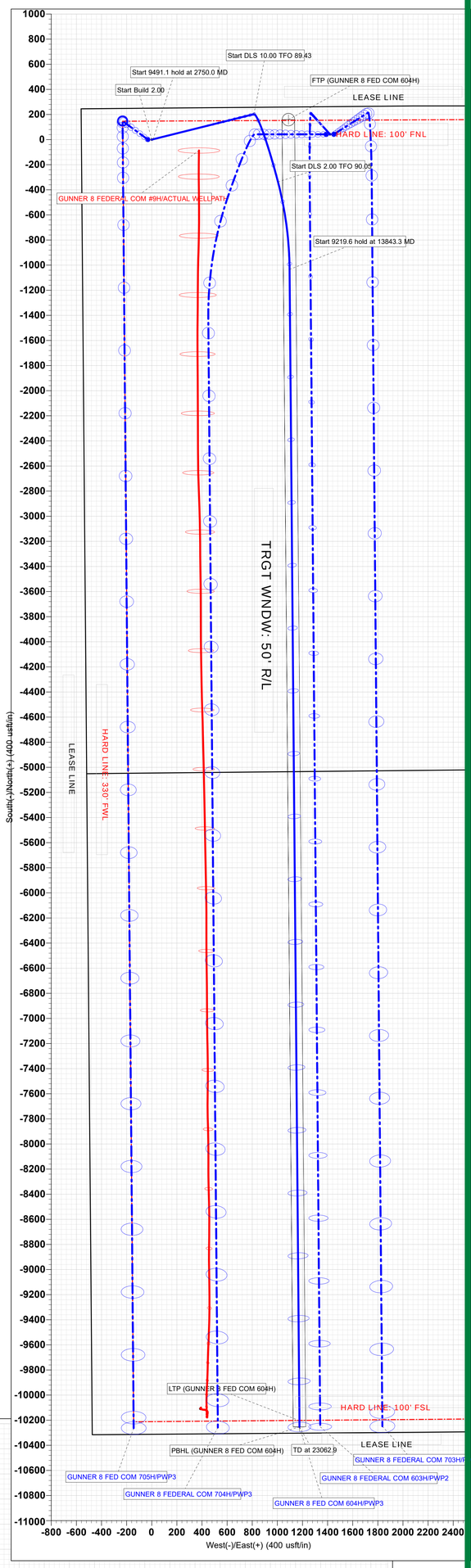
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP (GUNNER 8 FED COM 604H)	12775.0	159.5	1088.6	393595.50	759759.20	32° 4' 45.602 N	103° 29' 40.835 W
LTP (GUNNER 8 FED COM 604H)	12824.0	-10203.2	1175.8	383232.80	759846.40	32° 3' 3.051 N	103° 29' 40.757 W
PBHL (GUNNER 8 FED COM 604H)	12824.0	-10253.2	1176.3	383182.80	759846.90	32° 3' 2.556 N	103° 29' 40.756 W

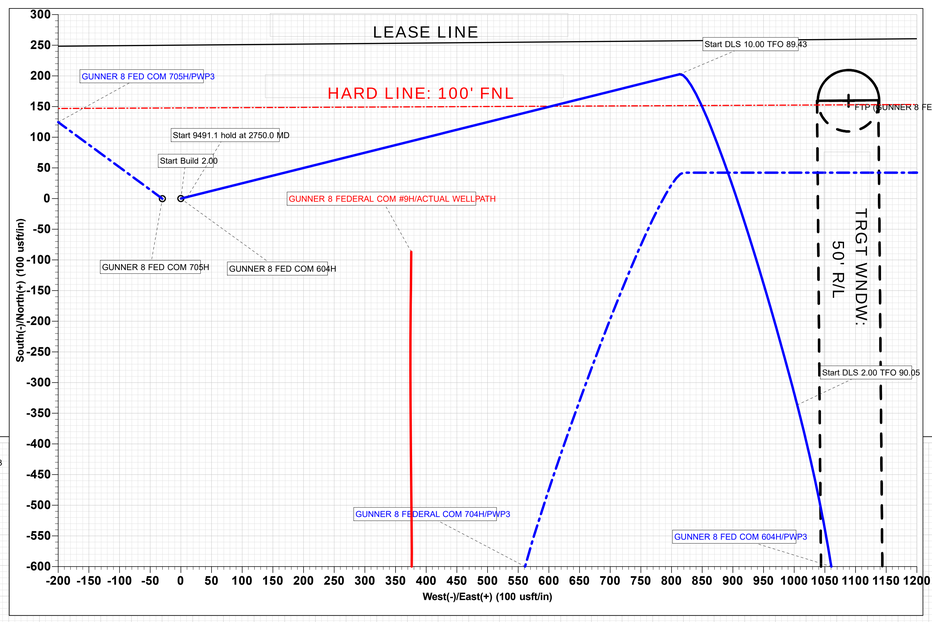


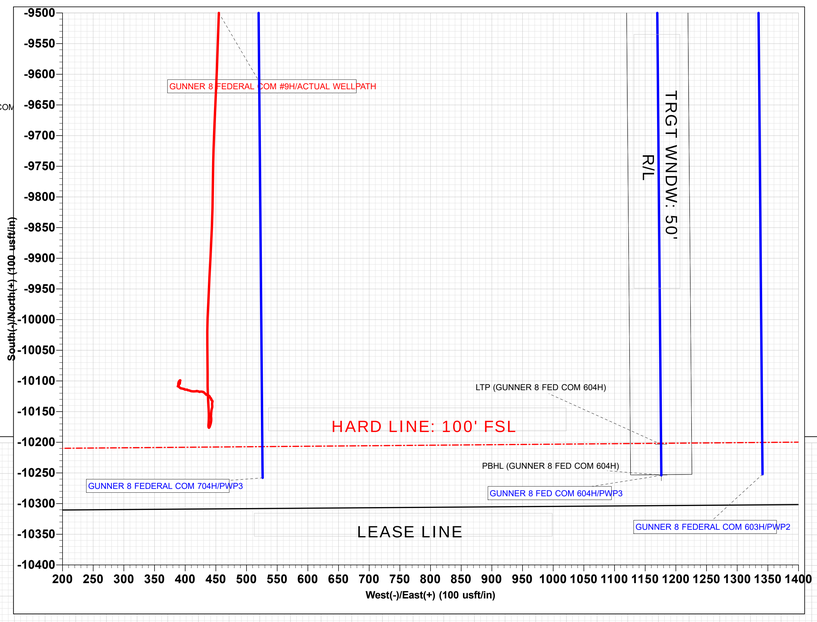


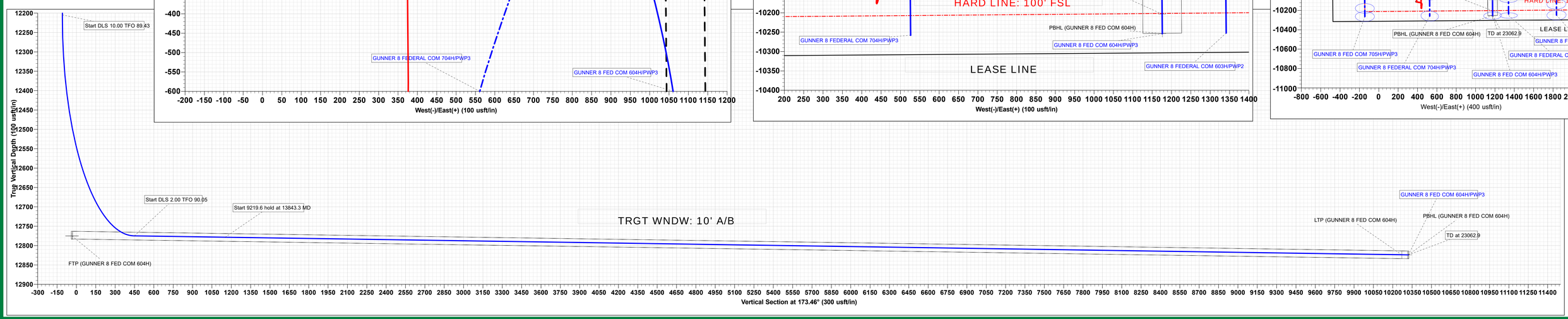
GUNNER 8 FED COM 604H

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2500.0	0.00	0.00	2500.0	0.0	0.0	0.00	0.00	0.0	Start Build 2.00
2750.0	5.00	76.00	2749.7	2.6	10.6	2.00	76.00	-1.4	Start 9491.1 hold at 2750.0 MD
12241.1	5.00	76.00	12204.7	202.8	813.2	0.00	0.00	-108.7	Start DLS 10.00 TFO 89.43
13137.8	89.72	165.40	12775.0	-336.5	1005.0	10.00	89.43	448.8	Start DLS 2.00 TFO 90.05
13843.3	89.72	179.51	12778.5	-1034.1	1097.4	2.00	90.05	1152.4	Start 9219.6 hold at 13843.3 MD
23062.9	89.72	179.51	12824.0	-10253.2	1176.3	0.00	0.00	10320.5	TD at 23062.9









NORTHERN DELAWARE BASIN

LEA COUNTY, NM
BULLDOG
GUNNER 8 FED COM 604H

OWB
PWP3

Anticollision Report

31 March, 2020

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Reference PWP3

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum ellipse separation of 1,000.0 usft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 3/31/2020

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	12,241.1	PWP3 (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
12,241.1	23,062.9	PWP3 (OWB)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
BULLDOG						
GUNNER 8 FED COM 705H - OWB - PWP3	2,500.0	2,499.6	30.1	17.4	2.373	CC, ES, SF
GUNNER 8 FEDERAL COM #9H - OWB - ACTUAL WEL	9,802.2	19,727.0	332.8	204.4	2.592	CC, ES, SF
GUNNER 8 FEDERAL COM 603H - OWB - PWP2	13,840.4	13,739.1	173.2	137.9	4.910	CC
GUNNER 8 FEDERAL COM 603H - OWB - PWP2	23,063.6	22,961.6	185.5	4.6	1.026	Shut in Produces, ES, SF
GUNNER 8 FEDERAL COM 703H - OWB - PWP3	23,063.6	23,012.8	660.0	468.8	3.452	CC, ES, SF
GUNNER 8 FEDERAL COM 704H - OWB - PWP3	12,453.8	12,400.0	158.7	99.7	2.689	CC
GUNNER 8 FEDERAL COM 704H - OWB - PWP3	12,500.0	12,433.1	159.4	99.6	2.668	ES, SF

Offset Design BULLDOG - GUNNER 8 FED COM 705H - OWB - PWP3 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	3.0	3.0	-90.38	-0.2	-30.1	30.1				
100.0	100.0	99.6	99.6	3.0	3.0	-90.38	-0.2	-30.1	30.1	24.1	6.00	5.014	
200.0	200.0	199.6	199.6	3.0	3.0	-90.38	-0.2	-30.1	30.1	24.1	6.04	4.983	
300.0	300.0	299.6	299.6	3.0	3.1	-90.38	-0.2	-30.1	30.1	24.0	6.12	4.917	
400.0	400.0	399.6	399.6	3.0	3.2	-90.38	-0.2	-30.1	30.1	23.9	6.24	4.822	
500.0	500.0	499.6	499.6	3.1	3.4	-90.38	-0.2	-30.1	30.1	23.7	6.40	4.704	
600.0	600.0	599.6	599.6	3.1	3.6	-90.38	-0.2	-30.1	30.1	23.5	6.59	4.570	
700.0	700.0	699.6	699.6	3.1	3.8	-90.38	-0.2	-30.1	30.1	23.3	6.80	4.425	
800.0	800.0	799.6	799.6	3.2	4.0	-90.38	-0.2	-30.1	30.1	23.1	7.04	4.275	
900.0	900.0	899.6	899.6	3.2	4.2	-90.38	-0.2	-30.1	30.1	22.8	7.30	4.124	
1,000.0	1,000.0	999.6	999.6	3.2	4.5	-90.38	-0.2	-30.1	30.1	22.5	7.57	3.975	
1,100.0	1,100.0	1,099.6	1,099.6	3.3	4.8	-90.38	-0.2	-30.1	30.1	22.2	7.86	3.829	
1,200.0	1,200.0	1,199.6	1,199.6	3.4	5.1	-90.38	-0.2	-30.1	30.1	21.9	8.16	3.687	
1,300.0	1,300.0	1,299.6	1,299.6	3.4	5.4	-90.38	-0.2	-30.1	30.1	21.6	8.47	3.552	
1,400.0	1,400.0	1,399.6	1,399.6	3.5	5.7	-90.38	-0.2	-30.1	30.1	21.3	8.79	3.423	
1,500.0	1,500.0	1,499.6	1,499.6	3.5	6.0	-90.38	-0.2	-30.1	30.1	21.0	9.12	3.299	
1,600.0	1,600.0	1,599.6	1,599.6	3.6	6.3	-90.38	-0.2	-30.1	30.1	20.6	9.46	3.182	
1,700.0	1,700.0	1,699.6	1,699.6	3.7	6.6	-90.38	-0.2	-30.1	30.1	20.3	9.80	3.072	
1,800.0	1,800.0	1,799.6	1,799.6	3.8	6.9	-90.38	-0.2	-30.1	30.1	20.0	10.15	2.967	

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

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FED COM 705H - OWB - PWP3 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,900.0	1,900.0	1,899.6	1,899.6	3.9	7.2	-90.38	-0.2	-30.1	30.1	19.6	10.50	2.867	
2,000.0	2,000.0	1,999.6	1,999.6	3.9	7.6	-90.38	-0.2	-30.1	30.1	19.2	10.85	2.773	
2,100.0	2,100.0	2,099.6	2,099.6	4.0	7.9	-90.38	-0.2	-30.1	30.1	18.9	11.21	2.684	
2,200.0	2,200.0	2,199.6	2,199.6	4.1	8.2	-90.38	-0.2	-30.1	30.1	18.5	11.58	2.600	
2,300.0	2,300.0	2,299.6	2,299.6	4.2	8.6	-90.38	-0.2	-30.1	30.1	18.2	11.94	2.520	
2,400.0	2,400.0	2,399.6	2,399.6	4.3	8.9	-90.38	-0.2	-30.1	30.1	17.8	12.31	2.445	
2,500.0	2,500.0	2,499.6	2,499.6	4.4	9.2	-90.38	-0.2	-30.1	30.1	17.4	12.68	2.373	CC, ES, SF
2,600.0	2,600.0	2,599.6	2,599.6	4.5	9.6	-167.11	-0.2	-30.1	31.8	18.7	13.06	2.435	
2,700.0	2,699.8	2,699.4	2,699.4	4.5	9.9	-168.91	-0.2	-30.1	36.9	23.5	13.45	2.745	
2,750.0	2,749.7	2,749.3	2,749.3	4.5	10.1	-169.95	-0.2	-30.1	40.8	27.1	13.65	2.988	
2,800.0	2,799.5	2,799.1	2,799.1	4.6	10.3	-170.92	-0.2	-30.1	45.1	31.2	13.85	3.255	
2,900.0	2,899.1	2,898.7	2,898.7	4.6	10.6	-172.39	-0.2	-30.1	53.7	39.4	14.26	3.766	
3,000.0	2,998.7	2,998.3	2,998.3	4.7	10.9	-173.45	-0.2	-30.1	62.3	47.7	14.67	4.250	
3,100.0	3,098.4	3,098.0	3,098.0	4.7	11.3	-174.25	-0.2	-30.1	71.0	55.9	15.09	4.706	
3,200.0	3,198.0	3,197.6	3,197.6	4.8	11.6	-174.88	-0.2	-30.1	79.7	64.2	15.51	5.138	
3,300.0	3,297.6	3,297.2	3,297.2	4.9	12.0	-175.38	-0.2	-30.1	88.4	72.4	15.94	5.546	
3,400.0	3,397.2	3,396.8	3,396.8	4.9	12.3	-175.80	-0.2	-30.1	97.1	80.7	16.36	5.932	
3,500.0	3,496.8	3,496.4	3,496.4	5.0	12.7	-176.14	-0.2	-30.1	105.8	89.0	16.79	6.298	
3,600.0	3,596.4	3,596.0	3,596.0	5.1	13.0	-176.44	-0.2	-30.1	114.5	97.2	17.23	6.644	
3,700.0	3,696.1	3,695.7	3,695.7	5.1	13.4	-176.69	-0.2	-30.1	123.2	105.5	17.66	6.972	
3,800.0	3,795.7	3,795.3	3,795.3	5.2	13.7	-176.91	-0.2	-30.1	131.9	113.8	18.10	7.284	
3,900.0	3,895.3	3,894.9	3,894.9	5.3	14.1	-177.10	-0.2	-30.1	140.6	122.0	18.54	7.580	
4,000.0	3,994.9	3,994.5	3,994.5	5.4	14.4	-177.27	-0.2	-30.1	149.3	130.3	18.99	7.862	
4,100.0	4,094.5	4,094.1	4,094.1	5.5	14.8	-177.42	-0.2	-30.1	158.0	138.5	19.43	8.130	
4,200.0	4,194.2	4,193.8	4,193.8	5.6	15.1	-177.55	-0.2	-30.1	166.7	146.8	19.88	8.385	
4,300.0	4,293.8	4,293.4	4,293.4	5.6	15.5	-177.68	-0.2	-30.1	175.4	155.1	20.33	8.628	
4,400.0	4,393.4	4,393.0	4,393.0	5.7	15.8	-177.79	-0.2	-30.1	184.1	163.3	20.78	8.860	
4,500.0	4,493.0	4,492.6	4,492.6	5.8	16.2	-177.89	-0.2	-30.1	192.8	171.6	21.23	9.082	
4,600.0	4,592.6	4,592.2	4,592.2	5.9	16.5	-177.98	-0.2	-30.1	201.5	179.8	21.68	9.294	
4,700.0	4,692.3	4,691.9	4,691.9	6.0	16.9	-178.06	-0.2	-30.1	210.2	188.1	22.14	9.496	
4,800.0	4,791.9	4,791.5	4,791.5	6.1	17.2	-178.14	-0.2	-30.1	218.9	196.3	22.59	9.690	
4,900.0	4,891.5	4,891.1	4,891.1	6.2	17.6	-178.21	-0.2	-30.1	227.7	204.6	23.05	9.876	
5,000.0	4,991.1	4,990.7	4,990.7	6.3	17.9	-178.28	-0.2	-30.1	236.4	212.9	23.51	10.053	
5,100.0	5,090.7	5,090.3	5,090.3	6.4	18.3	-178.34	-0.2	-30.1	245.1	221.1	23.97	10.224	
5,200.0	5,190.4	5,190.0	5,190.0	6.5	18.6	-178.39	-0.2	-30.1	253.8	229.4	24.43	10.388	
5,300.0	5,290.0	5,289.6	5,289.6	6.6	19.0	-178.45	-0.2	-30.1	262.5	237.6	24.89	10.545	
5,400.0	5,389.6	5,385.2	5,385.2	6.7	19.3	-178.34	0.4	-30.9	271.9	246.5	25.34	10.730	
5,500.0	5,489.2	5,480.0	5,479.9	6.8	19.6	-177.89	2.3	-33.5	282.9	257.1	25.76	10.981	
5,600.0	5,588.8	5,574.3	5,574.1	6.9	20.0	-177.13	5.6	-38.0	295.6	269.4	26.17	11.293	
5,700.0	5,688.5	5,670.0	5,669.5	7.0	20.3	-176.12	10.3	-44.4	309.8	283.3	26.58	11.657	
5,800.0	5,788.1	5,768.8	5,767.9	7.1	20.6	-175.12	15.4	-51.3	324.5	297.5	27.00	12.019	
5,900.0	5,887.7	5,867.6	5,866.3	7.2	21.0	-174.20	20.4	-58.2	339.3	311.9	27.43	12.372	
6,000.0	5,987.3	5,966.3	5,964.6	7.3	21.3	-173.36	25.5	-65.1	354.2	326.4	27.86	12.716	
6,100.0	6,086.9	6,065.1	6,063.0	7.4	21.7	-172.58	30.6	-72.0	369.1	340.9	28.29	13.050	
6,200.0	6,186.6	6,163.8	6,161.4	7.5	22.0	-171.87	35.7	-79.0	384.1	355.4	28.72	13.375	
6,300.0	6,286.2	6,262.6	6,259.8	7.6	22.4	-171.21	40.7	-85.9	399.2	370.0	29.16	13.691	
6,400.0	6,385.8	6,361.4	6,358.2	7.8	22.7	-170.60	45.8	-92.8	414.3	384.7	29.60	13.999	
6,500.0	6,485.4	6,460.1	6,456.6	7.9	23.1	-170.03	50.9	-99.7	429.4	399.4	30.04	14.298	
6,600.0	6,585.0	6,558.9	6,555.0	8.0	23.4	-169.50	56.0	-106.6	444.6	414.2	30.48	14.589	
6,700.0	6,684.7	6,657.6	6,653.3	8.1	23.8	-169.00	61.0	-113.5	459.9	428.9	30.92	14.872	
6,800.0	6,784.3	6,756.4	6,751.7	8.2	24.1	-168.54	66.1	-120.4	475.1	443.7	31.37	15.147	
6,900.0	6,883.9	6,855.2	6,850.1	8.3	24.5	-168.10	71.2	-127.3	490.4	458.6	31.81	15.414	

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

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FED COM 705H - OWB - PWP3 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,000.0	6,983.5	6,953.9	6,948.5	8.4	24.8	-167.70	76.3	-134.3	505.7	473.4	32.26	15.674	
7,100.0	7,083.1	7,052.7	7,046.9	8.5	25.2	-167.31	81.3	-141.2	521.0	488.3	32.71	15.927	
7,200.0	7,182.7	7,151.4	7,145.3	8.7	25.5	-166.95	86.4	-148.1	536.4	503.2	33.16	16.173	
7,300.0	7,282.4	7,250.2	7,243.7	8.8	25.9	-166.61	91.5	-155.0	551.7	518.1	33.62	16.412	
7,400.0	7,382.0	7,349.0	7,342.0	8.9	26.2	-166.28	96.6	-161.9	567.1	533.1	34.07	16.645	
7,500.0	7,481.6	7,447.7	7,440.4	9.0	26.6	-165.98	101.6	-168.8	582.5	548.0	34.53	16.872	
7,600.0	7,581.2	7,546.5	7,538.8	9.1	26.9	-165.69	106.7	-175.7	597.9	563.0	34.98	17.093	
7,700.0	7,680.8	7,645.2	7,637.2	9.2	27.3	-165.41	111.8	-182.7	613.4	577.9	35.44	17.307	
7,800.0	7,780.5	7,744.0	7,735.6	9.4	27.6	-165.15	116.9	-189.6	628.8	592.9	35.90	17.517	
7,900.0	7,880.1	7,842.7	7,834.0	9.5	28.0	-164.90	122.0	-196.5	644.3	607.9	36.36	17.720	
8,000.0	7,979.7	7,941.5	7,932.4	9.6	28.3	-164.66	127.0	-203.4	659.8	622.9	36.82	17.919	
8,100.0	8,079.3	8,040.3	8,030.8	9.7	28.7	-164.43	132.1	-210.3	675.2	638.0	37.28	18.112	
8,200.0	8,178.9	8,139.0	8,129.1	9.8	29.0	-164.21	137.2	-217.2	690.7	653.0	37.74	18.301	
8,300.0	8,278.6	8,247.2	8,237.0	9.9	29.4	-164.01	142.4	-224.4	705.9	667.7	38.23	18.465	
8,400.0	8,378.2	8,364.4	8,354.0	10.1	29.8	-163.94	146.3	-229.6	718.8	680.1	38.74	18.557	
8,500.0	8,477.8	8,482.3	8,471.9	10.2	30.2	-164.04	148.0	-232.0	729.2	690.0	39.24	18.582	
8,600.0	8,577.4	8,587.5	8,577.0	10.3	30.6	-164.23	148.1	-232.1	737.7	698.0	39.73	18.567	
8,700.0	8,677.0	8,687.1	8,676.6	10.4	31.0	-164.41	148.1	-232.1	746.1	705.9	40.22	18.553	
8,800.0	8,776.7	8,786.7	8,776.3	10.5	31.3	-164.58	148.1	-232.1	754.5	713.8	40.70	18.540	
8,900.0	8,876.3	8,886.4	8,875.9	10.7	31.7	-164.76	148.1	-232.1	762.9	721.7	41.18	18.527	
9,000.0	8,975.9	8,986.0	8,975.5	10.8	32.0	-164.93	148.1	-232.1	771.3	729.7	41.66	18.514	
9,100.0	9,075.5	9,085.6	9,075.1	10.9	32.4	-165.10	148.1	-232.1	779.8	737.6	42.15	18.501	
9,200.0	9,175.1	9,185.2	9,174.7	11.0	32.7	-165.26	148.1	-232.1	788.2	745.6	42.63	18.489	
9,300.0	9,274.8	9,284.8	9,274.4	11.2	33.1	-165.42	148.1	-232.1	796.6	753.5	43.11	18.478	
9,400.0	9,374.4	9,384.5	9,374.0	11.3	33.4	-165.57	148.1	-232.1	805.1	761.5	43.60	18.466	
9,500.0	9,474.0	9,484.1	9,473.6	11.4	33.8	-165.73	148.1	-232.1	813.5	769.4	44.08	18.455	
9,600.0	9,573.6	9,583.7	9,573.2	11.5	34.2	-165.88	148.1	-232.1	822.0	777.4	44.57	18.444	
9,700.0	9,673.2	9,683.3	9,672.8	11.6	34.5	-166.02	148.1	-232.1	830.4	785.4	45.05	18.433	
9,800.0	9,772.9	9,782.9	9,772.5	11.8	34.9	-166.17	148.1	-232.1	838.9	793.3	45.53	18.423	
9,900.0	9,872.5	9,882.6	9,872.1	11.9	35.2	-166.31	148.1	-232.1	847.3	801.3	46.02	18.413	
10,000.0	9,972.1	9,982.2	9,971.7	12.0	35.6	-166.45	148.1	-232.1	855.8	809.3	46.50	18.403	
10,100.0	10,071.7	10,081.8	10,071.3	12.1	35.9	-166.58	148.1	-232.1	864.3	817.3	46.99	18.394	
10,200.0	10,171.3	10,181.4	10,170.9	12.3	36.3	-166.71	148.1	-232.1	872.8	825.3	47.47	18.384	
10,300.0	10,271.0	10,281.0	10,270.6	12.4	36.6	-166.84	148.1	-232.1	881.3	833.3	47.96	18.375	
10,400.0	10,370.6	10,380.7	10,370.2	12.5	37.0	-166.97	148.1	-232.1	889.8	841.3	48.44	18.366	
10,500.0	10,470.2	10,480.3	10,469.8	12.6	37.3	-167.10	148.1	-232.1	898.2	849.3	48.93	18.358	
10,600.0	10,569.8	10,579.9	10,569.4	12.8	37.7	-167.22	148.1	-232.1	906.7	857.3	49.42	18.349	
10,700.0	10,669.4	10,679.5	10,669.0	12.9	38.1	-167.34	148.1	-232.1	915.3	865.4	49.90	18.341	
10,800.0	10,769.0	10,779.1	10,768.6	13.0	38.4	-167.46	148.1	-232.1	923.8	873.4	50.39	18.333	
10,900.0	10,868.7	10,878.8	10,868.3	13.1	38.8	-167.58	148.1	-232.1	932.3	881.4	50.87	18.325	
11,000.0	10,968.3	10,978.4	10,967.9	13.3	39.1	-167.69	148.1	-232.1	940.8	889.4	51.36	18.317	
11,100.0	11,067.9	11,078.0	11,067.5	13.4	39.5	-167.80	148.1	-232.1	949.3	897.5	51.85	18.310	
11,200.0	11,167.5	11,177.6	11,167.1	13.5	39.8	-167.91	148.1	-232.1	957.8	905.5	52.33	18.302	
11,300.0	11,267.1	11,277.2	11,266.7	13.6	40.2	-168.02	148.1	-232.1	966.4	913.5	52.82	18.295	
11,400.0	11,366.8	11,376.8	11,366.4	13.8	40.5	-168.13	148.1	-232.1	974.9	921.6	53.31	18.288	
11,500.0	11,466.4	11,476.5	11,466.0	13.9	40.9	-168.23	148.1	-232.1	983.4	929.6	53.79	18.281	
11,600.0	11,566.0	11,576.1	11,565.6	14.0	41.2	-168.33	148.1	-232.1	991.9	937.7	54.28	18.274	

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FEDERAL COM #9H - OWB - ACTUAL WELLPATH — **Offset Site Error:** 0.0 usft

Survey Program: 100- VES GyroFlex, 9207-MWD — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	8,876.3	19,727.0	9,827.3	10.7	166.7	148.28	-86.7	375.6	961.6	864.4	97.17	9.896	
9,000.0	8,975.9	19,727.0	9,827.3	10.8	166.7	148.28	-86.7	375.6	868.5	770.5	98.02	8.860	
9,100.0	9,075.5	19,727.0	9,827.3	10.9	166.7	148.28	-86.7	375.6	777.1	677.9	99.15	7.837	
9,200.0	9,175.1	19,727.0	9,827.3	11.0	166.7	148.28	-86.7	375.6	688.0	587.3	100.72	6.831	
9,300.0	9,274.8	19,727.0	9,827.3	11.2	166.7	148.28	-86.7	375.6	602.5	499.5	102.94	5.852	
9,400.0	9,374.4	19,727.0	9,827.3	11.3	166.7	148.28	-86.7	375.6	522.0	415.9	106.15	4.918	
9,500.0	9,474.0	19,727.0	9,827.3	11.4	166.7	148.28	-86.7	375.6	449.5	338.8	110.71	4.061	
9,600.0	9,573.6	19,727.0	9,827.3	11.5	166.7	148.28	-86.7	375.6	389.4	272.7	116.74	3.336	
9,700.0	9,673.2	19,727.0	9,827.3	11.6	166.7	148.28	-86.7	375.6	348.2	224.8	123.36	2.822	
9,800.0	9,772.9	19,727.0	9,827.3	11.8	166.7	148.28	-86.7	375.6	332.8	204.5	128.33	2.594	
9,802.2	9,775.0	19,727.0	9,827.3	11.8	166.7	148.28	-86.7	375.6	332.8	204.4	128.40	2.592	CC, ES, SF
9,900.0	9,872.5	19,727.0	9,827.3	11.9	166.7	148.28	-86.7	375.6	346.9	217.3	129.63	2.676	
10,000.0	9,972.1	19,727.0	9,827.3	12.0	166.7	148.28	-86.7	375.6	387.2	259.6	127.55	3.036	
10,100.0	10,071.7	19,727.0	9,827.3	12.1	166.7	148.28	-86.7	375.6	446.6	322.6	124.01	3.602	
10,200.0	10,171.3	19,727.0	9,827.3	12.3	166.7	148.28	-86.7	375.6	518.7	398.2	120.51	4.304	
10,300.0	10,271.0	19,727.0	9,827.3	12.4	166.7	148.28	-86.7	375.6	598.8	481.2	117.62	5.091	
10,400.0	10,370.6	19,727.0	9,827.3	12.5	166.7	148.28	-86.7	375.6	684.2	568.9	115.38	5.930	
10,500.0	10,470.2	19,727.0	9,827.3	12.6	166.7	148.28	-86.7	375.6	773.1	659.4	113.70	6.800	
10,600.0	10,569.8	19,727.0	9,827.3	12.8	166.7	148.28	-86.7	375.6	864.5	752.0	112.45	7.687	
10,700.0	10,669.4	19,727.0	9,827.3	12.9	166.7	148.28	-86.7	375.6	957.5	846.0	111.53	8.585	

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FEDERAL COM 603H - OWB - PWP2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Standard Keeper 104, 12141-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,200.0	7,182.7	7,217.9	7,216.9	8.7	9.6	14.75	85.0	1,381.0	994.4	980.8	13.59	73.154	
7,300.0	7,282.4	7,317.3	7,316.2	8.8	9.7	14.73	87.5	1,378.7	983.6	969.9	13.78	71.359	
7,400.0	7,382.0	7,416.7	7,415.6	8.9	9.8	14.71	90.1	1,376.4	972.9	958.9	13.98	69.607	
7,500.0	7,481.6	7,516.1	7,515.0	9.0	9.9	14.69	92.6	1,374.1	962.1	947.9	14.17	67.898	
7,600.0	7,581.2	7,615.5	7,614.3	9.1	10.0	14.67	95.1	1,371.8	951.3	937.0	14.36	66.229	
7,700.0	7,680.8	7,714.9	7,713.7	9.2	10.1	14.65	97.7	1,369.5	940.6	926.0	14.56	64.599	
7,800.0	7,780.5	7,814.4	7,813.0	9.4	10.2	14.63	100.2	1,367.1	929.8	915.0	14.76	63.009	
7,900.0	7,880.1	7,913.8	7,912.4	9.5	10.3	14.61	102.7	1,364.8	919.0	904.1	14.95	61.456	
8,000.0	7,979.7	8,013.2	8,011.7	9.6	10.5	14.59	105.3	1,362.5	908.3	893.1	15.15	59.940	
8,100.0	8,079.3	8,112.6	8,111.1	9.7	10.6	14.57	107.8	1,360.2	897.5	882.2	15.35	58.460	
8,200.0	8,178.9	8,212.0	8,210.5	9.8	10.7	14.55	110.3	1,357.9	886.7	871.2	15.55	57.015	
8,300.0	8,278.6	8,311.5	8,309.8	9.9	10.8	14.53	112.9	1,355.6	876.0	860.2	15.75	55.603	
8,400.0	8,378.2	8,410.9	8,409.2	10.1	10.9	14.50	115.4	1,353.3	865.2	849.3	15.96	54.224	
8,500.0	8,477.8	8,510.3	8,508.5	10.2	11.0	14.48	118.0	1,351.0	854.4	838.3	16.16	52.877	
8,600.0	8,577.4	8,609.7	8,607.9	10.3	11.1	14.45	120.5	1,348.7	843.7	827.3	16.36	51.561	
8,700.0	8,677.0	8,709.1	8,707.3	10.4	11.2	14.43	123.0	1,346.4	832.9	816.4	16.57	50.275	
8,800.0	8,776.7	8,808.5	8,806.6	10.5	11.4	14.40	125.6	1,344.1	822.2	805.4	16.77	49.018	
8,900.0	8,876.3	8,908.0	8,906.0	10.7	11.5	14.38	128.1	1,341.8	811.4	794.4	16.98	47.790	
9,000.0	8,975.9	9,007.4	9,005.3	10.8	11.6	14.35	130.6	1,339.5	800.6	783.4	17.18	46.589	
9,100.0	9,075.5	9,106.8	9,104.7	10.9	11.7	14.32	133.2	1,337.2	789.9	772.5	17.39	45.415	
9,200.0	9,175.1	9,206.2	9,204.1	11.0	11.8	14.30	135.7	1,334.9	779.1	761.5	17.60	44.268	
9,300.0	9,274.8	9,305.6	9,303.4	11.2	11.9	14.27	138.3	1,332.6	768.3	750.5	17.81	43.145	
9,400.0	9,374.4	9,405.1	9,402.8	11.3	12.1	14.24	140.8	1,330.3	757.6	739.6	18.02	42.048	
9,500.0	9,474.0	9,504.5	9,502.1	11.4	12.2	14.21	143.3	1,328.0	746.8	728.6	18.23	40.974	
9,600.0	9,573.6	9,603.9	9,601.5	11.5	12.3	14.17	145.9	1,325.7	736.0	717.6	18.44	39.923	
9,700.0	9,673.2	9,703.3	9,700.9	11.6	12.4	14.14	148.4	1,323.4	725.3	706.6	18.65	38.896	
9,800.0	9,772.9	9,802.7	9,800.2	11.8	12.5	14.11	150.9	1,321.1	714.5	695.7	18.86	37.890	
9,900.0	9,872.5	9,902.2	9,899.6	11.9	12.6	14.07	153.5	1,318.8	703.8	684.7	19.07	36.905	
10,000.0	9,972.1	10,001.6	9,998.9	12.0	12.8	14.04	156.0	1,316.5	693.0	673.7	19.28	35.941	
10,100.0	10,071.7	10,101.0	10,098.3	12.1	12.9	14.00	158.5	1,314.2	682.2	662.7	19.49	34.998	
10,200.0	10,171.3	10,200.4	10,197.7	12.3	13.0	13.96	161.1	1,311.9	671.5	651.8	19.71	34.074	
10,300.0	10,271.0	10,299.8	10,297.0	12.4	13.1	13.92	163.6	1,309.6	660.7	640.8	19.92	33.169	
10,400.0	10,370.6	10,399.2	10,396.4	12.5	13.2	13.88	166.2	1,307.3	650.0	629.8	20.13	32.283	
10,500.0	10,470.2	10,498.7	10,495.7	12.6	13.4	13.84	168.7	1,305.0	639.2	618.8	20.35	31.415	
10,600.0	10,569.8	10,598.1	10,595.1	12.8	13.5	13.80	171.2	1,302.7	628.4	607.9	20.56	30.564	
10,700.0	10,669.4	10,697.5	10,694.4	12.9	13.6	13.75	173.8	1,300.4	617.7	596.9	20.78	29.731	
10,800.0	10,769.0	10,796.9	10,793.8	13.0	13.7	13.71	176.3	1,298.1	606.9	585.9	20.99	28.914	
10,900.0	10,868.7	10,896.3	10,893.2	13.1	13.8	13.66	178.8	1,295.8	596.2	575.0	21.21	28.113	
11,000.0	10,968.3	10,995.8	10,992.5	13.3	14.0	13.61	181.4	1,293.5	585.4	564.0	21.42	27.328	
11,100.0	11,067.9	11,095.2	11,091.9	13.4	14.1	13.56	183.9	1,291.2	574.6	553.0	21.64	26.558	
11,200.0	11,167.5	11,194.6	11,191.2	13.5	14.2	13.50	186.5	1,288.9	563.9	542.0	21.85	25.804	
11,300.0	11,267.1	11,294.0	11,290.6	13.6	14.3	13.45	189.0	1,286.6	553.1	531.1	22.07	25.064	
11,400.0	11,366.8	11,393.4	11,390.0	13.8	14.4	13.39	191.5	1,284.3	542.4	520.1	22.29	24.338	
11,500.0	11,466.4	11,492.8	11,489.3	13.9	14.6	13.33	194.1	1,282.0	531.6	509.1	22.50	23.626	
11,600.0	11,566.0	11,592.3	11,588.7	14.0	14.7	13.26	196.6	1,279.7	520.9	498.1	22.72	22.927	
11,700.0	11,665.6	11,691.7	11,688.0	14.2	14.8	13.20	199.1	1,277.4	510.1	487.2	22.93	22.241	
11,800.0	11,765.2	11,791.1	11,787.4	14.3	14.9	13.13	201.7	1,275.1	499.3	476.2	23.15	21.569	
11,900.0	11,864.9	11,890.5	11,886.8	14.4	15.0	13.06	204.2	1,272.8	488.6	465.2	23.37	20.908	
12,000.0	11,964.5	11,989.9	11,986.1	14.5	15.2	12.98	206.8	1,270.5	477.8	454.3	23.59	20.260	
12,100.0	12,064.1	12,089.4	12,085.5	14.7	15.3	12.91	209.3	1,268.2	467.1	443.3	23.80	19.624	
12,200.0	12,163.7	12,189.1	12,185.2	14.8	15.4	12.94	210.9	1,265.9	456.3	432.4	23.97	19.034	
12,241.1	12,204.7	12,230.1	12,226.0	14.9	15.4	13.39	208.1	1,264.9	451.9	427.8	24.07	18.773	

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

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FEDERAL COM 603H - OWB - PWP2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Standard Keeper 104, 12141-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,250.0	12,213.5	12,238.8	12,234.7	14.9	15.4	3.42	207.2	1,264.7	450.9	426.8	24.08	18.727	
12,300.0	12,263.2	12,287.9	12,283.1	14.9	15.4	-35.57	199.3	1,263.7	444.9	420.7	24.12	18.445	
12,350.0	12,312.5	12,336.2	12,330.0	14.9	15.4	-50.93	187.5	1,262.7	437.9	413.7	24.16	18.126	
12,400.0	12,360.9	12,384.0	12,375.2	14.9	15.4	-57.98	172.1	1,261.8	430.0	405.8	24.20	17.771	
12,450.0	12,408.2	12,431.2	12,418.4	14.9	15.4	-61.94	153.1	1,261.0	421.4	397.1	24.25	17.378	
12,500.0	12,453.8	12,477.8	12,459.4	14.9	15.4	-64.50	131.0	1,260.2	412.0	387.7	24.31	16.947	
12,550.0	12,497.6	12,523.9	12,498.0	14.9	15.5	-66.35	105.9	1,259.6	401.9	377.5	24.39	16.476	
12,600.0	12,539.2	12,569.5	12,534.1	14.9	15.5	-67.81	78.2	1,259.0	391.2	366.7	24.50	15.966	
12,650.0	12,578.2	12,614.7	12,567.7	15.0	15.5	-69.03	47.9	1,258.4	379.9	355.3	24.64	15.418	
12,700.0	12,614.3	12,659.5	12,598.4	15.0	15.6	-70.13	15.3	1,258.0	368.2	343.4	24.82	14.834	
12,750.0	12,647.4	12,704.0	12,626.4	15.1	15.6	-71.14	-19.3	1,257.7	356.1	331.0	25.04	14.220	
12,800.0	12,677.0	12,750.0	12,652.4	15.1	15.6	-72.10	-57.3	1,257.4	343.6	318.3	25.29	13.586	
12,850.0	12,703.1	12,792.4	12,673.6	15.2	15.7	-73.10	-94.0	1,257.2	330.9	305.3	25.60	12.928	
12,900.0	12,725.4	12,836.4	12,692.6	15.3	15.7	-74.08	-133.6	1,257.1	318.0	292.1	25.92	12.268	
12,950.0	12,743.7	12,880.3	12,708.5	15.4	15.7	-75.08	-174.5	1,257.1	305.0	278.8	26.27	11.612	
13,000.0	12,757.9	12,924.2	12,721.3	15.5	15.8	-76.12	-216.6	1,257.2	292.1	265.4	26.63	10.969	
13,050.0	12,767.9	12,968.2	12,730.8	15.6	15.8	-77.19	-259.5	1,257.3	279.2	252.2	26.98	10.347	
13,100.0	12,773.5	13,012.4	12,737.0	15.7	15.9	-78.32	-303.2	1,257.5	266.4	239.1	27.32	9.752	
13,137.8	12,775.0	13,045.9	12,739.5	15.8	15.9	-79.21	-336.6	1,257.8	257.0	229.4	27.56	9.324	
13,200.0	12,775.3	13,104.1	12,740.1	16.0	15.9	-78.73	-394.9	1,258.2	242.6	214.6	28.08	8.642	
13,300.0	12,775.8	13,202.0	12,740.2	16.3	16.0	-77.70	-492.7	1,259.1	222.6	193.5	29.07	7.655	
13,400.0	12,776.3	13,300.5	12,740.3	16.7	16.1	-76.67	-591.2	1,259.9	205.9	175.7	30.16	6.827	
13,500.0	12,776.8	13,399.6	12,740.4	17.1	16.2	-75.69	-690.3	1,260.7	192.7	161.4	31.31	6.154	
13,600.0	12,777.3	13,499.0	12,740.5	17.5	16.3	-74.84	-789.7	1,261.6	182.9	150.4	32.50	5.628	
13,700.0	12,777.7	13,598.8	12,740.6	17.9	16.5	-74.19	-889.5	1,262.4	176.5	142.8	33.67	5.241	
13,800.0	12,778.2	13,698.7	12,740.7	18.4	16.8	-73.80	-989.4	1,263.2	173.5	138.6	34.82	4.981	
13,840.4	12,778.4	13,739.1	12,740.7	18.6	16.9	-73.72	-1,029.8	1,263.6	173.2	137.9	35.27	4.910	CC
13,843.3	12,778.5	13,742.0	12,740.7	18.6	16.9	-73.72	-1,032.7	1,263.6	173.2	137.9	35.30	4.906	
13,900.0	12,778.7	13,798.7	12,740.8	18.9	17.1	-73.65	-1,089.4	1,264.1	173.2	137.3	35.93	4.821	
14,000.0	12,779.2	13,898.7	12,740.9	19.4	17.4	-73.52	-1,189.4	1,264.9	173.3	136.2	37.09	4.674	
14,100.0	12,779.7	13,998.7	12,741.0	19.9	17.8	-73.40	-1,289.4	1,265.8	173.4	135.1	38.28	4.530	
14,200.0	12,780.2	14,098.7	12,741.1	20.5	18.3	-73.27	-1,389.4	1,266.6	173.5	134.0	39.52	4.392	
14,300.0	12,780.7	14,198.7	12,741.2	21.1	18.9	-73.15	-1,489.4	1,267.5	173.6	132.8	40.78	4.258	
14,400.0	12,781.2	14,298.7	12,741.3	21.7	19.5	-73.02	-1,589.4	1,268.3	173.7	131.7	42.08	4.129	
14,500.0	12,781.7	14,398.7	12,741.4	22.3	20.1	-72.90	-1,689.4	1,269.1	173.8	130.4	43.41	4.005	
14,600.0	12,782.2	14,498.7	12,741.5	22.9	20.8	-72.77	-1,789.4	1,270.0	173.9	129.2	44.76	3.886	
14,700.0	12,782.7	14,598.7	12,741.6	23.6	21.4	-72.65	-1,889.4	1,270.8	174.0	127.9	46.14	3.772	
14,800.0	12,783.2	14,698.7	12,741.7	24.2	22.2	-72.52	-1,989.4	1,271.7	174.1	126.6	47.54	3.664	
14,900.0	12,783.7	14,798.7	12,741.8	24.9	22.9	-72.40	-2,089.4	1,272.5	174.3	125.3	48.95	3.560	
15,000.0	12,784.2	14,898.7	12,741.9	25.6	23.6	-72.27	-2,189.4	1,273.4	174.4	124.0	50.39	3.460	
15,100.0	12,784.7	14,998.7	12,742.0	26.3	24.4	-72.15	-2,289.4	1,274.2	174.5	122.6	51.84	3.366	
15,200.0	12,785.2	15,098.7	12,742.1	27.0	25.1	-72.02	-2,389.4	1,275.0	174.6	121.3	53.30	3.275	
15,300.0	12,785.7	15,198.7	12,742.2	27.8	25.9	-71.90	-2,489.4	1,275.9	174.7	119.9	54.78	3.189	
15,400.0	12,786.1	15,298.7	12,742.3	28.5	26.7	-71.78	-2,589.4	1,276.7	174.8	118.5	56.28	3.106	
15,500.0	12,786.6	15,398.7	12,742.4	29.2	27.5	-71.65	-2,689.4	1,277.6	174.9	117.1	57.78	3.027	
15,600.0	12,787.1	15,498.7	12,742.5	30.0	28.2	-71.53	-2,789.4	1,278.4	175.0	115.7	59.30	2.952	
15,700.0	12,787.6	15,598.7	12,742.6	30.7	29.0	-71.41	-2,889.3	1,279.3	175.1	114.3	60.82	2.879	
15,800.0	12,788.1	15,698.7	12,742.7	31.5	29.8	-71.28	-2,989.3	1,280.1	175.2	112.9	62.35	2.810	
15,900.0	12,788.6	15,798.7	12,742.8	32.3	30.6	-71.16	-3,089.3	1,280.9	175.4	111.5	63.90	2.744	
16,000.0	12,789.1	15,898.7	12,742.9	33.0	31.5	-71.04	-3,189.3	1,281.8	175.5	110.0	65.44	2.681	
16,100.0	12,789.6	15,998.7	12,743.0	33.8	32.3	-70.91	-3,289.3	1,282.6	175.6	108.6	67.00	2.621	
16,200.0	12,790.1	16,098.7	12,743.1	34.6	33.1	-70.79	-3,389.3	1,283.5	175.7	107.1	68.56	2.563	

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

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FEDERAL COM 603H - OWB - PWP2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Standard Keeper 104, 12141-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,300.0	12,790.6	16,198.7	12,743.2	35.4	33.9	-70.67	-3,489.3	1,284.3	175.8	105.7	70.13	2.507	
16,400.0	12,791.1	16,298.7	12,743.3	36.2	34.7	-70.55	-3,589.3	1,285.2	175.9	104.2	71.71	2.453	
16,500.0	12,791.6	16,398.7	12,743.4	36.9	35.5	-70.42	-3,689.3	1,286.0	176.1	102.8	73.29	2.402	
16,600.0	12,792.1	16,498.7	12,743.5	37.7	36.4	-70.30	-3,789.3	1,286.8	176.2	101.3	74.88	2.353	
16,700.0	12,792.6	16,598.7	12,743.6	38.5	37.2	-70.18	-3,889.3	1,287.7	176.3	99.8	76.47	2.306	
16,800.0	12,793.1	16,698.7	12,743.7	39.3	38.0	-70.06	-3,989.3	1,288.5	176.4	98.4	78.06	2.260	
16,900.0	12,793.6	16,798.7	12,743.8	40.1	38.8	-69.94	-4,089.3	1,289.4	176.5	96.9	79.66	2.216	
17,000.0	12,794.0	16,898.7	12,743.9	40.9	39.7	-69.82	-4,189.3	1,290.2	176.7	95.4	81.26	2.174	
17,100.0	12,794.5	16,998.7	12,744.0	41.7	40.5	-69.69	-4,289.3	1,291.1	176.8	93.9	82.87	2.133	
17,200.0	12,795.0	17,098.7	12,744.1	42.6	41.3	-69.57	-4,389.3	1,291.9	176.9	92.4	84.48	2.094	
17,300.0	12,795.5	17,198.7	12,744.2	43.4	42.2	-69.45	-4,489.3	1,292.7	177.0	90.9	86.09	2.056	
17,400.0	12,796.0	17,298.7	12,744.3	44.2	43.0	-69.33	-4,589.3	1,293.6	177.2	89.5	87.70	2.020	
17,500.0	12,796.5	17,398.7	12,744.4	45.0	43.8	-69.21	-4,689.3	1,294.4	177.3	88.0	89.32	1.985	Advise and Monitor
17,600.0	12,797.0	17,498.7	12,744.5	45.8	44.7	-69.09	-4,789.3	1,295.3	177.4	86.5	90.94	1.951	Advise and Monitor
17,700.0	12,797.5	17,598.7	12,744.6	46.6	45.5	-68.97	-4,889.3	1,296.1	177.5	85.0	92.56	1.918	Advise and Monitor
17,800.0	12,798.0	17,698.7	12,744.7	47.4	46.3	-68.85	-4,989.3	1,296.9	177.7	83.5	94.19	1.886	Advise and Monitor
17,900.0	12,798.5	17,798.7	12,744.8	48.3	47.2	-68.73	-5,089.3	1,297.8	177.8	82.0	95.81	1.856	Advise and Monitor
18,000.0	12,799.0	17,898.7	12,744.9	49.1	48.0	-68.61	-5,189.2	1,298.6	177.9	80.5	97.44	1.826	Advise and Monitor
18,100.0	12,799.5	17,998.7	12,745.0	49.9	48.9	-68.49	-5,289.2	1,299.5	178.1	79.0	99.07	1.797	Advise and Monitor
18,200.0	12,800.0	18,098.7	12,745.1	50.7	49.7	-68.37	-5,389.2	1,300.3	178.2	77.5	100.70	1.770	Advise and Monitor
18,300.0	12,800.5	18,198.7	12,745.2	51.6	50.6	-68.25	-5,489.2	1,301.2	178.3	76.0	102.34	1.743	Advise and Monitor
18,400.0	12,801.0	18,298.7	12,745.3	52.4	51.4	-68.14	-5,589.2	1,302.0	178.5	74.5	103.97	1.716	Advise and Monitor
18,500.0	12,801.5	18,398.7	12,745.4	53.2	52.2	-68.02	-5,689.2	1,302.8	178.6	73.0	105.61	1.691	Advise and Monitor
18,600.0	12,802.0	18,498.7	12,745.5	54.1	53.1	-67.90	-5,789.2	1,303.7	178.7	71.5	107.25	1.667	Advise and Monitor
18,700.0	12,802.4	18,598.7	12,745.6	54.9	53.9	-67.78	-5,889.2	1,304.5	178.9	70.0	108.89	1.643	Advise and Monitor
18,800.0	12,802.9	18,698.7	12,745.7	55.7	54.8	-67.66	-5,989.2	1,305.4	179.0	68.5	110.53	1.620	Advise and Monitor
18,900.0	12,803.4	18,798.7	12,745.8	56.6	55.6	-67.54	-6,089.2	1,306.2	179.1	67.0	112.17	1.597	Advise and Monitor
19,000.0	12,803.9	18,898.7	12,745.9	57.4	56.5	-67.43	-6,189.2	1,307.1	179.3	65.5	113.81	1.575	Advise and Monitor
19,100.0	12,804.4	18,998.7	12,746.0	58.2	57.3	-67.31	-6,289.2	1,307.9	179.4	64.0	115.45	1.554	Advise and Monitor
19,200.0	12,804.9	19,098.7	12,746.1	59.1	58.2	-67.19	-6,389.2	1,308.7	179.6	62.5	117.10	1.533	Advise and Monitor
19,300.0	12,805.4	19,198.7	12,746.2	59.9	59.0	-67.07	-6,489.2	1,309.6	179.7	61.0	118.74	1.513	Advise and Monitor
19,400.0	12,805.9	19,298.7	12,746.3	60.7	59.9	-66.96	-6,589.2	1,310.4	179.8	59.5	120.39	1.494	Shut in Produces
19,500.0	12,806.4	19,398.7	12,746.4	61.6	60.7	-66.84	-6,689.2	1,311.3	180.0	58.0	122.04	1.475	Shut in Produces
19,600.0	12,806.9	19,498.7	12,746.5	62.4	61.6	-66.72	-6,789.2	1,312.1	180.1	56.4	123.68	1.456	Shut in Produces
19,700.0	12,807.4	19,598.7	12,746.6	63.3	62.4	-66.61	-6,889.2	1,313.0	180.3	54.9	125.33	1.438	Shut in Produces
19,800.0	12,807.9	19,698.7	12,746.7	64.1	63.3	-66.49	-6,989.2	1,313.8	180.4	53.4	126.98	1.421	Shut in Produces
19,900.0	12,808.4	19,798.7	12,746.8	64.9	64.1	-66.37	-7,089.2	1,314.6	180.6	51.9	128.63	1.404	Shut in Produces
20,000.0	12,808.9	19,898.7	12,746.9	65.8	65.0	-66.26	-7,189.2	1,315.5	180.7	50.4	130.28	1.387	Shut in Produces
20,100.0	12,809.4	19,998.7	12,747.0	66.6	65.8	-66.14	-7,289.2	1,316.3	180.9	48.9	131.93	1.371	Shut in Produces
20,200.0	12,809.9	20,098.7	12,747.1	67.5	66.7	-66.03	-7,389.2	1,317.2	181.0	47.4	133.58	1.355	Shut in Produces
20,300.0	12,810.4	20,198.7	12,747.2	68.3	67.5	-65.91	-7,489.1	1,318.0	181.1	45.9	135.23	1.340	Shut in Produces
20,400.0	12,810.8	20,298.7	12,747.3	69.1	68.4	-65.80	-7,589.1	1,318.9	181.3	44.4	136.88	1.325	Shut in Produces
20,500.0	12,811.3	20,398.7	12,747.4	70.0	69.2	-65.68	-7,689.1	1,319.7	181.4	42.9	138.53	1.310	Shut in Produces
20,600.0	12,811.8	20,498.7	12,747.5	70.8	70.1	-65.57	-7,789.1	1,320.5	181.6	41.4	140.18	1.295	Shut in Produces
20,700.0	12,812.3	20,598.7	12,747.6	71.7	70.9	-65.45	-7,889.1	1,321.4	181.7	39.9	141.83	1.281	Shut in Produces
20,800.0	12,812.8	20,698.7	12,747.7	72.5	71.8	-65.34	-7,989.1	1,322.2	181.9	38.4	143.48	1.268	Shut in Produces
20,900.0	12,813.3	20,798.7	12,747.8	73.4	72.6	-65.22	-8,089.1	1,323.1	182.1	36.9	145.13	1.254	Shut in Produces
21,000.0	12,813.8	20,898.7	12,747.9	74.2	73.5	-65.11	-8,189.1	1,323.9	182.2	35.4	146.79	1.241	Shut in Produces
21,100.0	12,814.3	20,998.7	12,748.0	75.1	74.3	-65.00	-8,289.1	1,324.8	182.4	33.9	148.44	1.229	Shut in Produces
21,200.0	12,814.8	21,098.7	12,748.1	75.9	75.2	-64.88	-8,389.1	1,325.6	182.5	32.4	150.09	1.216	Shut in Produces
21,300.0	12,815.3	21,198.7	12,748.2	76.8	76.1	-64.77	-8,489.1	1,326.4	182.7	30.9	151.74	1.204	Shut in Produces
21,400.0	12,815.8	21,298.7	12,748.3	77.6	76.9	-64.66	-8,589.1	1,327.3	182.8	29.4	153.40	1.192	Shut in Produces

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FEDERAL COM 603H - OWB - PWP2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Standard Keeper 104, 12141-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
21,500.0	12,816.3	21,398.7	12,748.4	78.5	77.8	-64.54	-8,689.1	1,328.1	183.0	27.9	155.05	1.180	Shut in Produces
21,600.0	12,816.8	21,498.7	12,748.5	79.3	78.6	-64.43	-8,789.1	1,329.0	183.1	26.4	156.70	1.169	Shut in Produces
21,700.0	12,817.3	21,598.7	12,748.6	80.2	79.5	-64.32	-8,889.1	1,329.8	183.3	24.9	158.36	1.157	Shut in Produces
21,800.0	12,817.8	21,698.7	12,748.7	81.0	80.3	-64.20	-8,989.1	1,330.7	183.5	23.4	160.01	1.147	Shut in Produces
21,900.0	12,818.3	21,798.7	12,748.8	81.9	81.2	-64.09	-9,089.1	1,331.5	183.6	22.0	161.66	1.136	Shut in Produces
22,000.0	12,818.7	21,898.7	12,748.9	82.7	82.0	-63.98	-9,189.1	1,332.3	183.8	20.5	163.31	1.125	Shut in Produces
22,100.0	12,819.2	21,998.7	12,749.0	83.6	82.9	-63.87	-9,289.1	1,333.2	183.9	19.0	164.97	1.115	Shut in Produces
22,200.0	12,819.7	22,098.7	12,749.1	84.4	83.8	-63.76	-9,389.1	1,334.0	184.1	17.5	166.62	1.105	Shut in Produces
22,300.0	12,820.2	22,198.7	12,749.2	85.3	84.6	-63.64	-9,489.1	1,334.9	184.3	16.0	168.27	1.095	Shut in Produces
22,400.0	12,820.7	22,298.7	12,749.3	86.1	85.5	-63.53	-9,589.1	1,335.7	184.4	14.5	169.92	1.085	Shut in Produces
22,500.0	12,821.2	22,398.7	12,749.4	87.0	86.3	-63.42	-9,689.1	1,336.6	184.6	13.0	171.58	1.076	Shut in Produces
22,600.0	12,821.7	22,498.7	12,749.5	87.8	87.2	-63.31	-9,789.0	1,337.4	184.7	11.5	173.23	1.067	Shut in Produces
22,700.0	12,822.2	22,598.7	12,749.6	88.7	88.0	-63.20	-9,889.0	1,338.2	184.9	10.0	174.88	1.057	Shut in Produces
22,800.0	12,822.7	22,698.7	12,749.7	89.5	88.9	-63.09	-9,989.0	1,339.1	185.1	8.5	176.53	1.048	Shut in Produces
22,900.0	12,823.2	22,798.7	12,749.8	90.4	89.7	-62.98	-10,089.0	1,339.9	185.2	7.1	178.18	1.040	Shut in Produces
23,000.0	12,823.7	22,898.7	12,749.9	91.2	90.6	-62.87	-10,189.0	1,340.8	185.4	5.6	179.84	1.031	Shut in Produces
23,062.9	12,824.0	22,961.5	12,750.0	91.7	91.1	-62.80	-10,251.9	1,341.3	185.5	4.6	180.87	1.026	Shut in Produces
23,063.6	12,824.0	22,961.6	12,750.0	91.8	91.1	-62.80	-10,252.0	1,341.3	185.5	4.6	180.89	1.026	Shut in Produces, ES, SF

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FEDERAL COM 703H - OWB - PWP3 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.0	10,171.3	10,141.9	10,136.5	12.3	36.1	13.89	161.6	1,637.7	997.9	950.7	47.21	21.137	
10,300.0	10,271.0	10,241.8	10,236.3	12.4	36.4	13.87	164.2	1,641.8	993.6	945.9	47.69	20.834	
10,400.0	10,370.6	10,341.7	10,336.1	12.5	36.8	13.84	166.8	1,645.9	989.2	941.1	48.17	20.536	
10,500.0	10,470.2	10,441.6	10,435.9	12.6	37.1	13.81	169.4	1,650.0	984.9	936.2	48.65	20.244	
10,600.0	10,569.8	10,541.5	10,535.7	12.8	37.5	13.78	172.0	1,654.1	980.5	931.4	49.13	19.958	
10,700.0	10,669.4	10,641.4	10,635.5	12.9	37.9	13.75	174.6	1,658.2	976.2	926.6	49.61	19.677	
10,800.0	10,769.0	10,741.3	10,735.2	13.0	38.2	13.72	177.2	1,662.3	971.8	921.7	50.09	19.402	
10,900.0	10,868.7	10,841.2	10,835.0	13.1	38.6	13.69	179.8	1,666.4	967.5	916.9	50.57	19.132	
11,000.0	10,968.3	10,941.1	10,934.8	13.3	38.9	13.66	182.4	1,670.5	963.1	912.1	51.05	18.866	
11,100.0	11,067.9	11,041.1	11,034.6	13.4	39.3	13.63	185.0	1,674.7	958.8	907.3	51.53	18.606	
11,200.0	11,167.5	11,141.0	11,134.4	13.5	39.6	13.59	187.6	1,678.8	954.4	902.4	52.01	18.350	
11,300.0	11,267.1	11,240.9	11,234.2	13.6	40.0	13.56	190.2	1,682.9	950.1	897.6	52.49	18.099	
11,400.0	11,366.8	11,340.8	11,334.0	13.8	40.4	13.53	192.8	1,687.0	945.7	892.8	52.97	17.853	
11,500.0	11,466.4	11,440.7	11,433.7	13.9	40.7	13.50	195.4	1,691.1	941.4	887.9	53.46	17.611	
11,600.0	11,566.0	11,540.6	11,533.5	14.0	41.1	13.47	198.0	1,695.2	937.1	883.1	53.94	17.373	
11,700.0	11,665.6	11,640.5	11,633.3	14.2	41.4	13.43	200.6	1,699.3	932.7	878.3	54.42	17.139	
11,800.0	11,765.2	11,740.4	11,733.1	14.3	41.8	13.40	203.2	1,703.4	928.4	873.5	54.90	16.909	
11,900.0	11,864.9	11,840.3	11,832.9	14.4	42.1	13.37	205.8	1,707.5	924.0	868.6	55.39	16.683	
12,000.0	11,964.5	11,940.2	11,932.7	14.5	42.5	13.33	208.4	1,711.6	919.7	863.8	55.87	16.462	
12,100.0	12,064.1	12,040.1	12,032.5	14.7	42.9	13.30	211.0	1,715.7	915.3	859.0	56.35	16.243	
12,200.0	12,163.7	12,140.0	12,132.2	14.8	43.2	13.27	213.6	1,719.9	911.0	854.1	56.83	16.029	
12,241.1	12,204.7	12,181.1	12,173.3	14.9	43.4	13.25	214.6	1,721.5	909.2	852.2	57.02	15.944	
12,250.0	12,213.5	12,189.9	12,182.1	14.9	43.4	3.19	214.9	1,721.9	908.8	851.7	57.06	15.928	
12,300.0	12,263.2	12,240.2	12,232.3	14.9	43.6	-36.41	215.2	1,724.0	905.9	848.7	57.24	15.826	
12,350.0	12,312.5	12,290.6	12,282.5	14.9	43.7	-52.41	211.3	1,726.1	902.0	844.6	57.43	15.707	
12,400.0	12,360.9	12,341.2	12,332.4	14.9	43.9	-60.12	203.0	1,728.2	897.1	839.5	57.61	15.572	
12,450.0	12,408.2	12,391.9	12,381.4	14.9	44.1	-64.74	190.4	1,730.4	891.2	833.4	57.79	15.421	
12,500.0	12,453.8	12,442.6	12,429.1	14.9	44.2	-67.99	173.4	1,732.5	884.4	826.5	57.98	15.255	
12,550.0	12,497.6	12,493.4	12,475.2	14.9	44.3	-70.53	152.2	1,734.6	876.8	818.6	58.16	15.076	
12,600.0	12,539.2	12,544.1	12,519.2	14.9	44.5	-72.68	127.1	1,736.6	868.3	810.0	58.34	14.883	
12,650.0	12,578.2	12,594.9	12,560.8	15.0	44.6	-74.61	98.1	1,738.6	859.1	800.6	58.52	14.679	
12,700.0	12,614.3	12,645.7	12,599.8	15.0	44.7	-76.40	65.5	1,740.4	849.2	790.5	58.71	14.465	
12,750.0	12,647.4	12,696.5	12,635.7	15.1	44.8	-78.10	29.7	1,742.2	838.7	779.8	58.89	14.241	
12,800.0	12,677.0	12,747.3	12,668.2	15.1	44.9	-79.76	-9.3	1,743.9	827.7	768.6	59.08	14.009	
12,850.0	12,703.1	12,798.1	12,697.3	15.2	45.0	-81.39	-50.9	1,745.5	816.2	757.0	59.27	13.771	
12,900.0	12,725.4	12,849.0	12,722.5	15.3	45.1	-82.99	-95.1	1,746.9	804.5	745.0	59.47	13.528	
12,950.0	12,743.7	12,900.0	12,743.8	15.4	45.2	-84.57	-141.4	1,748.1	792.4	732.7	59.66	13.281	
13,000.0	12,757.9	12,951.1	12,760.9	15.5	45.2	-86.12	-189.5	1,749.2	780.2	720.3	59.86	13.034	
13,050.0	12,767.9	13,002.3	12,773.6	15.6	45.3	-87.65	-239.0	1,750.2	767.9	707.9	60.05	12.787	
13,100.0	12,773.5	13,053.6	12,782.0	15.7	45.4	-89.15	-289.7	1,750.9	755.7	695.4	60.25	12.543	
13,137.8	12,775.0	13,092.6	12,785.2	15.8	45.4	-90.24	-328.5	1,751.4	746.5	686.1	60.39	12.361	
13,200.0	12,775.3	13,154.6	12,786.1	16.0	45.4	-90.30	-390.5	1,752.0	732.0	671.4	60.62	12.075	
13,300.0	12,775.8	13,252.5	12,786.7	16.3	45.5	-90.32	-488.4	1,752.8	711.4	650.4	61.04	11.655	
13,400.0	12,776.3	13,351.0	12,787.2	16.7	45.6	-90.34	-586.9	1,753.6	694.3	632.8	61.52	11.286	
13,500.0	12,776.8	13,450.1	12,787.7	17.1	45.7	-90.36	-686.0	1,754.5	680.6	618.6	62.05	10.969	
13,600.0	12,777.3	13,549.5	12,788.2	17.5	45.8	-90.38	-785.4	1,755.3	670.4	607.8	62.63	10.704	
13,700.0	12,777.7	13,649.3	12,788.8	17.9	46.0	-90.39	-885.2	1,756.2	663.7	600.4	63.25	10.493	
13,800.0	12,778.2	13,749.3	12,789.3	18.4	46.1	-90.41	-985.1	1,757.0	660.4	596.5	63.91	10.333	
13,843.3	12,778.5	13,792.5	12,789.5	18.6	46.2	-90.41	-1,028.4	1,757.4	660.1	595.9	64.21	10.281	
13,900.0	12,778.7	13,849.3	12,789.8	18.9	46.3	-90.41	-1,085.1	1,757.9	660.1	595.5	64.61	10.217	
14,000.0	12,779.2	13,949.3	12,790.3	19.4	46.5	-90.42	-1,185.1	1,758.8	660.1	594.7	65.35	10.101	
14,100.0	12,779.7	14,049.3	12,790.9	19.9	46.7	-90.42	-1,285.1	1,759.6	660.1	594.0	66.12	9.983	

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FEDERAL COM 703H - OWB - PWP3 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,200.0	12,780.2	14,149.3	12,791.4	20.5	46.9	-90.42	-1,385.1	1,760.5	660.1	593.1	66.94	9.861	
14,300.0	12,780.7	14,249.3	12,791.9	21.1	47.1	-90.42	-1,485.1	1,761.3	660.1	592.3	67.78	9.738	
14,400.0	12,781.2	14,349.3	12,792.4	21.7	47.4	-90.43	-1,585.1	1,762.2	660.1	591.4	68.66	9.614	
14,500.0	12,781.7	14,449.3	12,793.0	22.3	47.7	-90.43	-1,685.1	1,763.0	660.1	590.5	69.57	9.488	
14,600.0	12,782.2	14,549.3	12,793.5	22.9	47.9	-90.43	-1,785.1	1,763.9	660.1	589.6	70.50	9.362	
14,700.0	12,782.7	14,649.3	12,794.0	23.6	48.2	-90.44	-1,885.1	1,764.7	660.1	588.6	71.47	9.236	
14,800.0	12,783.2	14,749.3	12,794.5	24.2	48.5	-90.44	-1,985.1	1,765.6	660.1	587.6	72.46	9.110	
14,900.0	12,783.7	14,849.3	12,795.1	24.9	48.8	-90.44	-2,085.1	1,766.4	660.1	586.6	73.47	8.984	
15,000.0	12,784.2	14,949.3	12,795.6	25.6	49.2	-90.44	-2,185.1	1,767.3	660.1	585.6	74.50	8.859	
15,100.0	12,784.7	15,049.3	12,796.1	26.3	49.5	-90.45	-2,285.1	1,768.2	660.1	584.5	75.56	8.735	
15,200.0	12,785.2	15,149.3	12,796.6	27.0	49.9	-90.45	-2,385.0	1,769.0	660.1	583.4	76.64	8.612	
15,300.0	12,785.7	15,249.3	12,797.2	27.8	50.2	-90.45	-2,485.0	1,769.9	660.1	582.3	77.74	8.490	
15,400.0	12,786.1	15,349.3	12,797.7	28.5	50.6	-90.46	-2,585.0	1,770.7	660.1	581.2	78.86	8.370	
15,500.0	12,786.6	15,449.3	12,798.2	29.2	51.0	-90.46	-2,685.0	1,771.6	660.1	580.1	80.00	8.251	
15,600.0	12,787.1	15,549.3	12,798.7	30.0	51.4	-90.46	-2,785.0	1,772.4	660.1	578.9	81.16	8.133	
15,700.0	12,787.6	15,649.3	12,799.3	30.7	51.8	-90.46	-2,885.0	1,773.3	660.1	577.7	82.33	8.017	
15,800.0	12,788.1	15,749.3	12,799.8	31.5	52.2	-90.47	-2,985.0	1,774.1	660.1	576.5	83.52	7.903	
15,900.0	12,788.6	15,849.3	12,800.3	32.3	52.7	-90.47	-3,085.0	1,775.0	660.1	575.3	84.72	7.791	
16,000.0	12,789.1	15,949.3	12,800.8	33.0	53.1	-90.47	-3,185.0	1,775.8	660.0	574.1	85.94	7.680	
16,100.0	12,789.6	16,049.3	12,801.4	33.8	53.6	-90.47	-3,285.0	1,776.7	660.0	572.9	87.18	7.571	
16,200.0	12,790.1	16,149.3	12,801.9	34.6	54.0	-90.48	-3,385.0	1,777.6	660.0	571.6	88.43	7.464	
16,300.0	12,790.6	16,249.3	12,802.4	35.4	54.5	-90.48	-3,485.0	1,778.4	660.0	570.4	89.69	7.359	
16,400.0	12,791.1	16,349.3	12,803.0	36.2	55.0	-90.48	-3,585.0	1,779.3	660.0	569.1	90.96	7.256	
16,500.0	12,791.6	16,449.3	12,803.5	36.9	55.5	-90.49	-3,685.0	1,780.1	660.0	567.8	92.25	7.155	
16,600.0	12,792.1	16,549.3	12,804.0	37.7	56.0	-90.49	-3,785.0	1,781.0	660.0	566.5	93.55	7.056	
16,700.0	12,792.6	16,649.3	12,804.5	38.5	56.5	-90.49	-3,885.0	1,781.8	660.0	565.2	94.86	6.958	
16,800.0	12,793.1	16,749.3	12,805.1	39.3	57.0	-90.49	-3,985.0	1,782.7	660.0	563.9	96.18	6.863	
16,900.0	12,793.6	16,849.3	12,805.6	40.1	57.5	-90.50	-4,085.0	1,783.5	660.0	562.5	97.51	6.769	
17,000.0	12,794.0	16,949.3	12,806.1	40.9	58.1	-90.50	-4,185.0	1,784.4	660.0	561.2	98.86	6.677	
17,100.0	12,794.5	17,049.3	12,806.6	41.7	58.6	-90.50	-4,285.0	1,785.2	660.0	559.8	100.21	6.587	
17,200.0	12,795.0	17,149.3	12,807.2	42.6	59.2	-90.51	-4,384.9	1,786.1	660.0	558.5	101.57	6.498	
17,300.0	12,795.5	17,249.3	12,807.7	43.4	59.7	-90.51	-4,484.9	1,786.9	660.0	557.1	102.94	6.412	
17,400.0	12,796.0	17,349.3	12,808.2	44.2	60.3	-90.51	-4,584.9	1,787.8	660.0	555.7	104.32	6.327	
17,500.0	12,796.5	17,449.3	12,808.7	45.0	60.8	-90.51	-4,684.9	1,788.7	660.0	554.3	105.71	6.244	
17,600.0	12,797.0	17,549.3	12,809.3	45.8	61.4	-90.52	-4,784.9	1,789.5	660.0	552.9	107.11	6.162	
17,700.0	12,797.5	17,649.3	12,809.8	46.6	62.0	-90.52	-4,884.9	1,790.4	660.0	551.5	108.52	6.082	
17,800.0	12,798.0	17,749.3	12,810.3	47.4	62.6	-90.52	-4,984.9	1,791.2	660.0	550.1	109.93	6.004	
17,900.0	12,798.5	17,849.3	12,810.8	48.3	63.2	-90.52	-5,084.9	1,792.1	660.0	548.7	111.36	5.927	
18,000.0	12,799.0	17,949.3	12,811.4	49.1	63.8	-90.53	-5,184.9	1,792.9	660.0	547.2	112.79	5.852	
18,100.0	12,799.5	18,049.3	12,811.9	49.9	64.4	-90.53	-5,284.9	1,793.8	660.0	545.8	114.22	5.778	
18,200.0	12,800.0	18,149.3	12,812.4	50.7	65.0	-90.53	-5,384.9	1,794.6	660.0	544.4	115.67	5.706	
18,300.0	12,800.5	18,249.3	12,812.9	51.6	65.7	-90.54	-5,484.9	1,795.5	660.0	542.9	117.12	5.636	
18,400.0	12,801.0	18,349.3	12,813.5	52.4	66.3	-90.54	-5,584.9	1,796.3	660.0	541.4	118.57	5.566	
18,500.0	12,801.5	18,449.3	12,814.0	53.2	66.9	-90.54	-5,684.9	1,797.2	660.0	540.0	120.04	5.498	
18,600.0	12,802.0	18,549.3	12,814.5	54.1	67.6	-90.54	-5,784.9	1,798.1	660.0	538.5	121.51	5.432	
18,700.0	12,802.4	18,649.3	12,815.0	54.9	68.2	-90.55	-5,884.9	1,798.9	660.0	537.0	122.98	5.367	
18,800.0	12,802.9	18,749.3	12,815.6	55.7	68.8	-90.55	-5,984.9	1,799.8	660.0	535.6	124.46	5.303	
18,900.0	12,803.4	18,849.3	12,816.1	56.6	69.5	-90.55	-6,084.9	1,800.6	660.0	534.1	125.95	5.240	
19,000.0	12,803.9	18,949.3	12,816.6	57.4	70.2	-90.56	-6,184.9	1,801.5	660.0	532.6	127.44	5.179	
19,100.0	12,804.4	19,049.3	12,817.2	58.2	70.8	-90.56	-6,284.9	1,802.3	660.0	531.1	128.94	5.119	
19,200.0	12,804.9	19,149.3	12,817.7	59.1	71.5	-90.56	-6,384.8	1,803.2	660.0	529.6	130.44	5.060	
19,300.0	12,805.4	19,249.3	12,818.2	59.9	72.1	-90.56	-6,484.8	1,804.0	660.0	528.1	131.95	5.002	

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FEDERAL COM 703H - OWB - PWP3 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,400.0	12,805.9	19,349.3	12,818.7	60.7	72.8	-90.57	-6,584.8	1,804.9	660.0	526.5	133.46	4.945	
19,500.0	12,806.4	19,449.3	12,819.3	61.6	73.5	-90.57	-6,684.8	1,805.7	660.0	525.0	134.98	4.890	
19,600.0	12,806.9	19,549.3	12,819.8	62.4	74.2	-90.57	-6,784.8	1,806.6	660.0	523.5	136.50	4.835	
19,700.0	12,807.4	19,649.3	12,820.3	63.3	74.9	-90.57	-6,884.8	1,807.5	660.0	522.0	138.02	4.782	
19,800.0	12,807.9	19,749.3	12,820.8	64.1	75.6	-90.58	-6,984.8	1,808.3	660.0	520.4	139.55	4.729	
19,900.0	12,808.4	19,849.3	12,821.4	64.9	76.2	-90.58	-7,084.8	1,809.2	660.0	518.9	141.09	4.678	
20,000.0	12,808.9	19,949.3	12,821.9	65.8	76.9	-90.58	-7,184.8	1,810.0	660.0	517.4	142.63	4.628	
20,100.0	12,809.4	20,049.3	12,822.4	66.6	77.6	-90.59	-7,284.8	1,810.9	660.0	515.8	144.17	4.578	
20,200.0	12,809.9	20,149.3	12,822.9	67.5	78.3	-90.59	-7,384.8	1,811.7	660.0	514.3	145.71	4.529	
20,300.0	12,810.4	20,249.3	12,823.5	68.3	79.0	-90.59	-7,484.8	1,812.6	660.0	512.7	147.26	4.482	
20,400.0	12,810.8	20,349.3	12,824.0	69.1	79.8	-90.59	-7,584.8	1,813.4	660.0	511.2	148.81	4.435	
20,500.0	12,811.3	20,449.3	12,824.5	70.0	80.5	-90.60	-7,684.8	1,814.3	660.0	509.6	150.37	4.389	
20,600.0	12,811.8	20,549.3	12,825.0	70.8	81.2	-90.60	-7,784.8	1,815.1	660.0	508.1	151.93	4.344	
20,700.0	12,812.3	20,649.3	12,825.6	71.7	81.9	-90.60	-7,884.8	1,816.0	660.0	506.5	153.49	4.300	
20,800.0	12,812.8	20,749.3	12,826.1	72.5	82.6	-90.61	-7,984.8	1,816.9	660.0	504.9	155.06	4.256	
20,900.0	12,813.3	20,849.3	12,826.6	73.4	83.3	-90.61	-8,084.8	1,817.7	660.0	503.4	156.63	4.214	
21,000.0	12,813.8	20,949.3	12,827.1	74.2	84.1	-90.61	-8,184.8	1,818.6	660.0	501.8	158.20	4.172	
21,100.0	12,814.3	21,049.3	12,827.7	75.1	84.8	-90.61	-8,284.8	1,819.4	660.0	500.2	159.78	4.131	
21,200.0	12,814.8	21,149.3	12,828.2	75.9	85.5	-90.62	-8,384.7	1,820.3	660.0	498.6	161.36	4.090	
21,300.0	12,815.3	21,249.3	12,828.7	76.8	86.3	-90.62	-8,484.7	1,821.1	660.0	497.0	162.94	4.051	
21,400.0	12,815.8	21,349.3	12,829.2	77.6	87.0	-90.62	-8,584.7	1,822.0	660.0	495.5	164.52	4.012	
21,500.0	12,816.3	21,449.3	12,829.8	78.5	87.7	-90.62	-8,684.7	1,822.8	660.0	493.9	166.11	3.973	
21,600.0	12,816.8	21,549.3	12,830.3	79.3	88.5	-90.63	-8,784.7	1,823.7	660.0	492.3	167.69	3.936	
21,700.0	12,817.3	21,649.3	12,830.8	80.2	89.2	-90.63	-8,884.7	1,824.5	660.0	490.7	169.29	3.899	
21,800.0	12,817.8	21,749.3	12,831.4	81.0	90.0	-90.63	-8,984.7	1,825.4	660.0	489.1	170.88	3.862	
21,900.0	12,818.3	21,849.3	12,831.9	81.9	90.7	-90.64	-9,084.7	1,826.3	660.0	487.5	172.48	3.826	
22,000.0	12,818.7	21,949.3	12,832.4	82.7	91.5	-90.64	-9,184.7	1,827.1	660.0	485.9	174.07	3.791	
22,100.0	12,819.2	22,049.3	12,832.9	83.6	92.2	-90.64	-9,284.7	1,828.0	660.0	484.3	175.68	3.757	
22,200.0	12,819.7	22,149.3	12,833.5	84.4	93.0	-90.64	-9,384.7	1,828.8	660.0	482.7	177.28	3.723	
22,300.0	12,820.2	22,249.3	12,834.0	85.3	93.7	-90.65	-9,484.7	1,829.7	660.0	481.1	178.88	3.689	
22,400.0	12,820.7	22,349.3	12,834.5	86.1	94.5	-90.65	-9,584.7	1,830.5	660.0	479.5	180.49	3.657	
22,500.0	12,821.2	22,449.3	12,835.0	87.0	95.2	-90.65	-9,684.7	1,831.4	660.0	477.9	182.10	3.624	
22,600.0	12,821.7	22,549.3	12,835.6	87.8	96.0	-90.66	-9,784.7	1,832.2	660.0	476.3	183.71	3.592	
22,700.0	12,822.2	22,649.3	12,836.1	88.7	96.8	-90.66	-9,884.7	1,833.1	660.0	474.6	185.33	3.561	
22,800.0	12,822.7	22,749.3	12,836.6	89.5	97.5	-90.66	-9,984.7	1,833.9	660.0	473.0	186.94	3.530	
22,900.0	12,823.2	22,849.3	12,837.1	90.4	98.3	-90.66	-10,084.7	1,834.8	660.0	471.4	188.56	3.500	
23,000.0	12,823.7	22,949.3	12,837.7	91.2	99.0	-90.67	-10,184.7	1,835.7	660.0	469.8	190.18	3.470	
23,062.9	12,824.0	23,012.1	12,838.0	91.7	99.5	-90.67	-10,247.5	1,836.2	660.0	468.8	191.19	3.452	
23,063.6	12,824.0	23,012.8	12,838.0	91.8	99.5	-90.67	-10,248.2	1,836.2	660.0	468.8	191.20	3.452	CC, ES, SF

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FEDERAL COM 704H - OWB - PWP3 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD+IFR1+MS — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,500.0	6,485.4	6,579.3	6,575.9	7.9	24.3	16.49	42.2	1,307.3	984.1	953.3	30.73	32.027	
6,600.0	6,585.0	6,677.9	6,674.1	8.0	24.6	16.66	42.2	1,298.8	967.2	936.0	31.17	31.030	
6,700.0	6,684.7	6,776.4	6,772.3	8.1	24.9	16.83	42.2	1,290.4	950.3	918.7	31.61	30.059	
6,800.0	6,784.3	6,874.9	6,870.4	8.2	25.2	17.01	42.2	1,281.9	933.4	901.3	32.06	29.115	
6,900.0	6,883.9	6,973.4	6,968.6	8.3	25.6	17.20	42.2	1,273.4	916.5	884.0	32.50	28.196	
7,000.0	6,983.5	7,071.9	7,066.7	8.4	25.9	17.39	42.2	1,264.9	899.7	866.7	32.95	27.302	
7,100.0	7,083.1	7,170.5	7,164.9	8.5	26.2	17.59	42.2	1,256.4	882.8	849.4	33.40	26.432	
7,200.0	7,182.7	7,269.0	7,263.0	8.7	26.6	17.80	42.2	1,248.0	866.0	832.1	33.85	25.584	
7,300.0	7,282.4	7,367.5	7,361.2	8.8	26.9	18.02	42.2	1,239.5	849.1	814.8	34.30	24.759	
7,400.0	7,382.0	7,466.0	7,459.3	8.9	27.2	18.24	42.2	1,231.0	832.3	797.6	34.75	23.954	
7,500.0	7,481.6	7,564.6	7,557.5	9.0	27.5	18.48	42.2	1,222.5	815.5	780.3	35.20	23.171	
7,600.0	7,581.2	7,663.1	7,655.7	9.1	27.9	18.72	42.2	1,214.0	798.7	763.1	35.65	22.407	
7,700.0	7,680.8	7,761.6	7,753.8	9.2	28.2	18.98	42.2	1,205.6	782.0	745.9	36.10	21.663	
7,800.0	7,780.5	7,860.1	7,852.0	9.4	28.5	19.25	42.2	1,197.1	765.2	728.7	36.55	20.937	
7,900.0	7,880.1	7,958.6	7,950.1	9.5	28.9	19.52	42.2	1,188.6	748.5	711.5	37.00	20.229	
8,000.0	7,979.7	8,057.2	8,048.3	9.6	29.2	19.81	42.2	1,180.1	731.7	694.3	37.45	19.539	
8,100.0	8,079.3	8,155.7	8,146.4	9.7	29.6	20.12	42.2	1,171.6	715.0	677.1	37.90	18.865	
8,200.0	8,178.9	8,254.2	8,244.6	9.8	29.9	20.44	42.2	1,163.2	698.4	660.0	38.35	18.208	
8,300.0	8,278.6	8,352.7	8,342.8	9.9	30.2	20.77	42.2	1,154.7	681.7	642.9	38.81	17.567	
8,400.0	8,378.2	8,451.3	8,440.9	10.1	30.6	21.12	42.2	1,146.2	665.1	625.8	39.26	16.941	
8,500.0	8,477.8	8,549.8	8,539.1	10.2	30.9	21.49	42.2	1,137.7	648.4	608.7	39.71	16.330	
8,600.0	8,577.4	8,648.3	8,637.2	10.3	31.2	21.88	42.2	1,129.2	631.9	591.7	40.16	15.734	
8,700.0	8,677.0	8,746.8	8,735.4	10.4	31.6	22.29	42.2	1,120.8	615.3	574.7	40.61	15.152	
8,800.0	8,776.7	8,845.3	8,833.5	10.5	31.9	22.72	42.2	1,112.3	598.8	557.7	41.06	14.583	
8,900.0	8,876.3	8,943.9	8,931.7	10.7	32.3	23.18	42.2	1,103.8	582.3	540.8	41.51	14.028	
9,000.0	8,975.9	9,042.4	9,029.9	10.8	32.6	23.67	42.2	1,095.3	565.8	523.9	41.96	13.486	
9,100.0	9,075.5	9,140.9	9,128.0	10.9	32.9	24.18	42.2	1,086.8	549.4	507.0	42.40	12.957	
9,200.0	9,175.1	9,239.4	9,226.2	11.0	33.3	24.72	42.2	1,078.4	533.1	490.2	42.85	12.440	
9,300.0	9,274.8	9,338.0	9,324.3	11.2	33.6	25.30	42.2	1,069.9	516.8	473.5	43.30	11.935	
9,400.0	9,374.4	9,436.5	9,422.5	11.3	34.0	25.91	42.2	1,061.4	500.5	456.8	43.74	11.443	
9,500.0	9,474.0	9,535.0	9,520.6	11.4	34.3	26.57	42.2	1,052.9	484.3	440.1	44.18	10.961	
9,600.0	9,573.6	9,633.5	9,618.8	11.5	34.6	27.27	42.2	1,044.4	468.2	423.6	44.62	10.492	
9,700.0	9,673.2	9,732.0	9,716.9	11.6	35.0	28.02	42.2	1,036.0	452.1	407.1	45.06	10.033	
9,800.0	9,772.9	9,830.6	9,815.1	11.8	35.3	28.83	42.2	1,027.5	436.1	390.6	45.50	9.586	
9,900.0	9,872.5	9,929.1	9,913.3	11.9	35.7	29.70	42.2	1,019.0	420.3	374.3	45.93	9.150	
10,000.0	9,972.1	10,027.6	10,011.4	12.0	36.0	30.63	42.2	1,010.5	404.5	358.1	46.36	8.724	
10,100.0	10,071.7	10,126.1	10,109.6	12.1	36.4	31.64	42.2	1,002.0	388.8	342.0	46.79	8.310	
10,200.0	10,171.3	10,224.6	10,207.7	12.3	36.7	32.74	42.2	993.6	373.3	326.1	47.21	7.906	
10,300.0	10,271.0	10,323.2	10,305.9	12.4	37.1	33.92	42.2	985.1	357.9	310.2	47.63	7.513	
10,400.0	10,370.6	10,421.7	10,404.0	12.5	37.4	35.22	42.2	976.6	342.6	294.6	48.05	7.131	
10,500.0	10,470.2	10,520.2	10,502.2	12.6	37.8	36.63	42.2	968.1	327.6	279.1	48.46	6.760	
10,600.0	10,569.8	10,618.7	10,600.4	12.8	38.1	38.18	42.2	959.7	312.8	263.9	48.87	6.401	
10,700.0	10,669.4	10,717.3	10,698.5	12.9	38.5	39.87	42.2	951.2	298.2	248.9	49.27	6.053	
10,800.0	10,769.0	10,815.8	10,796.7	13.0	38.8	41.74	42.2	942.7	283.9	234.2	49.66	5.717	
10,900.0	10,868.7	10,914.3	10,894.8	13.1	39.2	43.81	42.2	934.2	269.9	219.9	50.05	5.393	
11,000.0	10,968.3	11,012.8	10,993.0	13.3	39.6	46.09	42.2	925.7	256.3	205.9	50.43	5.083	
11,100.0	11,067.9	11,111.3	11,091.1	13.4	39.9	48.62	42.2	917.3	243.2	192.4	50.81	4.786	
11,200.0	11,167.5	11,209.9	11,189.3	13.5	40.3	51.43	42.2	908.8	230.6	179.4	51.19	4.504	
11,300.0	11,267.1	11,308.4	11,287.4	13.6	40.6	54.55	42.2	900.3	218.6	167.0	51.57	4.239	
11,400.0	11,366.8	11,406.9	11,385.6	13.8	41.0	58.01	42.2	891.8	207.3	155.4	51.96	3.990	
11,500.0	11,466.4	11,505.4	11,483.8	13.9	41.3	61.85	42.2	883.3	196.9	144.5	52.36	3.760	
11,600.0	11,566.0	11,604.0	11,581.9	14.0	41.7	66.09	42.2	874.9	187.5	134.7	52.79	3.551	

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FEDERAL COM 704H - OWB - PWP3 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD+IFR1+MS — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,700.0	11,665.6	11,702.5	11,680.1	14.2	42.0	70.74	42.2	866.4	179.2	125.9	53.25	3.365	
11,800.0	11,765.2	11,801.0	11,778.2	14.3	42.4	75.79	42.2	857.9	172.2	118.4	53.76	3.203	
11,900.0	11,864.9	11,899.5	11,876.4	14.4	42.8	81.22	42.2	849.4	166.7	112.4	54.33	3.068	
12,000.0	11,964.5	11,998.0	11,974.5	14.5	43.1	86.94	42.2	840.9	162.8	107.8	54.96	2.962	
12,100.0	12,064.1	12,096.6	12,072.7	14.7	43.5	92.88	42.2	832.5	160.7	105.0	55.65	2.887	
12,168.1	12,131.9	12,163.6	12,139.5	14.8	43.7	96.98	42.2	826.7	160.2	104.1	56.16	2.853	
12,200.0	12,163.7	12,195.1	12,170.9	14.8	43.8	98.91	42.2	824.0	160.3	103.9	56.40	2.843	
12,241.1	12,204.7	12,235.6	12,211.2	14.9	44.0	101.38	42.2	820.5	160.7	104.0	56.69	2.835	
12,250.0	12,213.5	12,244.3	12,219.9	14.9	44.0	91.91	42.2	819.7	160.8	104.0	56.75	2.833	
12,300.0	12,263.2	12,283.4	12,258.8	14.9	44.2	55.43	41.0	816.0	160.4	103.3	57.12	2.808	
12,350.0	12,312.5	12,321.7	12,296.6	14.9	44.3	43.22	37.5	811.5	159.7	102.1	57.62	2.771	
12,400.0	12,360.9	12,359.4	12,333.5	14.9	44.5	39.93	31.6	806.4	159.0	100.7	58.24	2.729	
12,450.0	12,408.2	12,400.0	12,372.6	14.9	44.7	40.71	22.7	800.1	158.8	99.8	58.93	2.694	
12,453.8	12,411.7	12,400.0	12,372.6	14.9	44.7	40.49	22.7	800.1	158.7	99.7	59.02	2.689	CC
12,500.0	12,453.8	12,433.1	12,403.9	14.9	44.8	42.51	13.4	794.3	159.4	99.6	59.75	2.668	ES, SF
12,550.0	12,497.6	12,469.1	12,437.1	14.9	44.9	45.79	1.5	787.4	161.5	100.9	60.52	2.668	
12,600.0	12,539.2	12,500.0	12,464.9	14.9	45.0	48.95	-10.4	781.1	165.4	104.2	61.21	2.703	
12,650.0	12,578.2	12,539.4	12,499.3	15.0	45.2	53.72	-27.6	772.4	171.4	109.7	61.78	2.775	
12,700.0	12,614.3	12,573.8	12,528.2	15.0	45.3	57.76	-44.5	764.3	179.9	117.7	62.26	2.890	
12,750.0	12,647.4	12,607.8	12,555.6	15.1	45.4	61.58	-62.7	755.9	190.8	128.2	62.60	3.048	
12,800.0	12,677.0	12,641.5	12,581.5	15.1	45.5	65.04	-82.3	747.1	204.2	141.4	62.82	3.250	
12,850.0	12,703.1	12,674.8	12,605.8	15.2	45.6	68.09	-103.2	738.1	219.8	156.9	62.90	3.494	
12,900.0	12,725.4	12,708.0	12,628.8	15.3	45.7	70.69	-125.3	728.8	237.5	174.6	62.86	3.778	
12,950.0	12,743.7	12,741.1	12,650.2	15.4	45.8	72.87	-148.6	719.2	257.0	194.3	62.71	4.098	
13,000.0	12,757.9	12,774.2	12,670.2	15.5	45.9	74.66	-173.1	709.3	278.0	215.6	62.47	4.451	
13,050.0	12,767.9	12,807.5	12,688.7	15.6	46.0	76.09	-198.8	699.2	300.4	238.3	62.16	4.833	
13,100.0	12,773.5	12,841.1	12,705.8	15.7	46.0	77.23	-225.8	688.7	323.9	262.1	61.81	5.241	
13,137.8	12,775.0	12,866.9	12,717.7	15.8	46.1	77.93	-247.2	680.6	342.3	280.8	61.53	5.563	
13,200.0	12,775.3	12,911.7	12,736.0	16.0	46.1	82.09	-285.5	666.3	373.6	312.4	61.18	6.106	
13,300.0	12,775.8	12,992.4	12,760.6	16.3	46.2	86.87	-357.7	640.2	424.4	363.4	60.99	6.959	
13,400.0	12,776.3	13,082.0	12,775.0	16.7	46.4	89.17	-441.2	611.2	473.2	412.0	61.20	7.732	
13,500.0	12,776.8	13,184.0	12,777.3	17.1	46.5	89.48	-538.1	579.4	517.9	456.1	61.74	8.388	
13,600.0	12,777.3	13,297.7	12,777.8	17.5	46.6	89.52	-647.3	547.8	556.1	493.7	62.47	8.902	
13,700.0	12,777.7	13,416.4	12,778.4	17.9	46.8	89.55	-762.5	519.5	587.3	524.0	63.29	9.280	
13,800.0	12,778.2	13,539.3	12,779.0	18.4	47.1	89.57	-882.9	495.2	611.1	546.9	64.17	9.524	
13,843.3	12,778.5	13,593.5	12,779.3	18.6	47.2	89.57	-936.4	486.1	619.0	554.5	64.56	9.589	
13,900.0	12,778.7	13,665.1	12,779.6	18.9	47.3	89.58	-1,007.2	475.7	627.8	562.7	65.08	9.646	
14,000.0	12,779.2	13,792.6	12,780.2	19.4	47.6	89.59	-1,133.9	461.5	639.7	573.7	66.03	9.689	
14,100.0	12,779.7	13,921.2	12,780.8	19.9	47.8	89.59	-1,262.2	453.0	647.2	580.2	66.99	9.662	
14,200.0	12,780.2	14,050.4	12,781.5	20.5	48.1	89.59	-1,391.4	450.2	650.2	582.3	67.94	9.570	
14,300.0	12,780.7	14,155.4	12,782.0	21.1	48.3	89.59	-1,496.4	451.0	650.3	581.6	68.76	9.458	
14,400.0	12,781.2	14,255.4	12,782.5	21.7	48.5	89.59	-1,596.4	451.9	650.3	580.7	69.57	9.347	
14,500.0	12,781.7	14,355.4	12,782.9	22.3	48.7	89.59	-1,696.4	452.7	650.3	579.9	70.41	9.236	
14,600.0	12,782.2	14,455.4	12,783.4	22.9	48.9	89.59	-1,796.4	453.6	650.3	579.0	71.28	9.123	
14,700.0	12,782.7	14,555.4	12,783.9	23.6	49.2	89.59	-1,896.3	454.5	650.3	578.1	72.17	9.010	
14,800.0	12,783.2	14,655.4	12,784.4	24.2	49.4	89.58	-1,996.3	455.3	650.3	577.2	73.09	8.897	
14,900.0	12,783.7	14,755.4	12,784.8	24.9	49.6	89.58	-2,096.3	456.2	650.3	576.3	74.03	8.785	
15,000.0	12,784.2	14,855.4	12,785.3	25.6	49.9	89.58	-2,196.3	457.0	650.3	575.3	74.98	8.672	
15,100.0	12,784.7	14,955.4	12,785.8	26.3	50.1	89.58	-2,296.3	457.9	650.3	574.3	75.96	8.561	
15,200.0	12,785.2	15,055.4	12,786.3	27.0	50.4	89.58	-2,396.3	458.8	650.3	573.3	76.96	8.450	
15,300.0	12,785.7	15,155.4	12,786.8	27.8	50.7	89.58	-2,496.3	459.6	650.3	572.3	77.97	8.340	
15,400.0	12,786.1	15,255.4	12,787.2	28.5	51.0	89.58	-2,596.3	460.5	650.3	571.3	79.01	8.231	

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

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FEDERAL COM 704H - OWB - PWP3 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD+IFR1+MS — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,500.0	12,786.6	15,355.4	12,787.7	29.2	51.3	89.58	-2,696.3	461.3	650.3	570.2	80.05	8.123	
15,600.0	12,787.1	15,455.4	12,788.2	30.0	51.6	89.57	-2,796.3	462.2	650.3	569.2	81.12	8.016	
15,700.0	12,787.6	15,555.4	12,788.7	30.7	51.9	89.57	-2,896.3	463.0	650.3	568.1	82.20	7.911	
15,800.0	12,788.1	15,655.4	12,789.2	31.5	52.3	89.57	-2,996.3	463.9	650.3	567.0	83.29	7.807	
15,900.0	12,788.6	15,755.4	12,789.6	32.3	52.6	89.57	-3,096.3	464.8	650.3	565.9	84.40	7.704	
16,000.0	12,789.1	15,855.4	12,790.1	33.0	52.9	89.57	-3,196.3	465.6	650.3	564.7	85.52	7.603	
16,100.0	12,789.6	15,955.4	12,790.6	33.8	53.3	89.57	-3,296.3	466.5	650.3	563.6	86.66	7.504	
16,200.0	12,790.1	16,055.4	12,791.1	34.6	53.7	89.57	-3,396.3	467.3	650.3	562.4	87.81	7.406	
16,300.0	12,790.6	16,155.4	12,791.6	35.4	54.0	89.57	-3,496.3	468.2	650.2	561.3	88.97	7.309	
16,400.0	12,791.1	16,255.4	12,792.0	36.2	54.4	89.56	-3,596.3	469.1	650.2	560.1	90.14	7.214	
16,500.0	12,791.6	16,355.4	12,792.5	36.9	54.8	89.56	-3,696.3	469.9	650.2	558.9	91.32	7.120	
16,600.0	12,792.1	16,455.4	12,793.0	37.7	55.2	89.56	-3,796.3	470.8	650.2	557.7	92.51	7.028	
16,700.0	12,792.6	16,555.4	12,793.5	38.5	55.6	89.56	-3,896.3	471.6	650.2	556.5	93.72	6.938	
16,800.0	12,793.1	16,655.4	12,794.0	39.3	56.0	89.56	-3,996.2	472.5	650.2	555.3	94.93	6.849	
16,900.0	12,793.6	16,755.4	12,794.4	40.1	56.4	89.56	-4,096.2	473.4	650.2	554.1	96.16	6.762	
17,000.0	12,794.0	16,855.4	12,794.9	40.9	56.9	89.56	-4,196.2	474.2	650.2	552.8	97.39	6.676	
17,100.0	12,794.5	16,955.4	12,795.4	41.7	57.3	89.56	-4,296.2	475.1	650.2	551.6	98.64	6.592	
17,200.0	12,795.0	17,055.4	12,795.9	42.6	57.7	89.55	-4,396.2	475.9	650.2	550.3	99.89	6.509	
17,300.0	12,795.5	17,155.4	12,796.4	43.4	58.2	89.55	-4,496.2	476.8	650.2	549.1	101.15	6.428	
17,400.0	12,796.0	17,255.4	12,796.8	44.2	58.6	89.55	-4,596.2	477.7	650.2	547.8	102.42	6.348	
17,500.0	12,796.5	17,355.4	12,797.3	45.0	59.1	89.55	-4,696.2	478.5	650.2	546.5	103.70	6.270	
17,600.0	12,797.0	17,455.4	12,797.8	45.8	59.5	89.55	-4,796.2	479.4	650.2	545.2	104.99	6.193	
17,700.0	12,797.5	17,555.4	12,798.3	46.6	60.0	89.55	-4,896.2	480.2	650.2	543.9	106.28	6.118	
17,800.0	12,798.0	17,655.4	12,798.8	47.4	60.5	89.55	-4,996.2	481.1	650.2	542.6	107.58	6.044	
17,900.0	12,798.5	17,755.4	12,799.2	48.3	61.0	89.55	-5,096.2	481.9	650.2	541.3	108.89	5.971	
18,000.0	12,799.0	17,855.4	12,799.7	49.1	61.5	89.54	-5,196.2	482.8	650.2	540.0	110.21	5.900	
18,100.0	12,799.5	17,955.4	12,800.2	49.9	62.0	89.54	-5,296.2	483.7	650.2	538.7	111.53	5.830	
18,200.0	12,800.0	18,055.4	12,800.7	50.7	62.5	89.54	-5,396.2	484.5	650.2	537.3	112.86	5.761	
18,300.0	12,800.5	18,155.4	12,801.2	51.6	63.0	89.54	-5,496.2	485.4	650.2	536.0	114.19	5.694	
18,400.0	12,801.0	18,255.4	12,801.6	52.4	63.5	89.54	-5,596.2	486.2	650.2	534.6	115.54	5.628	
18,500.0	12,801.5	18,355.4	12,802.1	53.2	64.0	89.54	-5,696.2	487.1	650.2	533.3	116.88	5.563	
18,600.0	12,802.0	18,455.4	12,802.6	54.1	64.5	89.54	-5,796.2	488.0	650.2	531.9	118.24	5.499	
18,700.0	12,802.4	18,555.4	12,803.1	54.9	65.0	89.54	-5,896.2	488.8	650.2	530.6	119.60	5.436	
18,800.0	12,802.9	18,655.4	12,803.6	55.7	65.6	89.53	-5,996.2	489.7	650.2	529.2	120.97	5.375	
18,900.0	12,803.4	18,755.4	12,804.0	56.6	66.1	89.53	-6,096.1	490.5	650.2	527.8	122.34	5.315	
19,000.0	12,803.9	18,855.4	12,804.5	57.4	66.6	89.53	-6,196.1	491.4	650.2	526.5	123.71	5.255	
19,100.0	12,804.4	18,955.4	12,805.0	58.2	67.2	89.53	-6,296.1	492.3	650.2	525.1	125.10	5.197	
19,200.0	12,804.9	19,055.4	12,805.5	59.1	67.7	89.53	-6,396.1	493.1	650.2	523.7	126.48	5.140	
19,300.0	12,805.4	19,155.4	12,806.0	59.9	68.3	89.53	-6,496.1	494.0	650.2	522.3	127.87	5.084	
19,400.0	12,805.9	19,255.4	12,806.4	60.7	68.8	89.53	-6,596.1	494.8	650.2	520.9	129.27	5.029	
19,500.0	12,806.4	19,355.4	12,806.9	61.6	69.4	89.53	-6,696.1	495.7	650.2	519.5	130.67	4.975	
19,600.0	12,806.9	19,455.4	12,807.4	62.4	70.0	89.52	-6,796.1	496.6	650.1	518.1	132.08	4.922	
19,700.0	12,807.4	19,555.4	12,807.9	63.3	70.5	89.52	-6,896.1	497.4	650.1	516.7	133.49	4.870	
19,800.0	12,807.9	19,655.4	12,808.4	64.1	71.1	89.52	-6,996.1	498.3	650.1	515.2	134.90	4.819	
19,900.0	12,808.4	19,755.4	12,808.8	64.9	71.7	89.52	-7,096.1	499.1	650.1	513.8	136.32	4.769	
20,000.0	12,808.9	19,855.4	12,809.3	65.8	72.2	89.52	-7,196.1	500.0	650.1	512.4	137.74	4.720	
20,100.0	12,809.4	19,955.4	12,809.8	66.6	72.8	89.52	-7,296.1	500.9	650.1	511.0	139.17	4.671	
20,200.0	12,809.9	20,055.4	12,810.3	67.5	73.4	89.52	-7,396.1	501.7	650.1	509.5	140.60	4.624	
20,300.0	12,810.4	20,155.4	12,810.8	68.3	74.0	89.52	-7,496.1	502.6	650.1	508.1	142.04	4.577	
20,400.0	12,810.8	20,255.4	12,811.2	69.1	74.6	89.51	-7,596.1	503.4	650.1	506.6	143.48	4.531	
20,500.0	12,811.3	20,355.4	12,811.7	70.0	75.2	89.51	-7,696.1	504.3	650.1	505.2	144.92	4.486	
20,600.0	12,811.8	20,455.4	12,812.2	70.8	75.8	89.51	-7,796.1	505.1	650.1	503.8	146.36	4.442	

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Offset Design BULLDOG - GUNNER 8 FEDERAL COM 704H - OWB - PWP3 — **Offset Site Error:** 0.0 usft

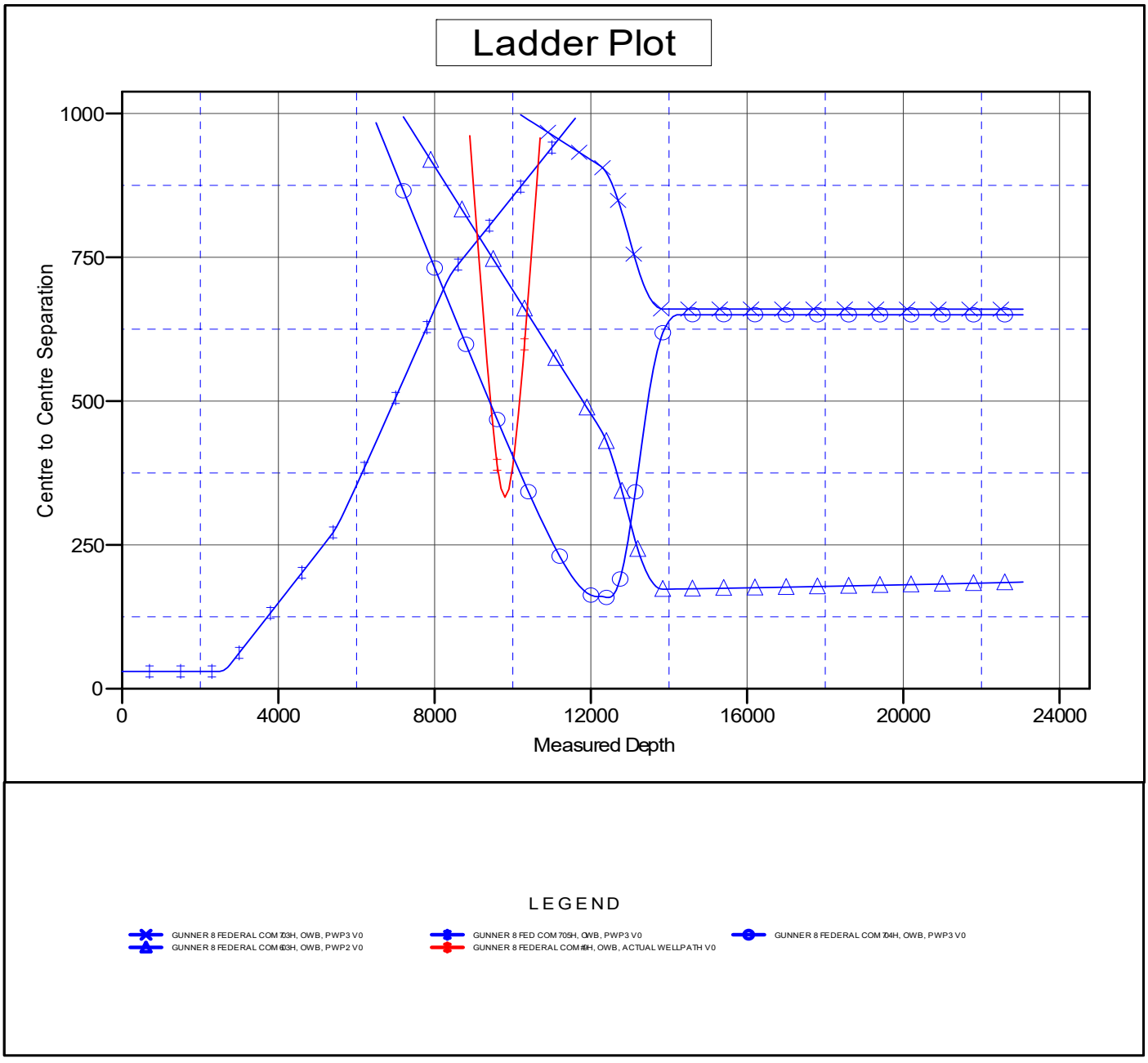
Survey Program: 0-MWD+IFR1+MS — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
20,700.0	12,812.3	20,555.4	12,812.7	71.7	76.4	89.51	-7,896.1	506.0	650.1	502.3	147.81	4.398	
20,800.0	12,812.8	20,655.4	12,813.1	72.5	77.0	89.51	-7,996.1	506.9	650.1	500.8	149.26	4.355	
20,900.0	12,813.3	20,755.4	12,813.6	73.4	77.6	89.51	-8,096.0	507.7	650.1	499.4	150.72	4.313	
21,000.0	12,813.8	20,855.4	12,814.1	74.2	78.2	89.51	-8,196.0	508.6	650.1	497.9	152.18	4.272	
21,100.0	12,814.3	20,955.4	12,814.6	75.1	78.8	89.51	-8,296.0	509.4	650.1	496.5	153.64	4.231	
21,200.0	12,814.8	21,055.4	12,815.1	75.9	79.4	89.50	-8,396.0	510.3	650.1	495.0	155.10	4.191	
21,300.0	12,815.3	21,155.4	12,815.5	76.8	80.1	89.50	-8,496.0	511.2	650.1	493.5	156.57	4.152	
21,400.0	12,815.8	21,255.4	12,816.0	77.6	80.7	89.50	-8,596.0	512.0	650.1	492.1	158.04	4.113	
21,500.0	12,816.3	21,355.4	12,816.5	78.5	81.3	89.50	-8,696.0	512.9	650.1	490.6	159.51	4.075	
21,600.0	12,816.8	21,455.4	12,817.0	79.3	81.9	89.50	-8,796.0	513.7	650.1	489.1	160.99	4.038	
21,700.0	12,817.3	21,555.4	12,817.5	80.2	82.5	89.50	-8,896.0	514.6	650.1	487.6	162.47	4.001	
21,800.0	12,817.8	21,655.4	12,817.9	81.0	83.2	89.50	-8,996.0	515.5	650.1	486.1	163.95	3.965	
21,900.0	12,818.3	21,755.4	12,818.4	81.9	83.8	89.50	-9,096.0	516.3	650.1	484.6	165.43	3.930	
22,000.0	12,818.7	21,855.4	12,818.9	82.7	84.4	89.49	-9,196.0	517.2	650.1	483.2	166.92	3.895	
22,100.0	12,819.2	21,955.4	12,819.4	83.6	85.1	89.49	-9,296.0	518.0	650.1	481.7	168.40	3.860	
22,200.0	12,819.7	22,055.4	12,819.9	84.4	85.7	89.49	-9,396.0	518.9	650.1	480.2	169.90	3.826	
22,300.0	12,820.2	22,155.4	12,820.3	85.3	86.4	89.49	-9,496.0	519.8	650.1	478.7	171.39	3.793	
22,400.0	12,820.7	22,255.4	12,820.8	86.1	87.0	89.49	-9,596.0	520.6	650.1	477.2	172.88	3.760	
22,500.0	12,821.2	22,355.4	12,821.3	87.0	87.6	89.49	-9,696.0	521.5	650.1	475.7	174.38	3.728	
22,600.0	12,821.7	22,455.4	12,821.8	87.8	88.3	89.49	-9,796.0	522.3	650.1	474.2	175.88	3.696	
22,700.0	12,822.2	22,555.4	12,822.3	88.7	88.9	89.48	-9,896.0	523.2	650.1	472.7	177.38	3.665	
22,800.0	12,822.7	22,655.4	12,822.7	89.5	89.6	89.48	-9,996.0	524.0	650.1	471.2	178.89	3.634	
22,900.0	12,823.2	22,755.4	12,823.2	90.4	90.2	89.48	-10,096.0	524.9	650.0	469.7	180.39	3.604	
23,000.0	12,823.7	22,855.4	12,823.7	91.2	90.9	89.48	-10,195.9	525.8	650.0	468.1	181.90	3.574	
23,061.3	12,824.0	22,916.6	12,824.0	91.7	91.3	89.48	-10,257.2	526.3	650.0	467.2	182.82	3.556	
23,062.9	12,824.0	22,917.4	12,824.0	91.7	91.3	89.48	-10,258.0	526.3	650.0	467.2	182.85	3.555	
23,063.6	12,824.0	22,917.4	12,824.0	91.8	91.3	89.48	-10,258.0	526.3	650.0	467.2	182.85	3.555	

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB=26' @ 3359.4usft (McVAY 8)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: GUNNER 8 FED COM 604H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.44°

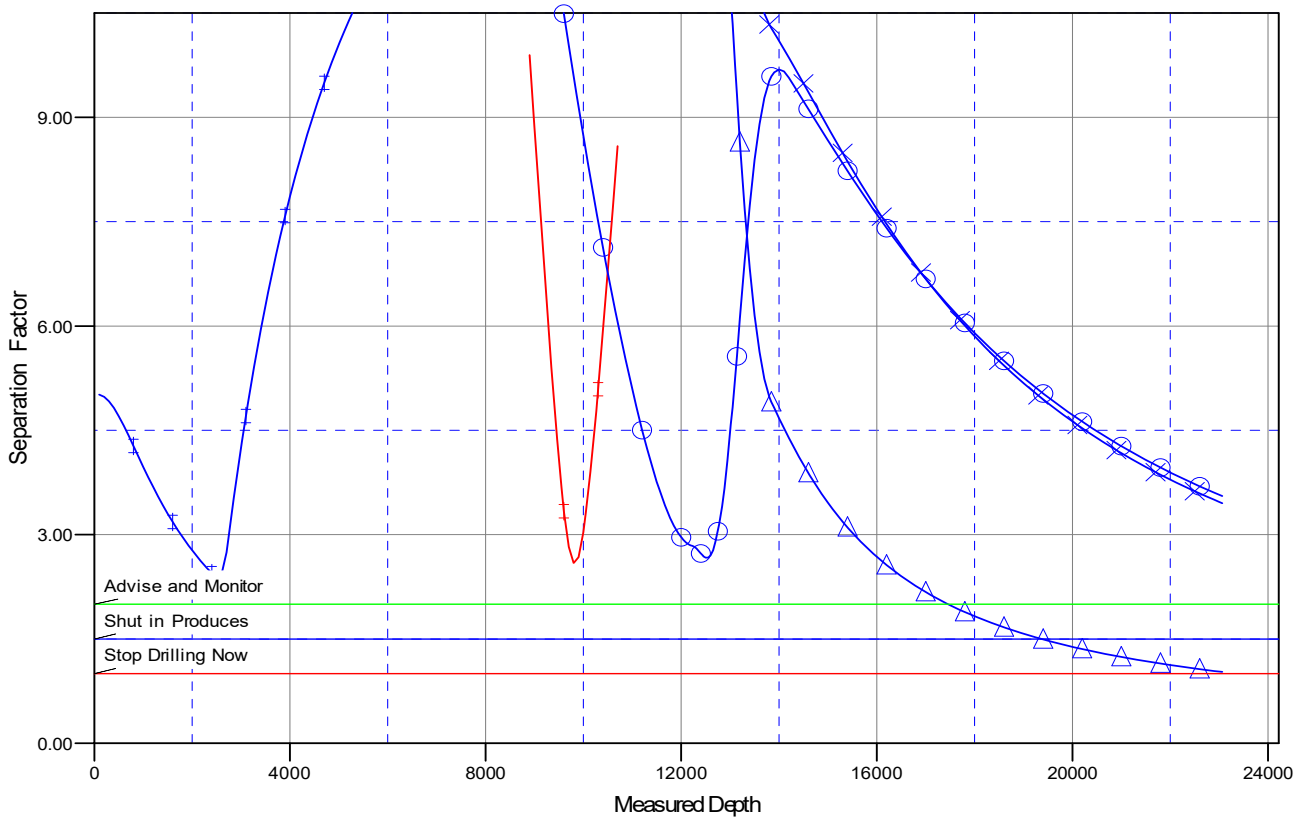


Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Reference Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	GUNNER 8 FED COM 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP3	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB=26' @ 3359.4usft (McVAY 8)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: GUNNER 8 FED COM 604H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.44°

Separation Factor Plot



LEGEND

GUNNER 8 FEDERAL COM 703H, OWB, PWP3 V0
GUNNER 8 FEDERAL COM 603H, OWB, PWP2 V0
GUNNER 8 FED COM 705H, OWB, PWP3 V0
GUNNER 8 FEDERAL COM 604H, OWB, ACTUAL WELLPATH V0
GUNNER 8 FEDERAL COM 704H, OWB, PWP3 V0

NORTHERN DELAWARE BASIN

LEA COUNTY, NM
BULLDOG
GUNNER 8 FED COM 604H

OWB

Plan: PWP3

Standard Survey Report

31 March, 2020

Concho Resources LLC

Survey Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Well:	GUNNER 8 FED COM 604H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP3	**Database:**	edm

Project	LEA COUNTY, NM		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Well	GUNNER 8 FED COM 604H				
Well Position	**+N/-S**	0.0 usft	**Northing:**	393,436.00 usft	**Latitude:**	32° 4' 44.108 N
	+E/-W	0.0 usft	**Easting:**	758,670.60 usft	**Longitude:**	103° 29' 53.501 W
Position Uncertainty		3.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,333.4 usft

Wellbore OWB

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	3/31/2020	6.61	59.90	47,574.00296459

Design PWP3

Audit Notes:

Version:	**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.0	0.0	0.0	173.46

Survey Tool Program **Date** 3/31/2020

From (usft)	**To (usft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.0	12,241.1	PWP3 (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
12,241.1	23,062.9	PWP3 (OWB)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction

Planned Survey

Measured Depth (usft)	**Inclination (°)**	**Azimuth (°)**	**Vertical Depth (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Vertical Section (usft)**	**Dogleg Rate (°/100usft)**	**Build Rate (°/100usft)**	**Turn Rate (°/100usft)**
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Well:	GUNNER 8 FED COM 604H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP3	**Database:**	edm

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 2.00									
2,600.0	2.00	76.00	2,600.0	0.4	1.7	-0.2	2.00	2.00	0.00
2,700.0	4.00	76.00	2,699.8	1.7	6.8	-0.9	2.00	2.00	0.00
2,750.0	5.00	76.00	2,749.7	2.6	10.6	-1.4	2.00	2.00	0.00
Start 9491.1 hold at 2750.0 MD									
2,800.0	5.00	76.00	2,799.5	3.7	14.8	-2.0	0.00	0.00	0.00
2,900.0	5.00	76.00	2,899.1	5.8	23.3	-3.1	0.00	0.00	0.00
3,000.0	5.00	76.00	2,998.7	7.9	31.7	-4.2	0.00	0.00	0.00
3,100.0	5.00	76.00	3,098.4	10.0	40.2	-5.4	0.00	0.00	0.00
3,200.0	5.00	76.00	3,198.0	12.1	48.6	-6.5	0.00	0.00	0.00
3,300.0	5.00	76.00	3,297.6	14.2	57.1	-7.6	0.00	0.00	0.00
3,400.0	5.00	76.00	3,397.2	16.3	65.5	-8.8	0.00	0.00	0.00
3,500.0	5.00	76.00	3,496.8	18.5	74.0	-9.9	0.00	0.00	0.00
3,600.0	5.00	76.00	3,596.4	20.6	82.5	-11.0	0.00	0.00	0.00
3,700.0	5.00	76.00	3,696.1	22.7	90.9	-12.2	0.00	0.00	0.00
3,800.0	5.00	76.00	3,795.7	24.8	99.4	-13.3	0.00	0.00	0.00
3,900.0	5.00	76.00	3,895.3	26.9	107.8	-14.4	0.00	0.00	0.00
4,000.0	5.00	76.00	3,994.9	29.0	116.3	-15.6	0.00	0.00	0.00
4,100.0	5.00	76.00	4,094.5	31.1	124.7	-16.7	0.00	0.00	0.00
4,200.0	5.00	76.00	4,194.2	33.2	133.2	-17.8	0.00	0.00	0.00
4,300.0	5.00	76.00	4,293.8	35.3	141.7	-18.9	0.00	0.00	0.00
4,400.0	5.00	76.00	4,393.4	37.4	150.1	-20.1	0.00	0.00	0.00
4,500.0	5.00	76.00	4,493.0	39.5	158.6	-21.2	0.00	0.00	0.00
4,600.0	5.00	76.00	4,592.6	41.6	167.0	-22.3	0.00	0.00	0.00
4,700.0	5.00	76.00	4,692.3	43.8	175.5	-23.5	0.00	0.00	0.00
4,800.0	5.00	76.00	4,791.9	45.9	183.9	-24.6	0.00	0.00	0.00
4,900.0	5.00	76.00	4,891.5	48.0	192.4	-25.7	0.00	0.00	0.00
5,000.0	5.00	76.00	4,991.1	50.1	200.9	-26.9	0.00	0.00	0.00
5,100.0	5.00	76.00	5,090.7	52.2	209.3	-28.0	0.00	0.00	0.00
5,200.0	5.00	76.00	5,190.4	54.3	217.8	-29.1	0.00	0.00	0.00
5,300.0	5.00	76.00	5,290.0	56.4	226.2	-30.3	0.00	0.00	0.00
5,400.0	5.00	76.00	5,389.6	58.5	234.7	-31.4	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Well:	GUNNER 8 FED COM 604H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP3	**Database:**	edm

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,500.0	5.00	76.00	5,489.2	60.6	243.1	-32.5	0.00	0.00	0.00
5,600.0	5.00	76.00	5,588.8	62.7	251.6	-33.6	0.00	0.00	0.00
5,700.0	5.00	76.00	5,688.5	64.8	260.0	-34.8	0.00	0.00	0.00
5,800.0	5.00	76.00	5,788.1	66.9	268.5	-35.9	0.00	0.00	0.00
5,900.0	5.00	76.00	5,887.7	69.1	277.0	-37.0	0.00	0.00	0.00
6,000.0	5.00	76.00	5,987.3	71.2	285.4	-38.2	0.00	0.00	0.00
6,100.0	5.00	76.00	6,086.9	73.3	293.9	-39.3	0.00	0.00	0.00
6,200.0	5.00	76.00	6,186.6	75.4	302.3	-40.4	0.00	0.00	0.00
6,300.0	5.00	76.00	6,286.2	77.5	310.8	-41.6	0.00	0.00	0.00
6,400.0	5.00	76.00	6,385.8	79.6	319.2	-42.7	0.00	0.00	0.00
6,500.0	5.00	76.00	6,485.4	81.7	327.7	-43.8	0.00	0.00	0.00
6,600.0	5.00	76.00	6,585.0	83.8	336.2	-45.0	0.00	0.00	0.00
6,700.0	5.00	76.00	6,684.7	85.9	344.6	-46.1	0.00	0.00	0.00
6,800.0	5.00	76.00	6,784.3	88.0	353.1	-47.2	0.00	0.00	0.00
6,900.0	5.00	76.00	6,883.9	90.1	361.5	-48.3	0.00	0.00	0.00
7,000.0	5.00	76.00	6,983.5	92.2	370.0	-49.5	0.00	0.00	0.00
7,100.0	5.00	76.00	7,083.1	94.4	378.4	-50.6	0.00	0.00	0.00
7,200.0	5.00	76.00	7,182.7	96.5	386.9	-51.7	0.00	0.00	0.00
7,300.0	5.00	76.00	7,282.4	98.6	395.4	-52.9	0.00	0.00	0.00
7,400.0	5.00	76.00	7,382.0	100.7	403.8	-54.0	0.00	0.00	0.00
7,500.0	5.00	76.00	7,481.6	102.8	412.3	-55.1	0.00	0.00	0.00
7,600.0	5.00	76.00	7,581.2	104.9	420.7	-56.3	0.00	0.00	0.00
7,700.0	5.00	76.00	7,680.8	107.0	429.2	-57.4	0.00	0.00	0.00
7,800.0	5.00	76.00	7,780.5	109.1	437.6	-58.5	0.00	0.00	0.00
7,900.0	5.00	76.00	7,880.1	111.2	446.1	-59.7	0.00	0.00	0.00
8,000.0	5.00	76.00	7,979.7	113.3	454.6	-60.8	0.00	0.00	0.00
8,100.0	5.00	76.00	8,079.3	115.4	463.0	-61.9	0.00	0.00	0.00
8,200.0	5.00	76.00	8,178.9	117.5	471.5	-63.0	0.00	0.00	0.00
8,300.0	5.00	76.00	8,278.6	119.7	479.9	-64.2	0.00	0.00	0.00
8,400.0	5.00	76.00	8,378.2	121.8	488.4	-65.3	0.00	0.00	0.00
8,500.0	5.00	76.00	8,477.8	123.9	496.8	-66.4	0.00	0.00	0.00
8,600.0	5.00	76.00	8,577.4	126.0	505.3	-67.6	0.00	0.00	0.00
8,700.0	5.00	76.00	8,677.0	128.1	513.8	-68.7	0.00	0.00	0.00
8,800.0	5.00	76.00	8,776.7	130.2	522.2	-69.8	0.00	0.00	0.00
8,900.0	5.00	76.00	8,876.3	132.3	530.7	-71.0	0.00	0.00	0.00
9,000.0	5.00	76.00	8,975.9	134.4	539.1	-72.1	0.00	0.00	0.00
9,100.0	5.00	76.00	9,075.5	136.5	547.6	-73.2	0.00	0.00	0.00
9,200.0	5.00	76.00	9,175.1	138.6	556.0	-74.4	0.00	0.00	0.00
9,300.0	5.00	76.00	9,274.8	140.7	564.5	-75.5	0.00	0.00	0.00
9,400.0	5.00	76.00	9,374.4	142.9	572.9	-76.6	0.00	0.00	0.00
9,500.0	5.00	76.00	9,474.0	145.0	581.4	-77.7	0.00	0.00	0.00
9,600.0	5.00	76.00	9,573.6	147.1	589.9	-78.9	0.00	0.00	0.00
9,700.0	5.00	76.00	9,673.2	149.2	598.3	-80.0	0.00	0.00	0.00
9,800.0	5.00	76.00	9,772.9	151.3	606.8	-81.1	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Well:	GUNNER 8 FED COM 604H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP3	**Database:**	edm

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,900.0	5.00	76.00	9,872.5	153.4	615.2	-82.3	0.00	0.00	0.00
10,000.0	5.00	76.00	9,972.1	155.5	623.7	-83.4	0.00	0.00	0.00
10,100.0	5.00	76.00	10,071.7	157.6	632.1	-84.5	0.00	0.00	0.00
10,200.0	5.00	76.00	10,171.3	159.7	640.6	-85.7	0.00	0.00	0.00
10,300.0	5.00	76.00	10,271.0	161.8	649.1	-86.8	0.00	0.00	0.00
10,400.0	5.00	76.00	10,370.6	163.9	657.5	-87.9	0.00	0.00	0.00
10,500.0	5.00	76.00	10,470.2	166.0	666.0	-89.1	0.00	0.00	0.00
10,600.0	5.00	76.00	10,569.8	168.2	674.4	-90.2	0.00	0.00	0.00
10,700.0	5.00	76.00	10,669.4	170.3	682.9	-91.3	0.00	0.00	0.00
10,800.0	5.00	76.00	10,769.0	172.4	691.3	-92.5	0.00	0.00	0.00
10,900.0	5.00	76.00	10,868.7	174.5	699.8	-93.6	0.00	0.00	0.00
11,000.0	5.00	76.00	10,968.3	176.6	708.3	-94.7	0.00	0.00	0.00
11,100.0	5.00	76.00	11,067.9	178.7	716.7	-95.8	0.00	0.00	0.00
11,200.0	5.00	76.00	11,167.5	180.8	725.2	-97.0	0.00	0.00	0.00
11,300.0	5.00	76.00	11,267.1	182.9	733.6	-98.1	0.00	0.00	0.00
11,400.0	5.00	76.00	11,366.8	185.0	742.1	-99.2	0.00	0.00	0.00
11,500.0	5.00	76.00	11,466.4	187.1	750.5	-100.4	0.00	0.00	0.00
11,600.0	5.00	76.00	11,566.0	189.2	759.0	-101.5	0.00	0.00	0.00
11,700.0	5.00	76.00	11,665.6	191.3	767.5	-102.6	0.00	0.00	0.00
11,800.0	5.00	76.00	11,765.2	193.5	775.9	-103.8	0.00	0.00	0.00
11,900.0	5.00	76.00	11,864.9	195.6	784.4	-104.9	0.00	0.00	0.00
12,000.0	5.00	76.00	11,964.5	197.7	792.8	-106.0	0.00	0.00	0.00
12,100.0	5.00	76.00	12,064.1	199.8	801.3	-107.2	0.00	0.00	0.00
12,200.0	5.00	76.00	12,163.7	201.9	809.7	-108.3	0.00	0.00	0.00
12,241.1	5.00	76.00	12,204.7	202.8	813.2	-108.7	0.00	0.00	0.00
Start DLS 10.00 TFO 89.43									
12,300.0	7.76	125.46	12,263.2	201.1	818.9	-106.4	10.00	4.68	84.02
12,400.0	16.68	148.45	12,360.9	184.9	832.0	-88.9	10.00	8.93	22.99
12,500.0	26.38	155.27	12,453.8	152.4	848.8	-54.6	10.00	9.70	6.81
12,600.0	36.24	158.57	12,539.2	104.6	869.0	-4.9	10.00	9.85	3.30
12,700.0	46.15	160.60	12,614.3	42.9	891.8	59.0	10.00	9.91	2.03
12,800.0	56.08	162.05	12,677.0	-30.8	916.6	135.0	10.00	9.94	1.45
12,900.0	66.03	163.20	12,725.4	-114.2	942.7	220.9	10.00	9.95	1.14
13,000.0	75.99	164.17	12,757.9	-204.8	969.2	314.0	10.00	9.96	0.98
13,100.0	85.95	165.07	12,773.5	-299.9	995.3	411.4	10.00	9.96	0.90
13,137.8	89.72	165.40	12,775.0	-336.5	1,005.0	448.8	10.00	9.96	0.87
Start DLS 2.00 TFO 90.05									
13,200.0	89.72	166.64	12,775.3	-396.8	1,020.0	510.5	2.00	0.00	2.00
13,300.0	89.72	168.64	12,775.8	-494.5	1,041.4	610.0	2.00	0.00	2.00
13,400.0	89.72	170.64	12,776.3	-592.9	1,059.4	709.7	2.00	0.00	2.00
13,500.0	89.72	172.64	12,776.8	-691.8	1,073.9	809.7	2.00	0.00	2.00
13,600.0	89.72	174.64	12,777.3	-791.2	1,085.0	909.7	2.00	0.00	2.00
13,700.0	89.72	176.64	12,777.7	-890.9	1,092.6	1,009.6	2.00	0.00	2.00

Concho Resources LLC

Survey Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Well:	GUNNER 8 FED COM 604H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP3	**Database:**	edm

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,800.0	89.72	178.64	12,778.2	-990.8	1,096.7	1,109.3	2.00	0.00	2.00
13,843.3	89.72	179.51	12,778.5	-1,034.1	1,097.4	1,152.4	2.00	0.00	2.00
Start 9219.6 hold at 13843.3 MD									
13,900.0	89.72	179.51	12,778.7	-1,090.8	1,097.9	1,208.8	0.00	0.00	0.00
14,000.0	89.72	179.51	12,779.2	-1,190.8	1,098.7	1,308.2	0.00	0.00	0.00
14,100.0	89.72	179.51	12,779.7	-1,290.8	1,099.6	1,407.7	0.00	0.00	0.00
14,200.0	89.72	179.51	12,780.2	-1,390.8	1,100.4	1,507.1	0.00	0.00	0.00
14,300.0	89.72	179.51	12,780.7	-1,490.8	1,101.3	1,606.6	0.00	0.00	0.00
14,400.0	89.72	179.51	12,781.2	-1,590.8	1,102.1	1,706.0	0.00	0.00	0.00
14,500.0	89.72	179.51	12,781.7	-1,690.7	1,103.0	1,805.4	0.00	0.00	0.00
14,600.0	89.72	179.51	12,782.2	-1,790.7	1,103.9	1,904.9	0.00	0.00	0.00
14,700.0	89.72	179.51	12,782.7	-1,890.7	1,104.7	2,004.3	0.00	0.00	0.00
14,800.0	89.72	179.51	12,783.2	-1,990.7	1,105.6	2,103.8	0.00	0.00	0.00
14,900.0	89.72	179.51	12,783.7	-2,090.7	1,106.4	2,203.2	0.00	0.00	0.00
15,000.0	89.72	179.51	12,784.2	-2,190.7	1,107.3	2,302.7	0.00	0.00	0.00
15,100.0	89.72	179.51	12,784.7	-2,290.7	1,108.1	2,402.1	0.00	0.00	0.00
15,200.0	89.72	179.51	12,785.2	-2,390.7	1,109.0	2,501.5	0.00	0.00	0.00
15,300.0	89.72	179.51	12,785.7	-2,490.7	1,109.8	2,601.0	0.00	0.00	0.00
15,400.0	89.72	179.51	12,786.1	-2,590.7	1,110.7	2,700.4	0.00	0.00	0.00
15,500.0	89.72	179.51	12,786.6	-2,690.7	1,111.6	2,799.9	0.00	0.00	0.00
15,600.0	89.72	179.51	12,787.1	-2,790.7	1,112.4	2,899.3	0.00	0.00	0.00
15,700.0	89.72	179.51	12,787.6	-2,890.7	1,113.3	2,998.7	0.00	0.00	0.00
15,800.0	89.72	179.51	12,788.1	-2,990.7	1,114.1	3,098.2	0.00	0.00	0.00
15,900.0	89.72	179.51	12,788.6	-3,090.7	1,115.0	3,197.6	0.00	0.00	0.00
16,000.0	89.72	179.51	12,789.1	-3,190.7	1,115.8	3,297.1	0.00	0.00	0.00
16,100.0	89.72	179.51	12,789.6	-3,290.7	1,116.7	3,396.5	0.00	0.00	0.00
16,200.0	89.72	179.51	12,790.1	-3,390.7	1,117.6	3,495.9	0.00	0.00	0.00
16,300.0	89.72	179.51	12,790.6	-3,490.7	1,118.4	3,595.4	0.00	0.00	0.00
16,400.0	89.72	179.51	12,791.1	-3,590.7	1,119.3	3,694.8	0.00	0.00	0.00
16,500.0	89.72	179.51	12,791.6	-3,690.7	1,120.1	3,794.3	0.00	0.00	0.00
16,600.0	89.72	179.51	12,792.1	-3,790.6	1,121.0	3,893.7	0.00	0.00	0.00
16,700.0	89.72	179.51	12,792.6	-3,890.6	1,121.8	3,993.2	0.00	0.00	0.00
16,800.0	89.72	179.51	12,793.1	-3,990.6	1,122.7	4,092.6	0.00	0.00	0.00
16,900.0	89.72	179.51	12,793.6	-4,090.6	1,123.5	4,192.0	0.00	0.00	0.00
17,000.0	89.72	179.51	12,794.0	-4,190.6	1,124.4	4,291.5	0.00	0.00	0.00
17,100.0	89.72	179.51	12,794.5	-4,290.6	1,125.3	4,390.9	0.00	0.00	0.00
17,200.0	89.72	179.51	12,795.0	-4,390.6	1,126.1	4,490.4	0.00	0.00	0.00
17,300.0	89.72	179.51	12,795.5	-4,490.6	1,127.0	4,589.8	0.00	0.00	0.00
17,400.0	89.72	179.51	12,796.0	-4,590.6	1,127.8	4,689.2	0.00	0.00	0.00
17,500.0	89.72	179.51	12,796.5	-4,690.6	1,128.7	4,788.7	0.00	0.00	0.00
17,600.0	89.72	179.51	12,797.0	-4,790.6	1,129.5	4,888.1	0.00	0.00	0.00
17,700.0	89.72	179.51	12,797.5	-4,890.6	1,130.4	4,987.6	0.00	0.00	0.00
17,800.0	89.72	179.51	12,798.0	-4,990.6	1,131.2	5,087.0	0.00	0.00	0.00
17,900.0	89.72	179.51	12,798.5	-5,090.6	1,132.1	5,186.4	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Well:	GUNNER 8 FED COM 604H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP3	**Database:**	edm

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
18,000.0	89.72	179.51	12,799.0	-5,190.6	1,133.0	5,285.9	0.00	0.00	0.00
18,100.0	89.72	179.51	12,799.5	-5,290.6	1,133.8	5,385.3	0.00	0.00	0.00
18,200.0	89.72	179.51	12,800.0	-5,390.6	1,134.7	5,484.8	0.00	0.00	0.00
18,300.0	89.72	179.51	12,800.5	-5,490.6	1,135.5	5,584.2	0.00	0.00	0.00
18,400.0	89.72	179.51	12,801.0	-5,590.6	1,136.4	5,683.6	0.00	0.00	0.00
18,500.0	89.72	179.51	12,801.5	-5,690.6	1,137.2	5,783.1	0.00	0.00	0.00
18,600.0	89.72	179.51	12,802.0	-5,790.5	1,138.1	5,882.5	0.00	0.00	0.00
18,700.0	89.72	179.51	12,802.4	-5,890.5	1,139.0	5,982.0	0.00	0.00	0.00
18,800.0	89.72	179.51	12,802.9	-5,990.5	1,139.8	6,081.4	0.00	0.00	0.00
18,900.0	89.72	179.51	12,803.4	-6,090.5	1,140.7	6,180.9	0.00	0.00	0.00
19,000.0	89.72	179.51	12,803.9	-6,190.5	1,141.5	6,280.3	0.00	0.00	0.00
19,100.0	89.72	179.51	12,804.4	-6,290.5	1,142.4	6,379.7	0.00	0.00	0.00
19,200.0	89.72	179.51	12,804.9	-6,390.5	1,143.2	6,479.2	0.00	0.00	0.00
19,300.0	89.72	179.51	12,805.4	-6,490.5	1,144.1	6,578.6	0.00	0.00	0.00
19,400.0	89.72	179.51	12,805.9	-6,590.5	1,144.9	6,678.1	0.00	0.00	0.00
19,500.0	89.72	179.51	12,806.4	-6,690.5	1,145.8	6,777.5	0.00	0.00	0.00
19,600.0	89.72	179.51	12,806.9	-6,790.5	1,146.7	6,876.9	0.00	0.00	0.00
19,700.0	89.72	179.51	12,807.4	-6,890.5	1,147.5	6,976.4	0.00	0.00	0.00
19,800.0	89.72	179.51	12,807.9	-6,990.5	1,148.4	7,075.8	0.00	0.00	0.00
19,900.0	89.72	179.51	12,808.4	-7,090.5	1,149.2	7,175.3	0.00	0.00	0.00
20,000.0	89.72	179.51	12,808.9	-7,190.5	1,150.1	7,274.7	0.00	0.00	0.00
20,100.0	89.72	179.51	12,809.4	-7,290.5	1,150.9	7,374.1	0.00	0.00	0.00
20,200.0	89.72	179.51	12,809.9	-7,390.5	1,151.8	7,473.6	0.00	0.00	0.00
20,300.0	89.72	179.51	12,810.4	-7,490.5	1,152.6	7,573.0	0.00	0.00	0.00
20,400.0	89.72	179.51	12,810.8	-7,590.5	1,153.5	7,672.5	0.00	0.00	0.00
20,500.0	89.72	179.51	12,811.3	-7,690.5	1,154.4	7,771.9	0.00	0.00	0.00
20,600.0	89.72	179.51	12,811.8	-7,790.5	1,155.2	7,871.4	0.00	0.00	0.00
20,700.0	89.72	179.51	12,812.3	-7,890.4	1,156.1	7,970.8	0.00	0.00	0.00
20,800.0	89.72	179.51	12,812.8	-7,990.4	1,156.9	8,070.2	0.00	0.00	0.00
20,900.0	89.72	179.51	12,813.3	-8,090.4	1,157.8	8,169.7	0.00	0.00	0.00
21,000.0	89.72	179.51	12,813.8	-8,190.4	1,158.6	8,269.1	0.00	0.00	0.00
21,100.0	89.72	179.51	12,814.3	-8,290.4	1,159.5	8,368.6	0.00	0.00	0.00
21,200.0	89.72	179.51	12,814.8	-8,390.4	1,160.4	8,468.0	0.00	0.00	0.00
21,300.0	89.72	179.51	12,815.3	-8,490.4	1,161.2	8,567.4	0.00	0.00	0.00
21,400.0	89.72	179.51	12,815.8	-8,590.4	1,162.1	8,666.9	0.00	0.00	0.00
21,500.0	89.72	179.51	12,816.3	-8,690.4	1,162.9	8,766.3	0.00	0.00	0.00
21,600.0	89.72	179.51	12,816.8	-8,790.4	1,163.8	8,865.8	0.00	0.00	0.00
21,700.0	89.72	179.51	12,817.3	-8,890.4	1,164.6	8,965.2	0.00	0.00	0.00
21,800.0	89.72	179.51	12,817.8	-8,990.4	1,165.5	9,064.6	0.00	0.00	0.00
21,900.0	89.72	179.51	12,818.3	-9,090.4	1,166.3	9,164.1	0.00	0.00	0.00
22,000.0	89.72	179.51	12,818.7	-9,190.4	1,167.2	9,263.5	0.00	0.00	0.00
22,100.0	89.72	179.51	12,819.2	-9,290.4	1,168.1	9,363.0	0.00	0.00	0.00
22,200.0	89.72	179.51	12,819.7	-9,390.4	1,168.9	9,462.4	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	NORTHERN DELAWARE BASIN	**Local Co-ordinate Reference:**	Well GUNNER 8 FED COM 604H
Project:	LEA COUNTY, NM	**TVD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Site:	BULLDOG	**MD Reference:**	KB=26' @ 3359.4usft (McVAY 8)
Well:	GUNNER 8 FED COM 604H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP3	**Database:**	edm

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
22,300.0	89.72	179.51	12,820.2	-9,490.4	1,169.8	9,561.9	0.00	0.00	0.00
22,400.0	89.72	179.51	12,820.7	-9,590.4	1,170.6	9,661.3	0.00	0.00	0.00
22,500.0	89.72	179.51	12,821.2	-9,690.4	1,171.5	9,760.7	0.00	0.00	0.00
22,600.0	89.72	179.51	12,821.7	-9,790.4	1,172.3	9,860.2	0.00	0.00	0.00
22,700.0	89.72	179.51	12,822.2	-9,890.3	1,173.2	9,959.6	0.00	0.00	0.00
22,800.0	89.72	179.51	12,822.7	-9,990.3	1,174.0	10,059.1	0.00	0.00	0.00
22,900.0	89.72	179.51	12,823.2	-10,090.3	1,174.9	10,158.5	0.00	0.00	0.00
23,000.0	89.72	179.51	12,823.7	-10,190.3	1,175.8	10,257.9	0.00	0.00	0.00
23,062.9	89.72	179.51	12,824.0	-10,253.2	1,176.3	10,320.5	0.00	0.00	0.00
TD at 23062.9									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP (GUNNER 8 FED	0.00	0.00	12,775.0	159.5	1,088.6	393,595.50	759,759.20	32° 4' 45.602 N	103° 29' 40.835 W
- plan misses target center by 270.8usft at 12763.8usft MD (12655.9 TVD, -2.9 N, 907.5 E)									
- Circle (radius 50.0)									
LTP (GUNNER 8 FED	0.00	0.00	12,824.0	-10,203.2	1,175.8	383,232.80	759,846.40	32° 3' 3.051 N	103° 29' 40.757 W
- plan misses target center by 12.9usft at 23000.0usft MD (12823.7 TVD, -10190.3 N, 1175.8 E)									
- Point									
PBHL (GUNNER 8 FE	-0.28	359.51	12,824.0	-10,253.2	1,176.3	383,182.80	759,846.90	32° 3' 2.556 N	103° 29' 40.756 W
- plan hits target center									
- Rectangle (sides W100.0 H10,413.1 D20.0)									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2500	2500	0	0	Start Build 2.00
2750	2750	3	11	Start 9491.1 hold at 2750.0 MD
12,241	12,205	203	813	Start DLS 10.00 TFO 89.43
13,138	12,775	-336	1005	Start DLS 2.00 TFO 90.05
13,843	12,778	-1034	1097	Start 9219.6 hold at 13843.3 MD
23,063	12,824	-10,253	1176	TD at 23062.9

Checked By: _____ Approved By: _____ Date: _____