

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) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-101

August 1, 2011

Permit 293478

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701		2. OGRID Number 229137
		3. API Number 30-015-48097
4. Property Code 330287	5. Property Name KRAKEN STATE COM	6. Well No. 703H

7. Surface Location

UL - Lot P	Section 33	Township 25S	Range 28E	Lot Idn P	Feet From 600	N/S Line S	Feet From 1060	E/W Line E	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot B	Section 16	Township 26S	Range 28E	Lot Idn B	Feet From 800	N/S Line N	Feet From 2215	E/W Line E	County Eddy
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9. Pool Information

PURPLE SAGE;WOLFCAMP (GAS)	98220
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Additional Well Information

11. Work Type New Well	12. Well Type GAS	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 2959
16. Multiple N	17. Proposed Depth 21260	18. Formation Wolfcamp	19. Contractor	20. Spud Date 7/1/2021
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	54.5	600	500	0
Int1	12.25	9.625	40	9000	1400	0
Prod	8.75	5.5	20	21260	3500	8600

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	5000	5000	Cameron

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.	OIL CONSERVATION DIVISION	
Signature:		
Printed Name: Electronically filed by Robyn Russell	Approved By: Kurt Simmons	
Title: Regulatory Compliance Lead	Title: Petroleum Specialist - A	
Email Address: robyn.m.russell@conocophillips.com	Approved Date: 3/16/2021	Expiration Date: 3/16/2023
Date: 3/15/2021	Phone: 432-685-4385	Conditions of Approval Attached

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015-		2 Pool Code 98220		3 Pool Name Purple Sage; Wolfcamp (Gas)					
4 Property Code		5 Property Name KRAKEN STATE COM						6 Well Number 703H	
7 OGRID No. 229137		8 Operator Name COG OPERATING LLC						9 Elevation 2959'	
10 Surface Location									
UL or lot no. P	Section 33	Township 25-S	Range 28-E	Lot Idn	Feet from the 600'	North/South line SOUTH	Feet from the 1060'	East/West line EAST	County EDDY
11 Bottom Hole Location If Different From Surface									
UL or lot no. B	Section 16	Township 26-S	Range 28-E	Lot Idn	Feet from the 800'	North/South line NORTH	Feet from the 2215'	East/West line EAST	County EDDY
12 Dedicated Acres 720		13 Joint or Infill		14 Consolidation Code		15 Order No.			

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.

	CORNER DATA NEW MEXICO EAST - NAD 83 A - FOUND IRON PIPE W/ BRASS CAP N:392529.06' E:613351.46' B - FOUND IRON PIPE W/ BRASS CAP N:392531.80' E:618012.57' C - FOUND IRON PIPE W/ BRASS CAP N:392534.13' E:618872.01' D - CALCULATED CORNER N:389881.51' E:618722.69' E - FOUND IRON ROD NO CAP N:387228.88' E:618773.38' F - CALCULATED CORNER N:387234.29' E:616099.89' G - CALCULATED CORNER N:387239.69' E:613426.41' H - FOUND IRON ROD NO CAP N:389887.40' E:613383.37' I - CALCULATED CORNER N:384578.45' E:618773.81' J - FOUND IRON N:381928.01' E:618774.25' K - CALCULATED CORNER N:381936.14' E:616099.30' L - CALCULATED CORNER N:381944.28' E:613424.35' M - CALCULATED CORNER N:384591.98' E:613425.38' N - FOUND 5/8" IRON ROD W/ ALUM CAP N:379277.91' E:618772.66' O - FOUND IRON PIPE W/ BRASS CAP N:376622.82' E:618799.52' P - CALCULATED CORNER N:376631.44' E:618063.29' Q - FOUND BENT IRON PIPE TAGGED W/ WASHER N:376640.07' E:613327.06' R - FOUND LIMESTONE MARKED 1/4 N:379296.57' E:613303.89'	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Stan Wagner</i> 3/11/2021 Signature Date Stan Wagner Printed Name E-mail Address	
	SURFACE HOLE LOCATION (SHL) NEW MEXICO EAST - NAD 83 X=617816.05 Y=393133.19 LAT.= 32.08056343° N LONG.= 104.08704876° W 600' FSL, 1060' FEL SECTION 33	FIRST TAKE POINT (FTP) NEW MEXICO EAST - NAD 83 X=616565.85 Y=392522.29 LAT.= 32.07889063° N LONG.= 104.09044402° W 10' FNL, 2106' FEL SECTION 4	18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey Signature and Seal of Professional Surveyor Garrett J Smelker 25036 01/28/2021 PROFESSIONAL SURVEYOR
	POINT OF INTEREST (P1) NEW MEXICO EAST - NAD 83 X=616668.19 Y=382264.42 LAT.= 32.05069161° N LONG.= 104.09018820° W 330' FSL, 2106' FEL SECTION 9	LAST TAKE POINT (LTP) & BOTTOM HOLE LOCATION (BHL) NEW MEXICO EAST - NAD 83 X=616558.77 Y=381134.74 LAT.= 32.04758687° N LONG.= 104.09054957° W 800' FNL, 2215' FEL SECTION 16	Certificate Number
	16		

Intent ☒ As Drilled ☐API #
30-015-

Operator Name:	Property Name:	Well Number
COG Operating LLC	Kraken State Com	703H

Kick Off Point (KOP)

UL P	Section 33	Township 25S	Range 28E	Lot	Feet	From N/S	Feet	From E/W	County Eddy
Latitude					Longitude			NAD 83	

First Take Point (FTP)

UL B	Section 4	Township 26S	Range 28E	Lot	Feet 10	From N/S North	Feet 2106	From E/W East	County Lea
Latitude 32.07889063					Longitude -104.09044402			NAD NAD 83	

Last Take Point (LTP)

UL B	Section 16	Township 26S	Range 28E	Lot	Feet 800	From N/S North	Feet 2215	From E/W East	County Lea
Latitude 32.04758687					Longitude -104.09054957			NAD NAD 83	

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

☐ Yes

Is this well an infill well?

☐ No

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

API #
30-015-

Operator Name:	Property Name:	Well Number
COG Operating LLC	Kraken State Com	703H

KZ 06/29/2018

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GAS CAPTURE PLAN

Date: 3/16/2021

☒ Original

Operator & OGRID No.: [229137] COG OPERATING LLC

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
KRAKEN STATE COM #703H	30-015-48097	P-33-25S-28E	0600S 1060E	4047	None	Red Bluff Plant Sec 35-Blk 57, T2 Culberson CO TX

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to ETC Texas Pipeline, Ltd. and will be connected to ETC Texas Pipeline, Ltd. Low Pressure gathering system located in Eddy County, New Mexico. It will require 0' of pipeline to connect the facility to Low Pressure gathering system. COG OPERATING LLC provides (periodically) to ETC Texas Pipeline, Ltd. a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, COG OPERATING LLC and ETC Texas Pipeline, Ltd. have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at ETC Texas Pipeline, Ltd. Processing Plant located in Sec. 33, Twn. 25S, Rng. 28E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on ETC Texas Pipeline, Ltd. system at that time. Based on current information, it is COG OPERATING LLC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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Form APD Comments

Permit 293478

PERMIT COMMENTS

Operator Name and Address: COG OPERATING LLC [229137] 600 W Illinois Ave Midland, TX 79701		API Number: 30-015-48097
		Well: KRAKEN STATE COM #703H

Created By	Comment	Comment Date
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Form APD Conditions

Permit 293478

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: COG OPERATING LLC [229137] 600 W Illinois Ave Midland, TX 79701	API Number: 30-015-48097
	Well: KRAKEN STATE COM #703H

OCD Reviewer	Condition
ksimmons	Notify OCD 24 hours prior to casing & cement
ksimmons	Will require a File As Drilled C-102 and a Directional Survey with the C-104
ksimmons	Cement is required to circulate on both surface and intermediate1 strings of casing
kpickford	Will require a administrative order for non-standard location prior to placing the well on production
kpickford	Will require administrative order for non-standard spacing unit
kpickford	Surface casing must be set 25' below top of Rustler Anhydrite or salt in order to seal off protectable water
kpickford	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud
kpickford	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud 2)- Drilling Sundries Form C-103 (Casing and Cement test are to be submitted within 10 days 3)- Completion Reports & Logs are to be submitted within 45 days 4)- Deviation / Directional Drill Survey are to be filed with or prior to C-104
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system

Kraken State Com #703H

Casing and Cement

<u>String</u>	<u>Hole Size</u>	<u>Csg OD</u>	<u>PPE</u>	<u>Depth</u>	<u>Sx Cement</u>	<u>TOC</u>
Surface	17-1/2"	13-3/8"	54.5#	600'	500	0'
Intermediate	12-1/4"	9-5/8"	40#	9,000'	1400	0'
Production	8-3/4"	5-1/2"	20#	21,260'	3,500	8,600'

Well Plan

Drill 17-1/2" hole to 600' into the Rustler. Run 13-3/8" 54.5# J55 STC casing to TD and cement to surface in one stage. Will set in Rustler and cover water depth.

Drill 12-1/4" hole to ~9,000' with cut brine emulsion. Run 9-5/8 40# L-80 BTC to TD and cement to surface in one stage.

Drill 8-3/4" vertical hole, curve & lateral to 21,260' with Cut Brine. Run 5-1/2" 20# P110 BTC casing to TD and cement to 8,600' in one stage.

Well Control

<u>Type</u>	<u>Working Pressure</u>	<u>Test Pressure</u>	<u>Manufacture</u>
Double Ram	5000 psi	5000 psi	Cameron

Concho Resources LLC

Anticollision Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Reference Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	KRAKEN ST COM #703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Reference	PWP1		
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 2,000.0 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	2/25/2021		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	21,259.7	PWP1 (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
HONEY GRAHAM STATE PROJECT (ATLAS 2628)						
GRAHAM CRACKER 16 STATE #7H - OWB - ACTUAL V	21,213.2	9,570.9	327.7	215.2	2.915	CC
GRAHAM CRACKER 16 STATE #7H - OWB - ACTUAL V	21,260.2	9,615.0	327.9	215.1	2.907	ES, SF
KRAKEN ST COM PROJECT						
KRAKEN ST COM #701H - OWB - PWP1	2,500.0	2,500.0	60.0	47.3	4.728	CC, ES, SF
KRAKEN ST COM #702H - OWB - PWP1	2,500.0	2,500.0	30.0	17.3	2.363	CC, ES, SF
MYOX 28 STATE PROJECT (ATLAS 2528)						
MYOX 28 ST COM #701H - OWB - AWP						Out of range
MYOX 28 ST COM #702H - OWB - AWP	9,364.4	19,308.3	445.3	327.7	3.787	CC
MYOX 28 ST COM #702H - OWB - AWP	9,375.0	19,315.9	445.5	327.5	3.777	ES
MYOX 28 ST COM #702H - OWB - AWP	9,425.0	19,353.7	449.3	329.9	3.762	SF
MYOX 28 ST COM #703H - OWB - AWP	9,700.0	19,564.0	334.3	213.7	2.772	SF
MYOX 28 ST COM #703H - OWB - AWP	9,725.0	19,564.0	332.5	213.2	2.789	ES
MYOX 28 ST COM #703H - OWB - AWP	9,744.7	19,564.0	332.0	214.2	2.817	CC
SRO STATE PROJECT (ATLAS 2628)						
SRO STATE UNIT #1H - OWB - ACTUAL WELLPATH						Out of range
SRO STATE UNIT #31H - OWB - ACTUAL WELLPATH						Out of range

HONEY GRAHAM STATE PROJECT (ATLAS 2628) - GRAHAM CRACKER 16 STATE #7H - OWB - AC												Offset Site Error:	0.0 usft
Survey Program: 100-GYRO-NS, 6467-MWD												Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
20,000.0	9,437.3	9,032.9	8,992.0	98.2	25.2	-12.85	-11,496.0	-926.6	934.7	852.6	82.11	11.383	
20,100.0	9,437.0	9,059.8	9,012.7	99.0	25.3	-12.71	-11,512.1	-932.8	854.7	770.8	83.98	10.178	
20,200.0	9,436.8	9,080.0	9,027.7	99.8	25.3	-12.60	-11,524.8	-937.5	777.4	690.9	86.47	8.990	
20,300.0	9,436.5	9,119.6	9,056.0	100.6	25.4	-12.31	-11,550.9	-946.8	702.8	614.5	88.39	7.951	
20,400.0	9,436.2	9,157.3	9,081.3	101.4	25.5	-11.88	-11,577.2	-956.3	631.6	540.9	90.72	6.962	
20,500.0	9,436.0	9,194.6	9,105.0	102.2	25.6	-11.44	-11,604.5	-965.2	564.3	470.8	93.46	6.038	
20,600.0	9,435.7	9,238.0	9,130.3	103.0	25.8	-10.95	-11,638.6	-974.5	502.5	406.3	96.26	5.221	
20,700.0	9,435.5	9,270.0	9,146.6	103.8	25.9	-10.52	-11,665.3	-981.1	447.5	347.4	100.15	4.469	
20,800.0	9,435.2	9,313.9	9,165.6	104.7	26.0	-9.84	-11,703.9	-989.7	401.4	297.9	103.53	3.877	
20,900.0	9,434.9	9,364.0	9,181.9	105.5	26.3	-8.80	-11,750.1	-999.8	365.4	258.9	106.55	3.430	

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

Concho Resources LLC

Anticollision Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Reference Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	KRAKEN ST COM #703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

HONEY GRAHAM STATE PROJECT (ATLAS 2628) - GRAHAM CRACKER 16 STATE #7H - OWB - AC													Offset Site Error:	0.0 usft
Survey Program: 100-GYRO-NS, 6467-MWD													Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation		
Depth	Depth	Depth	Depth			Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation	Factor		
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
21,000.0	9,434.7	9,416.1	9,192.9	106.3	26.5	-7.34	-11,799.7	-1,011.1	341.0	231.9	109.10	3.125		
21,100.0	9,434.4	9,470.0	9,197.5	107.1	26.8	-5.57	-11,852.1	-1,022.9	329.7	218.7	110.98	2.971		
21,200.0	9,434.2	9,558.5	9,197.8	107.9	27.3	-2.48	-11,938.4	-1,042.3	327.7	215.4	112.30	2.918		
21,213.2	9,434.1	9,570.9	9,197.7	108.0	27.4	-2.01	-11,950.5	-1,045.1	327.7	215.2	112.41	2.915 CC		
21,260.2	9,434.0	9,615.0	9,197.1	108.3	27.7	-0.30	-11,993.3	-1,055.7	327.9	215.1	112.83	2.907 ES, SF		

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

Concho Resources LLC

Anticollision Report



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Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Reference Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
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Reference Well:	KRAKEN ST COM #703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	3.0 usft
Survey Program: 0-Standard Keeper 104, 9090-MWD+IFR1+FDIR												Offset Well Error:	3.0 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	0.0	0.0	3.0	3.0	89.93	0.1	60.0	60.0				
100.0	100.0	100.0	100.0	3.0	3.0	89.93	0.1	60.0	60.0	54.0	6.00	9.991	
200.0	200.0	200.0	200.0	3.0	3.0	89.93	0.1	60.0	60.0	53.9	6.04	9.928	
300.0	300.0	300.0	300.0	3.1	3.0	89.93	0.1	60.0	60.0	53.9	6.12	9.796	
400.0	400.0	400.0	400.0	3.2	3.0	89.93	0.1	60.0	60.0	53.7	6.24	9.606	
500.0	500.0	500.0	500.0	3.4	3.1	89.93	0.1	60.0	60.0	53.6	6.40	9.371	
600.0	600.0	600.0	600.0	3.6	3.1	89.93	0.1	60.0	60.0	53.4	6.59	9.103	
700.0	700.0	700.0	700.0	3.8	3.1	89.93	0.1	60.0	60.0	53.2	6.80	8.815	
800.0	800.0	800.0	800.0	4.0	3.2	89.93	0.1	60.0	60.0	52.9	7.04	8.517	
900.0	900.0	900.0	900.0	4.2	3.2	89.93	0.1	60.0	60.0	52.7	7.30	8.216	
1,000.0	1,000.0	1,000.0	1,000.0	4.5	3.2	89.93	0.1	60.0	60.0	52.4	7.58	7.918	
1,100.0	1,100.0	1,100.0	1,100.0	4.8	3.3	89.93	0.1	60.0	60.0	52.1	7.86	7.627	
1,200.0	1,200.0	1,200.0	1,200.0	5.1	3.4	89.93	0.1	60.0	60.0	51.8	8.17	7.345	
1,300.0	1,300.0	1,300.0	1,300.0	5.4	3.4	89.93	0.1	60.0	60.0	51.5	8.48	7.075	
1,400.0	1,400.0	1,400.0	1,400.0	5.7	3.5	89.93	0.1	60.0	60.0	51.2	8.80	6.818	
1,500.0	1,500.0	1,500.0	1,500.0	6.0	3.5	89.93	0.1	60.0	60.0	50.9	9.13	6.572	
1,600.0	1,600.0	1,600.0	1,600.0	6.3	3.6	89.93	0.1	60.0	60.0	50.5	9.46	6.339	
1,700.0	1,700.0	1,700.0	1,700.0	6.6	3.7	89.93	0.1	60.0	60.0	50.2	9.80	6.119	
1,800.0	1,800.0	1,800.0	1,800.0	6.9	3.8	89.93	0.1	60.0	60.0	49.8	10.15	5.910	
1,900.0	1,900.0	1,900.0	1,900.0	7.2	3.9	89.93	0.1	60.0	60.0	49.5	10.50	5.712	
2,000.0	2,000.0	2,000.0	2,000.0	7.6	3.9	89.93	0.1	60.0	60.0	49.1	10.86	5.525	
2,100.0	2,100.0	2,100.0	2,100.0	7.9	4.0	89.93	0.1	60.0	60.0	48.8	11.22	5.348	
2,200.0	2,200.0	2,200.0	2,200.0	8.2	4.1	89.93	0.1	60.0	60.0	48.4	11.58	5.180	
2,300.0	2,300.0	2,300.0	2,300.0	8.6	4.2	89.93	0.1	60.0	60.0	48.0	11.95	5.021	
2,400.0	2,400.0	2,400.0	2,400.0	8.9	4.3	89.93	0.1	60.0	60.0	47.7	12.32	4.870	
2,500.0	2,500.0	2,500.0	2,500.0	9.2	4.4	89.93	0.1	60.0	60.0	47.3	12.69	4.728 CC, ES, SF	
2,600.0	2,600.0	2,598.6	2,598.6	9.6	4.4	-169.14	-1.2	61.1	62.8	49.8	13.05	4.813	
2,700.0	2,699.8	2,696.6	2,696.5	9.9	4.4	-166.80	-5.1	64.3	71.4	58.0	13.40	5.327	
2,775.0	2,774.6	2,769.9	2,769.5	10.1	4.4	-164.68	-9.6	68.1	81.6	67.9	13.66	5.971	
2,800.0	2,799.5	2,794.6	2,794.1	10.2	4.4	-164.08	-11.3	69.5	85.4	71.7	13.75	6.212	
2,900.0	2,899.0	2,893.3	2,892.5	10.5	4.4	-162.12	-17.9	75.0	100.9	86.8	14.11	7.152	
3,000.0	2,998.5	2,992.1	2,990.9	10.9	4.4	-160.69	-24.4	80.5	116.5	102.0	14.47	8.049	
3,100.0	3,098.1	3,090.8	3,089.2	11.2	4.4	-159.59	-31.0	86.1	132.1	117.3	14.84	8.904	
3,200.0	3,197.6	3,189.6	3,187.6	11.5	4.4	-158.72	-37.6	91.6	147.8	132.6	15.21	9.717	
3,300.0	3,297.2	3,288.3	3,286.0	11.9	4.4	-158.02	-44.2	97.1	163.5	147.9	15.58	10.492	
3,400.0	3,396.7	3,387.1	3,384.3	12.2	4.4	-157.45	-50.8	102.7	179.2	163.2	15.96	11.228	
3,500.0	3,496.2	3,485.8	3,482.7	12.6	4.4	-156.96	-57.4	108.2	194.9	178.6	16.34	11.929	
3,600.0	3,595.8	3,584.6	3,581.1	12.9	4.4	-156.55	-64.0	113.7	210.7	193.9	16.73	12.596	
3,700.0	3,695.3	3,683.3	3,679.4	13.2	4.4	-156.20	-70.6	119.3	226.4	209.3	17.11	13.230	
3,800.0	3,794.9	3,782.0	3,777.8	13.6	4.5	-155.89	-77.2	124.8	242.2	224.7	17.51	13.834	
3,900.0	3,894.4	3,880.8	3,876.2	13.9	4.5	-155.62	-83.8	130.3	257.9	240.0	17.90	14.408	
4,000.0	3,993.9	3,979.5	3,974.5	14.3	4.5	-155.38	-90.4	135.9	273.7	255.4	18.30	14.955	
4,100.0	4,093.5	4,078.3	4,072.9	14.6	4.5	-155.17	-97.0	141.4	289.5	270.8	18.70	15.477	
4,200.0	4,193.0	4,177.0	4,171.3	15.0	4.6	-154.98	-103.6	146.9	305.2	286.1	19.11	15.974	
4,300.0	4,292.6	4,275.8	4,269.6	15.3	4.6	-154.80	-110.1	152.5	321.0	301.5	19.52	16.447	
4,400.0	4,392.1	4,374.5	4,368.0	15.7	4.7	-154.65	-116.7	158.0	336.8	316.9	19.93	16.899	
4,500.0	4,491.6	4,473.2	4,466.4	16.0	4.7	-154.51	-123.3	163.5	352.6	332.2	20.34	17.331	
4,600.0	4,591.2	4,572.0	4,564.7	16.4	4.8	-154.38	-129.9	169.1	368.4	347.6	20.76	17.743	
4,700.0	4,690.7	4,670.7	4,663.1	16.7	4.8	-154.26	-136.5	174.6	384.2	363.0	21.18	18.136	
4,800.0	4,790.3	4,769.5	4,761.5	17.1	4.9	-154.15	-143.1	180.1	399.9	378.3	21.60	18.512	
4,900.0	4,889.8	4,868.2	4,859.8	17.4	5.0	-154.04	-149.7	185.7	415.7	393.7	22.03	18.872	
5,000.0	4,989.3	4,967.0	4,958.2	17.8	5.0	-153.95	-156.3	191.2	431.5	409.1	22.46	19.216	

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

Concho Resources LLC

Anticollision Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Reference Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	KRAKEN ST COM #703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	3.0 usft
Survey Program: 0-Standard Keeper 104, 9090-MWD+IFR1+FDIR												Offset Well Error:	3.0 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.0	5,088.9	5,065.7	5,056.6	18.1	5.1	-153.86	-162.9	196.7	447.3	424.4	22.89	19.546	
5,200.0	5,188.4	5,164.4	5,154.9	18.5	5.2	-153.78	-169.5	202.3	463.1	439.8	23.32	19.861	
5,300.0	5,288.0	5,263.2	5,253.3	18.8	5.2	-153.71	-176.1	207.8	478.9	455.1	23.75	20.164	
5,400.0	5,387.5	5,361.9	5,351.7	19.2	5.3	-153.63	-182.7	213.3	494.7	470.5	24.19	20.454	
5,500.0	5,487.0	5,460.7	5,450.0	19.6	5.4	-153.57	-189.3	218.8	510.5	485.9	24.62	20.732	
5,600.0	5,586.6	5,559.4	5,548.4	19.9	5.5	-153.50	-195.9	224.4	526.3	501.2	25.06	20.999	
5,700.0	5,686.1	5,658.2	5,646.8	20.3	5.6	-153.45	-202.4	229.9	542.1	516.6	25.50	21.256	
5,800.0	5,785.7	5,756.9	5,745.1	20.6	5.6	-153.39	-209.0	235.4	557.9	531.9	25.94	21.502	
5,900.0	5,885.2	5,855.6	5,843.5	21.0	5.7	-153.34	-215.6	241.0	573.7	547.3	26.39	21.739	
6,000.0	5,984.7	5,954.4	5,941.9	21.3	5.8	-153.29	-222.2	246.5	589.5	562.6	26.83	21.967	
6,100.0	6,084.3	6,053.1	6,040.2	21.7	5.9	-153.24	-228.8	252.0	605.3	578.0	27.28	22.186	
6,200.0	6,183.8	6,151.9	6,138.6	22.1	6.0	-153.19	-235.4	257.6	621.1	593.3	27.73	22.398	
6,300.0	6,283.3	6,250.6	6,237.0	22.4	6.1	-153.15	-242.0	263.1	636.9	608.7	28.18	22.601	
6,400.0	6,382.9	6,349.4	6,335.3	22.8	6.2	-153.11	-248.6	268.6	652.6	624.0	28.63	22.797	
6,500.0	6,482.4	6,448.1	6,433.7	23.1	6.3	-153.07	-255.2	274.2	668.4	639.4	29.08	22.986	
6,600.0	6,582.0	6,546.8	6,532.1	23.5	6.3	-153.04	-261.8	279.7	684.2	654.7	29.53	23.168	
6,700.0	6,681.5	6,645.6	6,630.4	23.9	6.4	-153.00	-268.4	285.2	700.0	670.1	29.99	23.344	
6,800.0	6,781.0	6,744.3	6,728.8	24.2	6.5	-152.97	-275.0	290.8	715.8	685.4	30.44	23.514	
6,900.0	6,880.6	6,843.1	6,827.2	24.6	6.6	-152.93	-281.6	296.3	731.6	700.7	30.90	23.678	
7,000.0	6,980.1	6,941.8	6,925.6	24.9	6.7	-152.90	-288.1	301.8	747.4	716.1	31.36	23.836	
7,100.0	7,079.7	7,040.6	7,023.9	25.3	6.8	-152.87	-294.7	307.4	763.2	731.4	31.82	23.989	
7,200.0	7,179.2	7,139.3	7,122.3	25.6	6.9	-152.85	-301.3	312.9	779.0	746.8	32.28	24.137	
7,300.0	7,278.7	7,238.0	7,220.7	26.0	7.0	-152.82	-307.9	318.4	794.8	762.1	32.73	24.282	
7,400.0	7,378.3	7,336.8	7,319.0	26.4	7.1	-152.79	-314.5	324.0	810.6	777.4	33.20	24.420	
7,500.0	7,477.8	7,435.5	7,417.4	26.7	7.2	-152.77	-321.1	329.5	826.4	792.8	33.66	24.554	
7,600.0	7,577.4	7,534.3	7,515.8	27.1	7.3	-152.74	-327.7	335.0	842.2	808.1	34.12	24.684	
7,700.0	7,676.9	7,633.0	7,614.1	27.5	7.4	-152.72	-334.3	340.5	858.0	823.5	34.58	24.810	
7,800.0	7,776.4	7,731.8	7,712.5	27.8	7.5	-152.70	-340.9	346.1	873.8	838.8	35.05	24.932	
7,900.0	7,876.0	7,830.5	7,810.9	28.2	7.6	-152.67	-347.5	351.6	889.7	854.1	35.51	25.050	
8,000.0	7,975.5	7,929.3	7,909.2	28.5	7.7	-152.65	-354.1	357.1	905.5	869.5	35.98	25.165	
8,100.0	8,075.1	8,028.0	8,007.6	28.9	7.9	-152.63	-360.7	362.7	921.3	884.8	36.45	25.277	
8,200.0	8,174.6	8,126.7	8,106.0	29.3	8.0	-152.61	-367.3	368.2	937.1	900.1	36.91	25.385	
8,300.0	8,274.1	8,225.5	8,204.3	29.6	8.1	-152.59	-373.9	373.7	952.9	915.5	37.38	25.490	
8,400.0	8,373.7	8,324.2	8,302.7	30.0	8.2	-152.58	-380.4	379.3	968.7	930.8	37.85	25.592	
8,500.0	8,473.2	8,423.0	8,401.1	30.3	8.3	-152.56	-387.0	384.8	984.5	946.1	38.32	25.691	

Concho Resources LLC

Anticollision Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Reference Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	KRAKEN ST COM #703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	3.0 usft
Survey Program: 0-Standard Keeper 104, 9068-MWD+IFR1+FDIR												Offset Well Error:	3.0 usft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	0.0	0.0	3.0	3.0	90.00	0.0	30.0	30.0				
100.0	100.0	100.0	100.0	3.0	3.0	90.00	0.0	30.0	30.0	24.0	6.00	4.994	
200.0	200.0	200.0	200.0	3.0	3.0	90.00	0.0	30.0	30.0	23.9	6.04	4.962	
300.0	300.0	300.0	300.0	3.1	3.0	90.00	0.0	30.0	30.0	23.9	6.12	4.896	
400.0	400.0	400.0	400.0	3.2	3.0	90.00	0.0	30.0	30.0	23.7	6.24	4.801	
500.0	500.0	500.0	500.0	3.4	3.1	90.00	0.0	30.0	30.0	23.6	6.40	4.684	
600.0	600.0	600.0	600.0	3.6	3.1	90.00	0.0	30.0	30.0	23.4	6.59	4.550	
700.0	700.0	700.0	700.0	3.8	3.1	90.00	0.0	30.0	30.0	23.2	6.80	4.406	
800.0	800.0	800.0	800.0	4.0	3.2	90.00	0.0	30.0	30.0	22.9	7.04	4.257	
900.0	900.0	900.0	900.0	4.2	3.2	90.00	0.0	30.0	30.0	22.7	7.30	4.106	
1,000.0	1,000.0	1,000.0	1,000.0	4.5	3.2	90.00	0.0	30.0	30.0	22.4	7.58	3.958	
1,100.0	1,100.0	1,100.0	1,100.0	4.8	3.3	90.00	0.0	30.0	30.0	22.1	7.86	3.812	
1,200.0	1,200.0	1,200.0	1,200.0	5.1	3.4	90.00	0.0	30.0	30.0	21.8	8.17	3.671	
1,300.0	1,300.0	1,300.0	1,300.0	5.4	3.4	90.00	0.0	30.0	30.0	21.5	8.48	3.537	
1,400.0	1,400.0	1,400.0	1,400.0	5.7	3.5	90.00	0.0	30.0	30.0	21.2	8.80	3.408	
1,500.0	1,500.0	1,500.0	1,500.0	6.0	3.5	90.00	0.0	30.0	30.0	20.9	9.13	3.285	
1,600.0	1,600.0	1,600.0	1,600.0	6.3	3.6	90.00	0.0	30.0	30.0	20.5	9.46	3.169	
1,700.0	1,700.0	1,700.0	1,700.0	6.6	3.7	90.00	0.0	30.0	30.0	20.2	9.80	3.058	
1,800.0	1,800.0	1,800.0	1,800.0	6.9	3.8	90.00	0.0	30.0	30.0	19.8	10.15	2.954	
1,900.0	1,900.0	1,900.0	1,900.0	7.2	3.9	90.00	0.0	30.0	30.0	19.5	10.50	2.855	
2,000.0	2,000.0	2,000.0	2,000.0	7.6	3.9	90.00	0.0	30.0	30.0	19.1	10.86	2.761	
2,100.0	2,100.0	2,100.0	2,100.0	7.9	4.0	90.00	0.0	30.0	30.0	18.8	11.22	2.673	
2,200.0	2,200.0	2,200.0	2,200.0	8.2	4.1	90.00	0.0	30.0	30.0	18.4	11.58	2.589	
2,300.0	2,300.0	2,300.0	2,300.0	8.6	4.2	90.00	0.0	30.0	30.0	18.0	11.95	2.510	
2,400.0	2,400.0	2,400.0	2,400.0	8.9	4.3	90.00	0.0	30.0	30.0	17.7	12.32	2.434	
2,500.0	2,500.0	2,500.0	2,500.0	9.2	4.4	90.00	0.0	30.0	30.0	17.3	12.69	2.363 CC, ES, SF	
2,600.0	2,600.0	2,600.0	2,600.0	9.6	4.5	-170.54	0.0	30.0	31.7	18.6	13.05	2.429	
2,700.0	2,699.8	2,699.8	2,699.8	9.9	4.6	-171.86	0.0	30.0	36.9	23.5	13.41	2.749	
2,775.0	2,774.6	2,774.6	2,774.6	10.1	4.7	-173.02	0.0	30.0	43.0	29.3	13.68	3.145	
2,800.0	2,799.5	2,799.5	2,799.5	10.2	4.7	-173.39	0.0	30.0	45.4	31.6	13.78	3.296	
2,900.0	2,899.0	2,899.0	2,899.0	10.5	4.8	-174.54	0.0	30.0	54.9	40.8	14.14	3.885	
3,000.0	2,998.5	2,998.5	2,998.5	10.9	4.9	-175.35	0.0	30.0	64.5	50.0	14.51	4.444	
3,100.0	3,098.1	3,098.1	3,098.1	11.2	5.0	-175.95	0.0	30.0	74.0	59.2	14.88	4.975	
3,200.0	3,197.6	3,197.6	3,197.6	11.5	5.1	-176.41	0.0	30.0	83.6	68.3	15.26	5.479	
3,300.0	3,297.2	3,297.2	3,297.2	11.9	5.2	-176.78	0.0	30.0	93.2	77.5	15.64	5.958	
3,400.0	3,396.7	3,396.7	3,396.7	12.2	5.3	-177.08	0.0	30.0	102.7	86.7	16.02	6.414	
3,500.0	3,496.2	3,496.2	3,496.2	12.6	5.4	-177.33	0.0	30.0	112.3	95.9	16.40	6.848	
3,600.0	3,595.8	3,595.8	3,595.8	12.9	5.5	-177.54	0.0	30.0	121.9	105.1	16.79	7.261	
3,700.0	3,695.3	3,695.3	3,695.3	13.2	5.7	-177.72	0.0	30.0	131.5	114.3	17.17	7.655	
3,800.0	3,794.9	3,794.9	3,794.9	13.6	5.8	-177.88	0.0	30.0	141.1	123.5	17.56	8.031	
3,900.0	3,894.4	3,894.4	3,894.4	13.9	5.9	-178.01	0.0	30.0	150.6	132.7	17.95	8.390	
4,000.0	3,993.9	3,993.9	3,993.9	14.3	6.0	-178.13	0.0	30.0	160.2	141.9	18.35	8.732	
4,100.0	4,093.5	4,093.5	4,093.5	14.6	6.1	-178.23	0.0	30.0	169.8	151.0	18.74	9.060	
4,200.0	4,193.0	4,193.0	4,193.0	15.0	6.2	-178.33	0.0	30.0	179.4	160.2	19.14	9.373	
4,300.0	4,292.6	4,292.6	4,292.6	15.3	6.3	-178.41	0.0	30.0	188.9	169.4	19.53	9.673	
4,400.0	4,392.1	4,392.1	4,392.1	15.7	6.4	-178.49	0.0	30.0	198.5	178.6	19.93	9.960	
4,500.0	4,491.6	4,491.6	4,491.6	16.0	6.6	-178.56	0.0	30.0	208.1	187.8	20.33	10.235	
4,600.0	4,591.2	4,591.2	4,591.2	16.4	6.7	-178.62	0.0	30.0	217.7	197.0	20.73	10.500	
4,700.0	4,690.7	4,690.7	4,690.7	16.7	6.8	-178.68	0.0	30.0	227.3	206.1	21.14	10.753	
4,800.0	4,790.3	4,790.3	4,790.3	17.1	6.9	-178.73	0.0	30.0	236.9	215.3	21.54	10.996	
4,900.0	4,889.8	4,889.8	4,889.8	17.4	7.0	-178.78	0.0	30.0	246.4	224.5	21.94	11.230	
5,000.0	4,989.3	4,989.3	4,989.3	17.8	7.2	-178.83	0.0	30.0	256.0	233.7	22.35	11.455	

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

Concho Resources LLC

Anticollision Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Reference Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	KRAKEN ST COM #703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	3.0 usft
Survey Program: 0-Standard Keeper 104, 9068-MWD+IFR1+FDIR												Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,088.9	5,088.9	5,088.9	18.1	7.3	-178.87	0.0	30.0	265.6	242.8	22.76	11.672	
5,200.0	5,188.4	5,188.4	5,188.4	18.5	7.4	-178.91	0.0	30.0	275.2	252.0	23.16	11.880	
5,300.0	5,288.0	5,288.0	5,288.0	18.8	7.5	-178.95	0.0	30.0	284.8	261.2	23.57	12.081	
5,400.0	5,387.5	5,387.5	5,387.5	19.2	7.6	-178.98	0.0	30.0	294.4	270.4	23.98	12.274	
5,500.0	5,487.0	5,487.0	5,487.0	19.6	7.8	-179.01	0.0	30.0	303.9	279.5	24.39	12.461	
5,600.0	5,586.6	5,590.9	5,590.9	19.9	7.8	-178.81	-1.4	29.6	312.9	288.1	24.80	12.615	
5,700.0	5,686.1	5,695.6	5,695.4	20.3	7.8	-178.00	-6.4	28.0	320.3	295.1	25.20	12.710	
5,800.0	5,785.7	5,799.3	5,798.7	20.6	7.7	-176.65	-14.9	25.4	326.4	300.8	25.60	12.750	
5,900.0	5,885.2	5,898.8	5,897.7	21.0	7.7	-175.19	-24.3	22.5	332.0	306.0	25.99	12.776	
6,000.0	5,984.7	5,998.2	5,996.7	21.3	7.6	-173.78	-33.7	19.6	337.9	311.5	26.39	12.805	
6,100.0	6,084.3	6,097.7	6,095.7	21.7	7.6	-172.42	-43.1	16.7	344.0	317.2	26.80	12.837	
6,200.0	6,183.8	6,197.2	6,194.7	22.1	7.6	-171.10	-52.5	13.8	350.3	323.1	27.21	12.872	
6,300.0	6,283.3	6,296.7	6,293.7	22.4	7.5	-169.84	-61.9	10.9	356.7	329.1	27.63	12.909	
6,400.0	6,382.9	6,396.2	6,392.7	22.8	7.5	-168.61	-71.3	8.0	363.4	335.3	28.06	12.950	
6,500.0	6,482.4	6,495.7	6,491.7	23.1	7.5	-167.44	-80.7	5.1	370.1	341.6	28.49	12.992	
6,600.0	6,582.0	6,595.2	6,590.7	23.5	7.5	-166.30	-90.1	2.2	377.1	348.1	28.92	13.038	
6,700.0	6,681.5	6,694.6	6,689.7	23.9	7.4	-165.21	-99.5	-0.7	384.1	354.8	29.36	13.086	
6,800.0	6,781.0	6,794.1	6,788.7	24.2	7.4	-164.15	-108.9	-3.6	391.3	361.5	29.79	13.136	
6,900.0	6,880.6	6,893.6	6,887.7	24.6	7.4	-163.14	-118.3	-6.6	398.7	368.4	30.23	13.188	
7,000.0	6,980.1	6,993.1	6,986.7	24.9	7.4	-162.16	-127.7	-9.5	406.1	375.5	30.67	13.242	
7,100.0	7,079.7	7,092.6	7,085.7	25.3	7.4	-161.22	-137.1	-12.4	413.7	382.6	31.11	13.297	
7,200.0	7,179.2	7,192.1	7,184.7	25.6	7.4	-160.31	-146.4	-15.3	421.4	389.8	31.55	13.355	
7,300.0	7,278.7	7,291.5	7,283.7	26.0	7.4	-159.43	-155.8	-18.2	429.2	397.2	31.99	13.413	
7,400.0	7,378.3	7,391.0	7,382.7	26.4	7.4	-158.58	-165.2	-21.1	437.0	404.6	32.44	13.473	
7,500.0	7,477.8	7,490.5	7,481.7	26.7	7.4	-157.77	-174.6	-24.0	445.0	412.1	32.88	13.534	
7,600.0	7,577.4	7,590.0	7,580.7	27.1	7.4	-156.98	-184.0	-26.9	453.1	419.7	33.32	13.596	
7,700.0	7,676.9	7,689.5	7,679.7	27.5	7.4	-156.22	-193.4	-29.8	461.2	427.4	33.77	13.659	
7,800.0	7,776.4	7,789.0	7,778.7	27.8	7.4	-155.49	-202.8	-32.7	469.4	435.2	34.21	13.722	
7,900.0	7,876.0	7,888.5	7,877.7	28.2	7.4	-154.78	-212.2	-35.6	477.7	443.1	34.65	13.786	
8,000.0	7,975.5	7,987.9	7,976.7	28.5	7.4	-154.10	-221.6	-38.5	486.1	451.0	35.09	13.850	
8,100.0	8,075.1	8,087.4	8,075.7	28.9	7.4	-153.44	-231.0	-41.4	494.5	459.0	35.54	13.915	
8,200.0	8,174.6	8,186.9	8,174.7	29.3	7.4	-152.80	-240.4	-44.3	503.0	467.0	35.98	13.979	
8,300.0	8,274.1	8,286.4	8,273.7	29.6	7.4	-152.18	-249.8	-47.2	511.5	475.1	36.42	14.044	
8,400.0	8,373.7	8,385.9	8,372.7	30.0	7.5	-151.59	-259.2	-50.1	520.1	483.3	36.87	14.109	
8,500.0	8,473.2	8,485.4	8,471.7	30.3	7.5	-151.01	-268.6	-53.0	528.8	491.5	37.31	14.173	
8,600.0	8,572.8	8,584.8	8,570.7	30.7	7.5	-150.45	-278.0	-55.9	537.5	499.8	37.75	14.238	
8,700.0	8,672.3	8,684.3	8,669.7	31.1	7.5	-149.91	-287.4	-58.8	546.3	508.1	38.20	14.302	
8,800.0	8,771.8	8,783.8	8,768.6	31.4	7.6	-149.38	-296.8	-61.7	555.1	516.4	38.64	14.365	
8,900.0	8,871.4	8,883.3	8,867.6	31.8	7.6	-148.88	-306.2	-64.6	563.9	524.8	39.08	14.429	
9,000.0	8,970.9	8,982.8	8,966.6	32.2	7.7	-148.38	-315.6	-67.5	572.8	533.3	39.53	14.492	
9,041.7	9,012.4	9,024.2	9,007.9	32.3	7.7	-148.18	-319.5	-68.7	576.5	536.8	39.70	14.521	
9,050.0	9,020.7	9,032.5	9,016.1	32.3	7.7	-140.09	-320.3	-69.0	577.3	537.6	39.74	14.528	
9,075.0	9,045.5	9,057.4	9,040.9	32.4	7.7	-123.88	-322.7	-69.7	579.5	539.7	39.84	14.547	
9,100.0	9,070.1	9,079.0	9,062.3	32.5	7.8	-114.94	-324.8	-70.3	581.8	541.9	39.92	14.573	
9,125.0	9,094.6	9,100.0	9,083.2	32.6	7.8	-109.47	-327.7	-71.1	584.3	544.3	40.00	14.606	
9,150.0	9,118.7	9,116.6	9,099.5	32.7	7.8	-105.78	-330.6	-71.7	587.0	547.0	40.07	14.650	
9,175.0	9,142.5	9,135.5	9,117.9	32.8	7.8	-103.15	-334.7	-72.5	590.0	549.9	40.15	14.697	
9,200.0	9,165.8	9,154.3	9,136.1	32.9	7.8	-101.15	-339.4	-73.4	593.2	553.0	40.22	14.749	
9,225.0	9,188.7	9,175.0	9,155.9	33.0	7.8	-99.60	-345.4	-74.4	596.7	556.4	40.30	14.805	
9,250.0	9,211.0	9,192.0	9,171.9	33.1	7.8	-98.30	-351.0	-75.4	600.3	560.0	40.38	14.869	
9,275.0	9,232.7	9,210.8	9,189.4	33.1	7.8	-97.23	-357.8	-76.5	604.2	563.7	40.45	14.935	
9,300.0	9,253.7	9,229.7	9,206.7	33.2	7.9	-96.32	-365.3	-77.7	608.3	567.7	40.53	15.007	

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

Concho Resources LLC

Anticollision Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Reference Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	KRAKEN ST COM #703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	3.0 usft
Survey Program: 0-Standard Keeper 104, 9068-MWD+IFR1+FDIR												Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
9,325.0	9,274.0	9,250.0	9,224.9	33.3	7.9	-95.55	-374.2	-79.0	612.6	571.9	40.62	15.081	
9,350.0	9,293.5	9,267.5	9,240.3	33.4	7.9	-94.82	-382.4	-80.2	617.0	576.3	40.70	15.162	
9,375.0	9,312.2	9,286.5	9,256.6	33.5	7.9	-94.20	-392.0	-81.6	621.7	580.9	40.78	15.246	
9,400.0	9,330.0	9,305.5	9,272.6	33.6	7.9	-93.63	-402.2	-83.1	626.5	585.7	40.86	15.333	
9,425.0	9,346.9	9,325.0	9,288.5	33.6	8.0	-93.12	-413.3	-84.7	631.5	590.6	40.95	15.424	
9,450.0	9,362.7	9,343.7	9,303.3	33.7	8.0	-92.64	-424.6	-86.2	636.7	595.7	41.03	15.518	
9,475.0	9,377.6	9,362.9	9,318.1	33.8	8.0	-92.20	-436.7	-87.9	642.0	600.9	41.11	15.615	
9,500.0	9,391.4	9,382.1	9,332.4	33.9	8.1	-91.79	-449.5	-89.6	647.4	606.2	41.20	15.714	
9,525.0	9,404.0	9,400.0	9,345.2	33.9	8.1	-91.38	-461.9	-91.3	653.0	611.8	41.28	15.819	
9,550.0	9,415.6	9,421.0	9,359.6	34.0	8.1	-91.06	-477.0	-93.3	658.8	617.4	41.38	15.921	
9,575.0	9,425.9	9,440.6	9,372.5	34.1	8.2	-90.74	-491.7	-95.2	664.6	623.1	41.47	16.027	
9,600.0	9,435.1	9,460.4	9,384.8	34.1	8.2	-90.43	-507.0	-97.2	670.5	629.0	41.56	16.134	
9,625.0	9,443.0	9,480.3	9,396.5	34.2	8.2	-90.15	-523.0	-99.3	676.5	634.9	41.65	16.243	
9,650.0	9,449.7	9,500.0	9,407.5	34.2	8.3	-89.88	-539.2	-101.3	682.7	640.9	41.74	16.354	
9,675.0	9,455.2	9,520.6	9,418.3	34.3	8.3	-89.64	-556.7	-103.5	688.9	647.0	41.84	16.463	
9,700.0	9,459.3	9,541.1	9,428.2	34.4	8.4	-89.43	-574.5	-105.8	695.1	653.2	41.94	16.573	
9,725.0	9,462.2	9,561.8	9,437.4	34.4	8.4	-89.23	-592.9	-108.0	701.4	659.4	42.04	16.683	
9,750.0	9,463.7	9,582.8	9,445.9	34.5	8.4	-89.05	-611.9	-110.4	707.8	665.6	42.15	16.792	
9,768.6	9,464.0	9,598.5	9,451.7	34.5	8.5	-88.94	-626.4	-112.2	712.5	670.3	42.23	16.873	
9,800.0	9,463.9	9,625.9	9,460.7	34.6	8.5	-89.70	-652.1	-115.3	720.5	678.1	42.37	17.003	
9,900.0	9,463.7	9,719.7	9,480.0	34.8	8.7	-91.26	-743.0	-126.1	744.3	701.4	42.90	17.350	
10,000.0	9,463.4	9,800.0	9,482.9	35.0	8.9	-91.46	-822.7	-135.1	765.4	722.0	43.37	17.646	
10,100.0	9,463.1	9,885.5	9,482.8	35.2	9.3	-91.43	-907.9	-142.8	785.1	741.2	43.94	17.868	
10,200.0	9,462.9	9,962.4	9,482.7	35.4	9.6	-91.41	-984.6	-147.5	804.2	759.7	44.49	18.077	
10,300.0	9,462.6	10,038.9	9,482.6	35.7	10.1	-91.39	-1,061.1	-150.2	822.4	777.3	45.06	18.251	
10,400.0	9,462.3	10,115.3	9,482.5	36.0	10.5	-91.37	-1,137.5	-150.8	839.8	794.2	45.66	18.394	
10,500.0	9,462.1	10,202.5	9,482.4	36.2	11.0	-91.35	-1,224.7	-149.4	856.1	809.7	46.39	18.455	
10,600.0	9,461.8	10,301.6	9,482.3	36.5	11.6	-91.34	-1,323.8	-147.5	869.3	822.0	47.28	18.384	
10,700.0	9,461.6	10,401.1	9,482.2	36.8	12.3	-91.34	-1,423.3	-145.7	879.0	830.8	48.23	18.226	
10,800.0	9,461.3	10,500.9	9,482.0	37.1	13.0	-91.34	-1,523.1	-143.8	885.2	836.0	49.21	17.988	
10,900.0	9,461.0	10,600.9	9,481.9	37.4	13.7	-91.35	-1,623.0	-141.9	888.0	837.7	50.23	17.677	
10,928.5	9,460.9	10,629.4	9,481.9	37.5	13.9	-91.35	-1,651.5	-141.4	888.1	837.6	50.53	17.576	
11,000.0	9,460.8	10,700.9	9,481.8	37.8	14.4	-91.36	-1,723.0	-140.0	888.1	836.8	51.28	17.318	
11,100.0	9,460.5	10,800.9	9,481.7	38.1	15.1	-91.37	-1,823.0	-138.1	888.1	835.8	52.37	16.959	
11,200.0	9,460.2	10,900.9	9,481.6	38.5	15.9	-91.38	-1,923.0	-136.2	888.1	834.7	53.48	16.606	
11,300.0	9,460.0	11,000.9	9,481.5	38.8	16.7	-91.39	-2,022.9	-134.4	888.1	833.5	54.62	16.260	
11,400.0	9,459.7	11,100.9	9,481.4	39.2	17.4	-91.40	-2,122.9	-132.5	888.1	832.4	55.79	15.921	
11,500.0	9,459.5	11,200.9	9,481.2	39.6	18.2	-91.41	-2,222.9	-130.6	888.2	831.2	56.97	15.589	
11,600.0	9,459.2	11,300.9	9,481.1	40.0	19.0	-91.41	-2,322.9	-128.7	888.2	830.0	58.18	15.265	
11,700.0	9,458.9	11,400.9	9,481.0	40.4	19.8	-91.42	-2,422.9	-126.8	888.2	828.8	59.41	14.949	
11,800.0	9,458.7	11,500.9	9,480.9	40.9	20.6	-91.43	-2,522.9	-124.9	888.2	827.5	60.66	14.641	
11,900.0	9,458.4	11,600.9	9,480.8	41.3	21.4	-91.44	-2,622.8	-123.0	888.2	826.3	61.93	14.342	
12,000.0	9,458.2	11,700.9	9,480.7	41.8	22.2	-91.45	-2,722.8	-121.2	888.2	825.0	63.21	14.051	
12,100.0	9,457.9	11,800.9	9,480.5	42.3	23.0	-91.46	-2,822.8	-119.3	888.2	823.7	64.51	13.768	
12,200.0	9,457.6	11,900.9	9,480.4	42.7	23.8	-91.47	-2,922.8	-117.4	888.2	822.4	65.83	13.492	
12,300.0	9,457.4	12,000.9	9,480.3	43.2	24.7	-91.48	-3,022.8	-115.5	888.2	821.0	67.16	13.225	
12,400.0	9,457.1	12,100.9	9,480.2	43.8	25.5	-91.49	-3,122.7	-113.6	888.2	819.7	68.50	12.966	
12,500.0	9,456.8	12,200.9	9,480.1	44.3	26.3	-91.50	-3,222.7	-111.7	888.2	818.4	69.86	12.714	
12,600.0	9,456.6	12,300.9	9,480.0	44.8	27.1	-91.51	-3,322.7	-109.8	888.2	817.0	71.23	12.469	
12,700.0	9,456.3	12,400.9	9,479.9	45.4	28.0	-91.52	-3,422.7	-107.9	888.2	815.6	72.62	12.232	
12,800.0	9,456.1	12,500.9	9,479.7	45.9	28.8	-91.53	-3,522.7	-106.1	888.2	814.2	74.01	12.002	
12,900.0	9,455.8	12,600.9	9,479.6	46.5	29.6	-91.54	-3,622.7	-104.2	888.3	812.8	75.42	11.778	

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

Concho Resources LLC

Anticollision Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Reference Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	KRAKEN ST COM #703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	3.0 usft
Survey Program: 0-Standard Keeper 104, 9068-MWD+IFR1+FDIR												Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toelface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
13,000.0	9,455.5	12,700.9	9,479.5	47.0	30.5	-91.55	-3,722.6	-102.3	888.3	811.4	76.83	11.561	
13,100.0	9,455.3	12,800.9	9,479.4	47.6	31.3	-91.56	-3,822.6	-100.4	888.3	810.0	78.26	11.351	
13,200.0	9,455.0	12,900.9	9,479.3	48.2	32.1	-91.57	-3,922.6	-98.5	888.3	808.6	79.69	11.146	
13,300.0	9,454.8	13,000.9	9,479.2	48.8	33.0	-91.57	-4,022.6	-96.6	888.3	807.1	81.14	10.948	
13,400.0	9,454.5	13,100.9	9,479.0	49.4	33.8	-91.58	-4,122.6	-94.7	888.3	805.7	82.59	10.755	
13,500.0	9,454.2	13,200.9	9,478.9	50.0	34.6	-91.59	-4,222.5	-92.9	888.3	804.2	84.05	10.568	
13,600.0	9,454.0	13,300.9	9,478.8	50.6	35.5	-91.60	-4,322.5	-91.0	888.3	802.8	85.53	10.386	
13,700.0	9,453.7	13,400.9	9,478.7	51.3	36.3	-91.61	-4,422.5	-89.1	888.3	801.3	87.00	10.210	
13,800.0	9,453.5	13,500.9	9,478.6	51.9	37.2	-91.62	-4,522.5	-87.2	888.3	799.8	88.49	10.039	
13,900.0	9,453.2	13,600.9	9,478.5	52.5	38.0	-91.63	-4,622.5	-85.3	888.3	798.3	89.98	9.872	
14,000.0	9,452.9	13,700.9	9,478.4	53.2	38.9	-91.64	-4,722.5	-83.4	888.3	796.8	91.48	9.710	
14,100.0	9,452.7	13,800.9	9,478.2	53.8	39.7	-91.65	-4,822.4	-81.5	888.3	795.4	92.99	9.553	
14,200.0	9,452.4	13,900.9	9,478.1	54.5	40.6	-91.66	-4,922.4	-79.7	888.3	793.8	94.50	9.400	
14,300.0	9,452.1	14,000.9	9,478.0	55.1	41.4	-91.67	-5,022.4	-77.8	888.4	792.3	96.02	9.252	
14,400.0	9,451.9	14,100.9	9,477.9	55.8	42.3	-91.68	-5,122.4	-75.9	888.4	790.8	97.54	9.107	
14,500.0	9,451.6	14,200.9	9,477.8	56.5	43.1	-91.69	-5,222.4	-74.0	888.4	789.3	99.08	8.967	
14,600.0	9,451.4	14,300.9	9,477.7	57.2	44.0	-91.70	-5,322.3	-72.1	888.4	787.8	100.61	8.830	
14,700.0	9,451.1	14,400.9	9,477.6	57.8	44.8	-91.71	-5,422.3	-70.2	888.4	786.2	102.15	8.697	
14,800.0	9,450.8	14,500.9	9,477.4	58.5	45.7	-91.72	-5,522.3	-68.3	888.4	784.7	103.70	8.567	
14,900.0	9,450.6	14,600.9	9,477.3	59.2	46.5	-91.72	-5,622.3	-66.5	888.4	783.1	105.25	8.441	
15,000.0	9,450.3	14,700.9	9,477.2	59.9	47.4	-91.73	-5,722.3	-64.6	888.4	781.6	106.80	8.318	
15,100.0	9,450.1	14,800.9	9,477.1	60.6	48.2	-91.74	-5,822.3	-62.7	888.4	780.0	108.37	8.198	
15,159.8	9,449.9	14,860.7	9,477.0	61.0	48.7	-91.75	-5,882.0	-61.6	888.4	779.1	109.30	8.128	
15,200.0	9,449.8	14,910.4	9,477.0	61.3	49.1	-91.75	-5,931.8	-60.8	888.6	778.5	110.08	8.072	
15,265.4	9,449.6	14,983.1	9,476.9	61.8	49.8	-91.75	-6,004.5	-60.7	889.1	777.9	111.22	7.994	
15,300.0	9,449.5	15,017.7	9,476.8	62.0	50.0	-91.76	-6,039.0	-60.7	889.7	777.9	111.76	7.961	
15,400.0	9,449.3	15,117.7	9,476.7	62.7	50.9	-91.76	-6,139.0	-60.7	891.5	778.2	113.33	7.866	
15,500.0	9,449.0	15,217.7	9,476.6	63.5	51.7	-91.77	-6,239.0	-60.7	893.3	778.4	114.91	7.774	
15,600.0	9,448.8	15,317.6	9,476.4	64.2	52.6	-91.77	-6,339.0	-60.7	895.1	778.6	116.48	7.684	
15,700.0	9,448.5	15,417.6	9,476.3	64.9	53.5	-91.78	-6,439.0	-60.7	896.9	778.8	118.07	7.597	
15,800.0	9,448.2	15,517.6	9,476.2	65.6	54.3	-91.78	-6,539.0	-60.7	898.7	779.1	119.65	7.511	
15,900.0	9,448.0	15,617.6	9,476.1	66.4	55.2	-91.78	-6,638.9	-60.7	900.5	779.3	121.24	7.428	
16,000.0	9,447.7	15,717.6	9,475.9	67.1	56.0	-91.79	-6,738.9	-60.7	902.3	779.5	122.83	7.346	
16,100.0	9,447.4	15,817.6	9,475.8	67.8	56.9	-91.79	-6,838.9	-60.7	904.1	779.7	124.42	7.267	
16,200.0	9,447.2	15,917.6	9,475.7	68.6	57.7	-91.80	-6,938.9	-60.7	905.9	779.9	126.02	7.189	
16,300.0	9,446.9	16,017.5	9,475.5	69.3	58.6	-91.80	-7,038.9	-60.8	907.7	780.1	127.62	7.113	
16,400.0	9,446.7	16,117.5	9,475.4	70.1	59.4	-91.81	-7,138.9	-60.8	909.5	780.3	129.22	7.039	
16,500.0	9,446.4	16,217.5	9,475.3	70.8	60.3	-91.81	-7,238.9	-60.8	911.3	780.5	130.83	6.966	
16,600.0	9,446.1	16,317.5	9,475.2	71.6	61.1	-91.82	-7,338.8	-60.8	913.1	780.7	132.43	6.895	
16,700.0	9,445.9	16,417.5	9,475.0	72.3	62.0	-91.82	-7,438.8	-60.8	914.9	780.9	134.04	6.826	
16,800.0	9,445.6	16,517.5	9,474.9	73.1	62.8	-91.83	-7,538.8	-60.8	916.7	781.1	135.66	6.758	
16,900.0	9,445.4	16,617.4	9,474.8	73.8	63.7	-91.83	-7,638.8	-60.8	918.5	781.3	137.27	6.691	
17,000.0	9,445.1	16,717.4	9,474.6	74.6	64.5	-91.84	-7,738.8	-60.8	920.3	781.4	138.89	6.626	
17,100.0	9,444.8	16,817.4	9,474.5	75.4	65.4	-91.84	-7,838.8	-60.8	922.1	781.6	140.51	6.563	
17,200.0	9,444.6	16,917.4	9,474.4	76.1	66.2	-91.85	-7,938.7	-60.8	923.9	781.8	142.13	6.501	
17,300.0	9,444.3	17,017.4	9,474.3	76.9	67.1	-91.85	-8,038.7	-60.8	925.7	782.0	143.75	6.440	
17,400.0	9,444.1	17,117.4	9,474.1	77.7	68.0	-91.86	-8,138.7	-60.8	927.5	782.1	145.38	6.380	
17,500.0	9,443.8	17,217.3	9,474.0	78.4	68.8	-91.86	-8,238.7	-60.8	929.3	782.3	147.01	6.322	
17,600.0	9,443.5	17,317.3	9,473.9	79.2	69.7	-91.86	-8,338.7	-60.8	931.1	782.5	148.64	6.265	
17,700.0	9,443.3	17,417.3	9,473.7	80.0	70.5	-91.87	-8,438.7	-60.8	932.9	782.7	150.27	6.209	
17,800.0	9,443.0	17,517.3	9,473.6	80.7	71.4	-91.87	-8,538.6	-60.8	934.7	782.8	151.90	6.154	
17,900.0	9,442.8	17,617.3	9,473.5	81.5	72.2	-91.88	-8,638.6	-60.9	936.5	783.0	153.53	6.100	

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

Concho Resources LLC

Anticollision Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Reference Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	KRAKEN ST COM #703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	3.0 usft
Survey Program: 0-Standard Keeper 104, 9068-MWD+IFR1+FDIR												Offset Well Error:	3.0 usft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
18,000.0	9,442.5	17,717.3	9,473.4	82.3	73.1	-91.88	-8,738.6	-60.9	938.3	783.2	155.17	6.047	
18,100.0	9,442.2	17,817.2	9,473.2	83.1	73.9	-91.89	-8,838.6	-60.9	940.1	783.3	156.81	5.995	
18,200.0	9,442.0	17,917.2	9,473.1	83.9	74.8	-91.89	-8,938.6	-60.9	941.9	783.5	158.45	5.945	
18,300.0	9,441.7	18,017.2	9,473.0	84.6	75.7	-91.90	-9,038.6	-60.9	943.7	783.6	160.09	5.895	
18,400.0	9,441.5	18,117.2	9,472.8	85.4	76.5	-91.90	-9,138.5	-60.9	945.5	783.8	161.73	5.846	
18,500.0	9,441.2	18,217.2	9,472.7	86.2	77.4	-91.90	-9,238.5	-60.9	947.3	784.0	163.38	5.798	
18,600.0	9,440.9	18,317.2	9,472.6	87.0	78.2	-91.91	-9,338.5	-60.9	949.1	784.1	165.02	5.752	
18,700.0	9,440.7	18,417.1	9,472.5	87.8	79.1	-91.91	-9,438.5	-60.9	950.9	784.3	166.67	5.706	
18,800.0	9,440.4	18,517.1	9,472.3	88.6	79.9	-91.92	-9,538.5	-60.9	952.7	784.4	168.32	5.660	
18,900.0	9,440.2	18,617.1	9,472.2	89.4	80.8	-91.92	-9,638.5	-60.9	954.5	784.6	169.97	5.616	
19,000.0	9,439.9	18,717.1	9,472.1	90.2	81.6	-91.93	-9,738.4	-60.9	956.3	784.7	171.62	5.573	
19,100.0	9,439.6	18,817.1	9,471.9	91.0	82.5	-91.93	-9,838.4	-60.9	958.1	784.9	173.27	5.530	
19,200.0	9,439.4	18,917.1	9,471.8	91.8	83.4	-91.93	-9,938.4	-60.9	959.9	785.0	174.92	5.488	
19,300.0	9,439.1	19,017.0	9,471.7	92.6	84.2	-91.94	-10,038.4	-60.9	961.7	785.2	176.58	5.447	
19,400.0	9,438.8	19,117.0	9,471.6	93.4	85.1	-91.94	-10,138.4	-61.0	963.5	785.3	178.23	5.406	
19,500.0	9,438.6	19,217.0	9,471.4	94.1	85.9	-91.95	-10,238.4	-61.0	965.3	785.5	179.89	5.366	
19,600.0	9,438.3	19,317.0	9,471.3	94.9	86.8	-91.95	-10,338.3	-61.0	967.1	785.6	181.55	5.327	
19,700.0	9,438.1	19,417.0	9,471.2	95.7	87.6	-91.96	-10,438.3	-61.0	968.9	785.7	183.21	5.289	
19,800.0	9,437.8	19,517.0	9,471.1	96.5	88.5	-91.96	-10,538.3	-61.0	970.8	785.9	184.87	5.251	
19,900.0	9,437.5	19,617.0	9,470.9	97.4	89.4	-91.96	-10,638.3	-61.0	972.6	786.0	186.53	5.214	
20,000.0	9,437.3	19,716.9	9,470.8	98.2	90.2	-91.97	-10,738.3	-61.0	974.4	786.2	188.19	5.178	
20,100.0	9,437.0	19,816.9	9,470.7	99.0	91.1	-91.97	-10,838.3	-61.0	976.2	786.3	189.85	5.142	
20,200.0	9,436.8	19,916.9	9,470.5	99.8	91.9	-91.98	-10,938.2	-61.0	978.0	786.4	191.52	5.106	
20,300.0	9,436.5	20,016.9	9,470.4	100.6	92.8	-91.98	-11,038.2	-61.0	979.8	786.6	193.18	5.072	
20,400.0	9,436.2	20,116.9	9,470.3	101.4	93.6	-91.98	-11,138.2	-61.0	981.6	786.7	194.85	5.038	
20,500.0	9,436.0	20,212.2	9,470.2	102.2	94.5	-91.99	-11,238.5	-60.9	983.5	787.1	196.43	5.007	
20,600.0	9,435.7	20,312.1	9,470.0	103.0	95.3	-91.99	-11,333.5	-60.4	985.8	787.7	198.10	4.976	
20,700.0	9,435.5	20,412.1	9,469.9	103.8	96.2	-92.00	-11,433.4	-60.0	988.0	788.3	199.77	4.946	
20,800.0	9,435.2	20,512.1	9,469.8	104.6	97.0	-92.00	-11,533.4	-59.5	990.3	788.9	201.44	4.916	
20,900.0	9,434.9	20,612.1	9,469.7	105.4	97.9	-92.00	-11,633.4	-59.0	992.6	789.5	203.11	4.887	
21,000.0	9,434.7	20,712.0	9,469.6	106.2	98.7	-92.01	-11,733.4	-58.5	994.9	790.1	204.78	4.858	
21,100.0	9,434.4	20,812.0	9,469.4	107.0	99.6	-92.01	-11,833.3	-58.1	997.2	790.7	206.45	4.830	
21,200.0	9,434.2	20,912.0	9,469.3	107.9	100.5	-92.01	-11,933.3	-57.6	999.4	791.3	208.12	4.802	

Concho Resources LLC

Anticollision Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Reference Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	KRAKEN ST COM #703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design MYOX 28 STATE PROJECT (ATLAS 2528) - MYOX 28 ST COM #702H - OWB - AWP												Offset Site Error:	0.0 usft
Survey Program: 100-Standard Keeper 104, 8755-MWD+IFR1+FDIR												Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,600.0	8,572.8	19,175.3	9,479.0	30.9	85.7	-177.59	-63.2	-265.6	951.6	854.6	96.98	9.812	
8,700.0	8,672.3	19,179.0	9,479.1	31.2	85.7	-177.05	-66.9	-265.5	861.0	762.9	98.16	8.771	
8,800.0	8,771.8	19,182.9	9,479.3	31.6	85.8	-176.46	-70.8	-265.5	772.8	673.2	99.64	7.756	
8,900.0	8,871.4	19,187.1	9,479.4	31.9	85.8	-175.84	-75.0	-265.4	687.8	586.3	101.51	6.775	
9,000.0	8,970.9	19,191.6	9,479.6	32.3	85.9	-175.17	-79.5	-265.3	607.3	503.4	103.91	5.844	
9,041.7	9,012.4	19,193.5	9,479.7	32.4	85.9	-174.88	-81.5	-265.3	575.5	470.4	105.10	5.476	
9,050.0	9,020.7	19,194.0	9,479.7	32.5	85.9	-167.82	-81.9	-265.3	569.4	464.0	105.35	5.405	
9,075.0	9,045.5	19,196.0	9,479.8	32.6	85.9	-154.28	-84.0	-265.3	551.5	445.3	106.15	5.195	
9,100.0	9,070.1	19,199.1	9,480.0	32.7	85.9	-147.44	-87.0	-265.2	534.6	427.6	107.02	4.996	
9,125.0	9,094.6	19,209.0	9,480.4	32.7	86.0	-142.85	-96.9	-265.1	519.0	411.0	108.02	4.805	
9,150.0	9,118.7	19,209.0	9,480.4	32.8	86.0	-141.13	-96.9	-265.1	504.6	395.7	108.92	4.632	
9,175.0	9,142.5	19,215.7	9,480.8	32.9	86.1	-139.35	-103.6	-265.0	491.6	381.7	109.95	4.471	
9,200.0	9,165.8	19,224.2	9,481.2	33.0	86.1	-137.77	-112.1	-264.9	480.1	369.1	111.01	4.325	
9,225.0	9,188.7	19,233.9	9,481.7	33.1	86.2	-136.30	-121.7	-264.7	470.2	358.1	112.09	4.195	
9,250.0	9,211.0	19,244.6	9,482.3	33.2	86.3	-134.84	-132.5	-264.6	462.0	348.8	113.16	4.082	
9,275.0	9,232.7	19,256.5	9,482.9	33.3	86.4	-133.31	-144.4	-264.4	455.4	341.2	114.22	3.987	
9,300.0	9,253.7	19,269.4	9,483.5	33.4	86.5	-131.68	-157.3	-264.3	450.5	335.2	115.24	3.909	
9,325.0	9,274.0	19,283.4	9,484.3	33.4	86.6	-129.93	-171.2	-264.1	447.2	331.0	116.20	3.849	
9,350.0	9,293.5	19,298.3	9,485.1	33.5	86.8	-128.06	-186.1	-264.0	445.6	328.5	117.10	3.805	
9,364.4	9,304.4	19,308.3	9,485.6	33.6	86.9	-126.83	-196.1	-263.9	445.3	327.7	117.60	3.787 CC	
9,375.0	9,312.2	19,315.9	9,486.0	33.6	86.9	-125.89	-203.7	-263.8	445.5	327.5	117.95	3.777 ES	
9,400.0	9,330.0	19,334.5	9,486.7	33.7	87.1	-123.59	-222.3	-263.6	446.7	328.0	118.73	3.763	
9,425.0	9,346.9	19,353.7	9,487.3	33.8	87.3	-121.21	-241.4	-263.5	449.3	329.9	119.42	3.762 SF	
9,450.0	9,362.7	19,373.3	9,487.6	33.8	87.4	-118.77	-261.0	-263.4	453.0	333.0	120.04	3.774	
9,475.0	9,377.6	19,393.4	9,487.7	33.9	87.6	-116.27	-281.2	-263.3	457.8	337.2	120.58	3.797	
9,500.0	9,391.4	19,413.2	9,487.6	34.0	87.8	-113.80	-300.9	-263.2	463.5	342.5	121.05	3.829	
9,525.0	9,404.0	19,433.5	9,487.5	34.1	87.9	-111.33	-321.2	-263.1	470.1	348.6	121.46	3.870	
9,550.0	9,415.6	19,453.8	9,487.3	34.1	88.1	-108.90	-341.5	-263.1	477.4	355.6	121.82	3.919	
9,575.0	9,425.9	19,474.4	9,487.1	34.2	88.3	-106.53	-362.1	-263.1	485.3	363.1	122.14	3.973	
9,600.0	9,435.1	19,495.5	9,486.9	34.3	88.5	-104.22	-383.3	-263.1	493.7	371.2	122.43	4.032	
9,625.0	9,443.0	19,507.0	9,486.8	34.3	88.6	-102.44	-394.7	-263.0	502.6	380.0	122.59	4.099	
9,650.0	9,449.7	19,507.0	9,486.8	34.4	88.6	-101.07	-394.7	-263.0	512.5	390.0	122.51	4.184	
9,675.0	9,455.2	19,507.0	9,486.8	34.4	88.6	-99.53	-394.7	-263.0	523.7	401.4	122.26	4.283	
9,700.0	9,459.3	19,507.0	9,486.8	34.5	88.6	-97.83	-394.7	-263.0	535.8	413.9	121.87	4.396	
9,725.0	9,462.2	19,507.0	9,486.8	34.5	88.6	-95.96	-394.7	-263.0	548.9	427.5	121.36	4.523	
9,750.0	9,463.7	19,507.0	9,486.8	34.6	88.6	-93.94	-394.7	-263.0	562.8	442.0	120.75	4.661	
9,768.6	9,464.0	19,507.0	9,486.8	34.6	88.6	-92.34	-394.7	-263.0	573.6	453.3	120.25	4.770	
9,800.0	9,463.9	19,507.0	9,486.8	34.7	88.6	-92.32	-394.7	-263.0	592.6	473.3	119.31	4.967	
9,900.0	9,463.7	19,507.0	9,486.8	34.9	88.6	-92.26	-394.7	-263.0	657.9	542.0	115.85	5.679	
10,000.0	9,463.4	19,507.0	9,486.8	35.1	88.6	-92.18	-394.7	-263.0	728.7	616.6	112.08	6.502	
10,100.0	9,463.1	19,507.0	9,486.8	35.3	88.6	-92.10	-394.7	-263.0	803.6	695.3	108.30	7.420	
10,200.0	9,462.9	19,507.0	9,486.8	35.6	88.6	-92.02	-394.7	-263.0	881.4	776.8	104.64	8.423	
10,300.0	9,462.6	19,507.0	9,486.8	35.8	88.6	-91.93	-394.7	-263.0	961.4	860.2	101.17	9.503	

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

Concho Resources LLC

Anticollision Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Reference Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	KRAKEN ST COM #703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design MYOX 28 STATE PROJECT (ATLAS 2528) - MYOX 28 ST COM #703H - OWB - AWP												Offset Site Error:	0.0 usft
Survey Program: 100-Standard Keeper 104, 8704-MWD+IFR1+FDIR												Offset Well Error:	3.0 usft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,600.0	8,572.8	19,320.0	9,333.6	30.9	87.6	4.07	-163.0	-1,124.2	945.3	841.7	103.57	9.127	
8,700.0	8,672.3	19,320.4	9,333.6	31.2	87.6	4.02	-163.3	-1,124.2	861.3	756.2	105.17	8.190	
8,800.0	8,771.8	19,320.7	9,333.6	31.6	87.6	3.98	-163.6	-1,124.2	781.2	674.1	107.06	7.296	
8,900.0	8,871.4	19,321.0	9,333.6	31.9	87.6	3.95	-163.9	-1,124.1	706.1	596.8	109.29	6.460	
9,000.0	8,970.9	19,321.3	9,333.6	32.3	87.6	3.92	-164.2	-1,124.1	637.8	526.0	111.86	5.702	
9,041.7	9,012.4	19,288.0	9,333.5	32.4	87.3	7.81	-131.0	-1,126.6	611.8	498.7	113.09	5.410	
9,050.0	9,020.7	19,288.2	9,333.5	32.5	87.3	16.44	-131.2	-1,126.5	606.9	493.5	113.33	5.355	
9,075.0	9,045.5	19,289.5	9,333.5	32.6	87.3	34.24	-132.6	-1,126.5	592.1	478.0	114.05	5.192	
9,100.0	9,070.1	19,324.3	9,333.6	32.7	87.6	40.82	-167.2	-1,123.8	577.6	462.9	114.65	5.038	
9,125.0	9,094.6	19,327.1	9,333.6	32.7	87.7	47.70	-170.0	-1,123.5	563.3	447.9	115.36	4.883	
9,150.0	9,118.7	19,330.9	9,333.5	32.8	87.7	52.61	-173.7	-1,123.1	549.3	433.2	116.06	4.733	
9,175.0	9,142.5	19,335.5	9,333.5	32.9	87.7	56.31	-178.4	-1,122.6	535.6	418.9	116.75	4.588	
9,200.0	9,165.8	19,341.1	9,333.4	33.0	87.8	59.21	-183.9	-1,122.0	522.4	405.0	117.42	4.449	
9,225.0	9,188.7	19,347.4	9,333.3	33.1	87.8	61.50	-190.2	-1,121.4	509.6	391.5	118.08	4.316	
9,250.0	9,211.0	19,354.6	9,333.2	33.2	87.9	63.34	-197.4	-1,120.8	497.3	378.6	118.70	4.189	
9,275.0	9,232.7	19,362.7	9,333.1	33.3	88.0	64.80	-205.4	-1,120.1	485.4	366.1	119.29	4.069	
9,300.0	9,253.7	19,371.4	9,332.9	33.4	88.0	65.93	-214.1	-1,119.3	474.1	354.2	119.85	3.956	
9,325.0	9,274.0	19,381.0	9,332.6	33.4	88.1	66.79	-223.6	-1,118.6	463.3	342.9	120.36	3.849	
9,350.0	9,293.5	19,391.2	9,332.2	33.5	88.2	67.41	-233.8	-1,117.8	453.0	332.2	120.83	3.749	
9,375.0	9,312.2	19,404.6	9,331.7	33.6	88.3	67.54	-247.2	-1,116.9	443.3	322.1	121.22	3.657	
9,400.0	9,330.0	19,438.8	9,330.7	33.7	88.6	65.29	-281.2	-1,113.7	433.6	312.4	121.26	3.576	
9,425.0	9,346.9	19,474.0	9,330.0	33.8	88.9	62.93	-316.1	-1,108.8	423.6	302.6	121.04	3.500	
9,450.0	9,362.7	19,509.7	9,329.9	33.8	89.2	60.52	-351.1	-1,102.1	413.2	292.6	120.54	3.428	
9,475.0	9,377.6	19,518.1	9,329.8	33.9	89.3	61.09	-359.4	-1,100.7	402.9	281.9	120.98	3.330	
9,500.0	9,391.4	19,534.9	9,329.8	34.0	89.4	60.72	-375.8	-1,097.4	392.7	271.6	121.08	3.243	
9,525.0	9,404.0	19,552.3	9,329.7	34.1	89.6	60.27	-392.9	-1,094.1	382.6	261.5	121.14	3.158	
9,550.0	9,415.6	19,564.0	9,329.7	34.1	89.7	60.40	-404.4	-1,091.9	372.6	251.2	121.39	3.069	
9,575.0	9,425.9	19,564.0	9,329.7	34.2	89.7	61.61	-404.4	-1,091.9	363.4	241.4	121.98	2.979	
9,600.0	9,435.1	19,564.0	9,329.7	34.3	89.7	62.68	-404.4	-1,091.9	355.1	232.8	122.33	2.903	
9,625.0	9,443.0	19,564.0	9,329.7	34.3	89.7	63.59	-404.4	-1,091.9	348.0	225.6	122.41	2.843	
9,650.0	9,449.7	19,564.0	9,329.7	34.4	89.7	64.34	-404.4	-1,091.9	342.1	220.0	122.17	2.800	
9,675.0	9,455.2	19,564.0	9,329.7	34.4	89.7	64.92	-404.4	-1,091.9	337.5	216.0	121.58	2.776	
9,700.0	9,459.3	19,564.0	9,329.7	34.5	89.7	65.33	-404.4	-1,091.9	334.3	213.7	120.60	2.772 SF	
9,725.0	9,462.2	19,564.0	9,329.7	34.5	89.7	65.57	-404.4	-1,091.9	332.5	213.2	119.21	2.789 ES	
9,744.7	9,463.5	19,564.0	9,329.7	34.6	89.7	65.63	-404.4	-1,091.9	332.0	214.2	117.85	2.817 CC	
9,750.0	9,463.7	19,564.0	9,329.7	34.6	89.7	65.63	-404.4	-1,091.9	332.0	214.6	117.43	2.827	
9,768.6	9,464.0	19,564.0	9,329.7	34.6	89.7	65.56	-404.4	-1,091.9	332.7	216.8	115.86	2.871	
9,800.0	9,463.9	19,564.0	9,329.7	34.7	89.7	65.53	-404.4	-1,091.9	336.0	223.3	112.76	2.980	
9,900.0	9,463.7	19,564.0	9,329.7	34.9	89.7	65.26	-404.4	-1,091.9	366.8	266.3	100.55	3.648	
10,000.0	9,463.4	19,564.0	9,329.7	35.1	89.7	64.68	-404.4	-1,091.9	422.3	333.8	88.42	4.775	
10,100.0	9,463.1	19,564.0	9,329.7	35.3	89.7	63.77	-404.4	-1,091.9	494.0	415.1	78.88	6.263	
10,200.0	9,462.9	19,564.0	9,329.7	35.6	89.7	62.46	-404.4	-1,091.9	576.0	503.8	72.16	7.982	
10,300.0	9,462.6	19,564.0	9,329.7	35.8	89.7	60.65	-404.4	-1,091.9	664.3	596.7	67.63	9.822	
10,400.0	9,462.3	19,564.0	9,329.7	36.1	89.7	58.18	-404.4	-1,091.9	756.7	692.1	64.64	11.706	
10,500.0	9,462.1	19,564.0	9,329.7	36.4	89.7	54.80	-404.4	-1,091.9	851.7	789.0	62.66	13.593	
10,600.0	9,461.8	19,564.0	9,329.7	36.7	89.7	50.11	-404.4	-1,091.9	948.4	887.1	61.33	15.464	

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

Concho Resources LLC

Anticollision Report



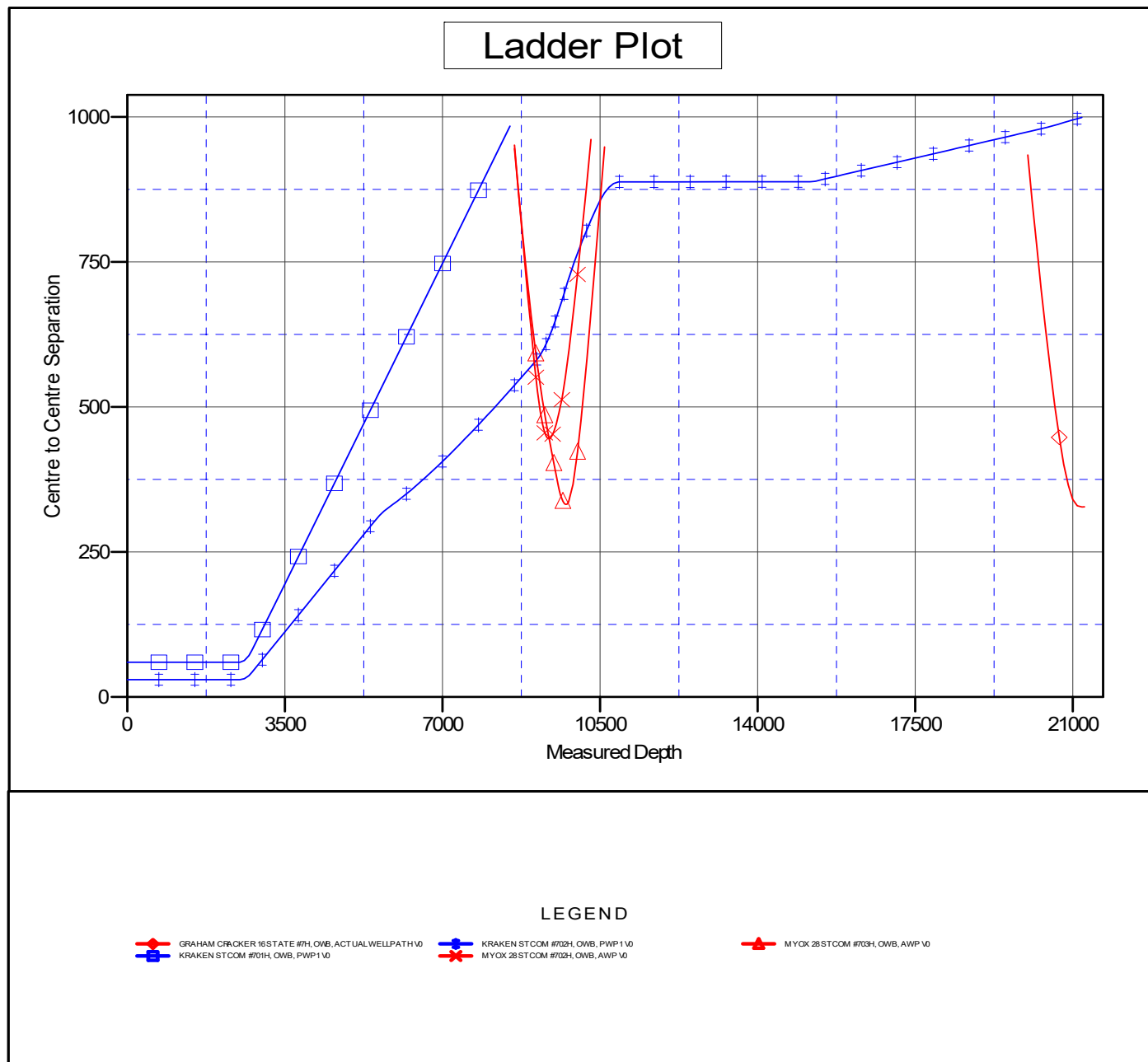
Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Reference Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	KRAKEN ST COM #703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=25' @ 2984.0usft (PIONEER 84) Coordinates are relative to: KRAKEN ST COM #703H

Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30

Central Meridian is 104° 20' 0.000 W
Grid Convergence at Surface is: 0.13°



Concho Resources LLC

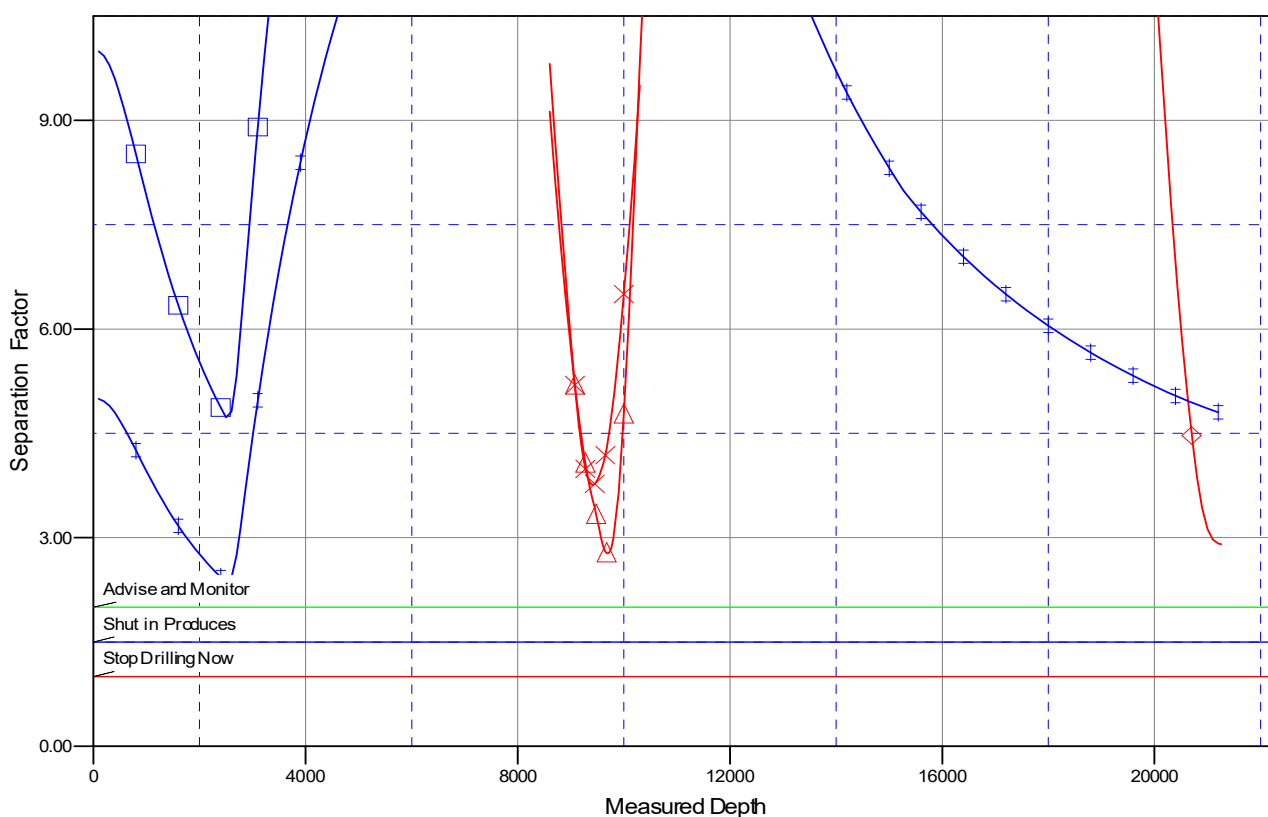
Anticollision Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Reference Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	KRAKEN ST COM #703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=25' @ 2984.0usft (PIONEER 84) Coordinates are relative to: KRAKEN ST COM #703H
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Central Meridian is 104° 20' 0.000 W Grid Convergence at Surface is: 0.13°

Separation Factor Plot



LEGEND

GRAHAM CRACKER 16 STATE #7H, OWB, ACTUAL WELLPATH V0
 KRAKEN ST COM #701H, OWB, PWP1 V0
 KRAKEN ST COM #702H, OWB, PWP1 V0
 MYOK 28 ST COM #702H, OWB, AWP V0
 MYOK 28 ST COM #703H, OWB, AWP V0

DELAWARE BASIN WEST

**ATLAS PROSPECT (NM-E)
KRAKEN ST COM PROJECT
KRAKEN ST COM #703H**

OWB

Plan: PWP1

Standard Survey Report

25 February, 2021



Concho Resources LLC

Survey Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Well:	KRAKEN ST COM #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

Project	ATLAS PROSPECT (NM-E)		
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	KRAKEN ST COM #703H			
Well Position	+N/-S	0.0 usft	Northing:	393,075.62 usft
	+E/-W	0.0 usft	Easting:	576,431.59 usft
Position Uncertainty		3.0 usft	Wellhead Elevation:	usft
			Latitude:	32° 4' 49.585 N
			Longitude:	104° 5' 11.617 W
			Ground Level:	2,959.0 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	1/25/2021	6.82	59.70	47,398.69939782

Design	PWP1				
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	185.04	

Survey Tool Program	Date	2/25/2021			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	21,259.7	PWP1 (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:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Well:	KRAKEN ST COM #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	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	260.00	2,600.0	-0.3	-1.7	0.5	2.00	2.00	0.00
2,700.0	4.00	260.00	2,699.8	-1.2	-6.9	1.8	2.00	2.00	0.00
2,775.0	5.50	260.00	2,774.6	-2.3	-13.0	3.4	2.00	2.00	0.00
Start 6266.7 hold at 2775.0 MD									
2,800.0	5.50	260.00	2,799.5	-2.7	-15.3	4.0	0.00	0.00	0.00
2,900.0	5.50	260.00	2,899.0	-4.4	-24.8	6.5	0.00	0.00	0.00
3,000.0	5.50	260.00	2,998.5	-6.0	-34.2	9.0	0.00	0.00	0.00
3,100.0	5.50	260.00	3,098.1	-7.7	-43.7	11.5	0.00	0.00	0.00
3,200.0	5.50	260.00	3,197.6	-9.4	-53.1	14.0	0.00	0.00	0.00
3,300.0	5.50	260.00	3,297.2	-11.0	-62.5	16.5	0.00	0.00	0.00
3,400.0	5.50	260.00	3,396.7	-12.7	-72.0	19.0	0.00	0.00	0.00
3,500.0	5.50	260.00	3,496.2	-14.4	-81.4	21.4	0.00	0.00	0.00
3,600.0	5.50	260.00	3,595.8	-16.0	-90.9	23.9	0.00	0.00	0.00
3,700.0	5.50	260.00	3,695.3	-17.7	-100.3	26.4	0.00	0.00	0.00
3,800.0	5.50	260.00	3,794.9	-19.3	-109.7	28.9	0.00	0.00	0.00
3,900.0	5.50	260.00	3,894.4	-21.0	-119.2	31.4	0.00	0.00	0.00
4,000.0	5.50	260.00	3,993.9	-22.7	-128.6	33.9	0.00	0.00	0.00
4,100.0	5.50	260.00	4,093.5	-24.3	-138.1	36.4	0.00	0.00	0.00
4,200.0	5.50	260.00	4,193.0	-26.0	-147.5	38.9	0.00	0.00	0.00
4,300.0	5.50	260.00	4,292.6	-27.7	-156.9	41.3	0.00	0.00	0.00
4,400.0	5.50	260.00	4,392.1	-29.3	-166.4	43.8	0.00	0.00	0.00
4,500.0	5.50	260.00	4,491.6	-31.0	-175.8	46.3	0.00	0.00	0.00
4,600.0	5.50	260.00	4,591.2	-32.7	-185.2	48.8	0.00	0.00	0.00
4,700.0	5.50	260.00	4,690.7	-34.3	-194.7	51.3	0.00	0.00	0.00
4,800.0	5.50	260.00	4,790.3	-36.0	-204.1	53.8	0.00	0.00	0.00
4,900.0	5.50	260.00	4,889.8	-37.7	-213.6	56.3	0.00	0.00	0.00
5,000.0	5.50	260.00	4,989.3	-39.3	-223.0	58.7	0.00	0.00	0.00
5,100.0	5.50	260.00	5,088.9	-41.0	-232.4	61.2	0.00	0.00	0.00
5,200.0	5.50	260.00	5,188.4	-42.7	-241.9	63.7	0.00	0.00	0.00
5,300.0	5.50	260.00	5,288.0	-44.3	-251.3	66.2	0.00	0.00	0.00
5,400.0	5.50	260.00	5,387.5	-46.0	-260.8	68.7	0.00	0.00	0.00
5,500.0	5.50	260.00	5,487.0	-47.6	-270.2	71.2	0.00	0.00	0.00

Concho Resources LLC

Survey Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Well:	KRAKEN ST COM #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	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)
5,600.0	5.50	260.00	5,586.6	-49.3	-279.6	73.7	0.00	0.00	0.00
5,700.0	5.50	260.00	5,686.1	-51.0	-289.1	76.2	0.00	0.00	0.00
5,800.0	5.50	260.00	5,785.7	-52.6	-298.5	78.6	0.00	0.00	0.00
5,900.0	5.50	260.00	5,885.2	-54.3	-308.0	81.1	0.00	0.00	0.00
6,000.0	5.50	260.00	5,984.7	-56.0	-317.4	83.6	0.00	0.00	0.00
6,100.0	5.50	260.00	6,084.3	-57.6	-326.8	86.1	0.00	0.00	0.00
6,200.0	5.50	260.00	6,183.8	-59.3	-336.3	88.6	0.00	0.00	0.00
6,300.0	5.50	260.00	6,283.3	-61.0	-345.7	91.1	0.00	0.00	0.00
6,400.0	5.50	260.00	6,382.9	-62.6	-355.2	93.6	0.00	0.00	0.00
6,500.0	5.50	260.00	6,482.4	-64.3	-364.6	96.0	0.00	0.00	0.00
6,600.0	5.50	260.00	6,582.0	-66.0	-374.0	98.5	0.00	0.00	0.00
6,700.0	5.50	260.00	6,681.5	-67.6	-383.5	101.0	0.00	0.00	0.00
6,800.0	5.50	260.00	6,781.0	-69.3	-392.9	103.5	0.00	0.00	0.00
6,900.0	5.50	260.00	6,880.6	-70.9	-402.3	106.0	0.00	0.00	0.00
7,000.0	5.50	260.00	6,980.1	-72.6	-411.8	108.5	0.00	0.00	0.00
7,100.0	5.50	260.00	7,079.7	-74.3	-421.2	111.0	0.00	0.00	0.00
7,200.0	5.50	260.00	7,179.2	-75.9	-430.7	113.5	0.00	0.00	0.00
7,300.0	5.50	260.00	7,278.7	-77.6	-440.1	115.9	0.00	0.00	0.00
7,400.0	5.50	260.00	7,378.3	-79.3	-449.5	118.4	0.00	0.00	0.00
7,500.0	5.50	260.00	7,477.8	-80.9	-459.0	120.9	0.00	0.00	0.00
7,600.0	5.50	260.00	7,577.4	-82.6	-468.4	123.4	0.00	0.00	0.00
7,700.0	5.50	260.00	7,676.9	-84.3	-477.9	125.9	0.00	0.00	0.00
7,800.0	5.50	260.00	7,776.4	-85.9	-487.3	128.4	0.00	0.00	0.00
7,900.0	5.50	260.00	7,876.0	-87.6	-496.7	130.9	0.00	0.00	0.00
8,000.0	5.50	260.00	7,975.5	-89.3	-506.2	133.3	0.00	0.00	0.00
8,100.0	5.50	260.00	8,075.1	-90.9	-515.6	135.8	0.00	0.00	0.00
8,200.0	5.50	260.00	8,174.6	-92.6	-525.1	138.3	0.00	0.00	0.00
8,300.0	5.50	260.00	8,274.1	-94.2	-534.5	140.8	0.00	0.00	0.00
8,400.0	5.50	260.00	8,373.7	-95.9	-543.9	143.3	0.00	0.00	0.00
8,500.0	5.50	260.00	8,473.2	-97.6	-553.4	145.8	0.00	0.00	0.00
8,600.0	5.50	260.00	8,572.8	-99.2	-562.8	148.3	0.00	0.00	0.00
8,700.0	5.50	260.00	8,672.3	-100.9	-572.2	150.8	0.00	0.00	0.00
8,800.0	5.50	260.00	8,771.8	-102.6	-581.7	153.2	0.00	0.00	0.00
8,900.0	5.50	260.00	8,871.4	-104.2	-591.1	155.7	0.00	0.00	0.00
9,000.0	5.50	260.00	8,970.9	-105.9	-600.6	158.2	0.00	0.00	0.00
9,041.7	5.50	260.00	9,012.4	-106.6	-604.5	159.3	0.00	0.00	0.00
Start DLS 12.00 TFO -57.99									
9,100.0	10.95	227.05	9,070.1	-110.9	-611.3	164.1	12.00	9.35	-56.49
9,200.0	22.39	213.55	9,165.8	-133.3	-628.9	188.0	12.00	11.44	-13.50
9,300.0	34.20	209.02	9,253.7	-173.9	-653.1	230.5	12.00	11.81	-4.53
9,400.0	46.10	206.63	9,330.0	-230.9	-683.0	289.9	12.00	11.90	-2.39
9,500.0	58.04	205.05	9,391.4	-301.8	-717.2	363.6	12.00	11.94	-1.58
9,600.0	69.99	203.83	9,435.1	-383.5	-754.3	448.2	12.00	11.95	-1.21
9,700.0	81.95	202.79	9,459.3	-472.4	-792.6	540.2	12.00	11.96	-1.04

Concho Resources LLC

Survey Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Well:	KRAKEN ST COM #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	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)
9,768.6	90.15	202.12	9,464.0	-535.6	-818.7	605.4	12.00	11.96	-0.98
Start DLS 2.00 TFO -89.97									
9,800.0	90.15	201.49	9,463.9	-564.8	-830.4	635.5	2.00	0.00	-2.00
9,900.0	90.15	199.49	9,463.7	-658.4	-865.4	731.9	2.00	0.00	-2.00
10,000.0	90.15	197.49	9,463.4	-753.3	-897.1	829.1	2.00	0.00	-2.00
10,100.0	90.15	195.49	9,463.1	-849.1	-925.5	927.1	2.00	0.00	-2.00
10,200.0	90.15	193.49	9,462.9	-946.0	-950.5	1,025.8	2.00	0.00	-2.00
10,300.0	90.15	191.49	9,462.6	-1,043.6	-972.2	1,124.9	2.00	0.00	-2.00
10,400.0	90.15	189.49	9,462.3	-1,141.9	-990.4	1,224.4	2.00	0.00	-2.00
10,500.0	90.15	187.49	9,462.1	-1,240.8	-1,005.1	1,324.3	2.00	0.00	-2.00
10,600.0	90.15	185.49	9,461.8	-1,340.2	-1,016.4	1,424.2	2.00	0.00	-2.00
10,700.0	90.15	183.49	9,461.6	-1,439.8	-1,024.3	1,524.2	2.00	0.00	-2.00
10,800.0	90.15	181.49	9,461.3	-1,539.7	-1,028.6	1,624.1	2.00	0.00	-2.00
10,900.0	90.15	179.49	9,461.0	-1,639.7	-1,029.5	1,723.8	2.00	0.00	-2.00
10,928.5	90.15	178.92	9,460.9	-1,668.3	-1,029.1	1,752.2	2.00	0.00	-2.00
Start 4231.2 hold at 10928.5 MD									
11,000.0	90.15	178.92	9,460.8	-1,739.7	-1,027.7	1,823.2	0.00	0.00	0.00
11,100.0	90.15	178.92	9,460.5	-1,839.7	-1,025.8	1,922.7	0.00	0.00	0.00
11,200.0	90.15	178.92	9,460.2	-1,939.7	-1,024.0	2,022.1	0.00	0.00	0.00
11,300.0	90.15	178.92	9,460.0	-2,039.7	-1,022.1	2,121.5	0.00	0.00	0.00
11,400.0	90.15	178.92	9,459.7	-2,139.6	-1,020.2	2,221.0	0.00	0.00	0.00
11,500.0	90.15	178.92	9,459.5	-2,239.6	-1,018.3	2,320.4	0.00	0.00	0.00
11,600.0	90.15	178.92	9,459.2	-2,339.6	-1,016.4	2,419.8	0.00	0.00	0.00
11,700.0	90.15	178.92	9,458.9	-2,439.6	-1,014.5	2,519.2	0.00	0.00	0.00
11,800.0	90.15	178.92	9,458.7	-2,539.6	-1,012.7	2,618.7	0.00	0.00	0.00
11,900.0	90.15	178.92	9,458.4	-2,639.6	-1,010.8	2,718.1	0.00	0.00	0.00
12,000.0	90.15	178.92	9,458.2	-2,739.5	-1,008.9	2,817.5	0.00	0.00	0.00
12,100.0	90.15	178.92	9,457.9	-2,839.5	-1,007.0	2,917.0	0.00	0.00	0.00
12,200.0	90.15	178.92	9,457.6	-2,939.5	-1,005.1	3,016.4	0.00	0.00	0.00
12,300.0	90.15	178.92	9,457.4	-3,039.5	-1,003.3	3,115.8	0.00	0.00	0.00
12,400.0	90.15	178.92	9,457.1	-3,139.5	-1,001.4	3,215.3	0.00	0.00	0.00
12,500.0	90.15	178.92	9,456.8	-3,239.4	-999.5	3,314.7	0.00	0.00	0.00
12,600.0	90.15	178.92	9,456.6	-3,339.4	-997.6	3,414.1	0.00	0.00	0.00
12,700.0	90.15	178.92	9,456.3	-3,439.4	-995.7	3,513.6	0.00	0.00	0.00
12,800.0	90.15	178.92	9,456.1	-3,539.4	-993.8	3,613.0	0.00	0.00	0.00
12,900.0	90.15	178.92	9,455.8	-3,639.4	-992.0	3,712.4	0.00	0.00	0.00
13,000.0	90.15	178.92	9,455.5	-3,739.4	-990.1	3,811.8	0.00	0.00	0.00
13,100.0	90.15	178.92	9,455.3	-3,839.3	-988.2	3,911.3	0.00	0.00	0.00
13,200.0	90.15	178.92	9,455.0	-3,939.3	-986.3	4,010.7	0.00	0.00	0.00
13,300.0	90.15	178.92	9,454.8	-4,039.3	-984.4	4,110.1	0.00	0.00	0.00
13,400.0	90.15	178.92	9,454.5	-4,139.3	-982.5	4,209.6	0.00	0.00	0.00
13,500.0	90.15	178.92	9,454.2	-4,239.3	-980.7	4,309.0	0.00	0.00	0.00
13,600.0	90.15	178.92	9,454.0	-4,339.2	-978.8	4,408.4	0.00	0.00	0.00

Concho Resources LLC

Survey Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Well:	KRAKEN ST COM #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	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)
13,700.0	90.15	178.92	9,453.7	-4,439.2	-976.9	4,507.9	0.00	0.00	0.00
13,800.0	90.15	178.92	9,453.5	-4,539.2	-975.0	4,607.3	0.00	0.00	0.00
13,900.0	90.15	178.92	9,453.2	-4,639.2	-973.1	4,706.7	0.00	0.00	0.00
14,000.0	90.15	178.92	9,452.9	-4,739.2	-971.2	4,806.1	0.00	0.00	0.00
14,100.0	90.15	178.92	9,452.7	-4,839.2	-969.4	4,905.6	0.00	0.00	0.00
14,200.0	90.15	178.92	9,452.4	-4,939.1	-967.5	5,005.0	0.00	0.00	0.00
14,300.0	90.15	178.92	9,452.1	-5,039.1	-965.6	5,104.4	0.00	0.00	0.00
14,400.0	90.15	178.92	9,451.9	-5,139.1	-963.7	5,203.9	0.00	0.00	0.00
14,500.0	90.15	178.92	9,451.6	-5,239.1	-961.8	5,303.3	0.00	0.00	0.00
14,600.0	90.15	178.92	9,451.4	-5,339.1	-959.9	5,402.7	0.00	0.00	0.00
14,700.0	90.15	178.92	9,451.1	-5,439.1	-958.1	5,502.2	0.00	0.00	0.00
14,800.0	90.15	178.92	9,450.8	-5,539.0	-956.2	5,601.6	0.00	0.00	0.00
14,900.0	90.15	178.92	9,450.6	-5,639.0	-954.3	5,701.0	0.00	0.00	0.00
15,000.0	90.15	178.92	9,450.3	-5,739.0	-952.4	5,800.5	0.00	0.00	0.00
15,100.0	90.15	178.92	9,450.1	-5,839.0	-950.5	5,899.9	0.00	0.00	0.00
15,159.8	90.15	178.92	9,449.9	-5,898.7	-949.4	5,959.3	0.00	0.00	0.00
Start DLS 2.00 TFO 90.01									
15,200.0	90.15	179.73	9,449.8	-5,939.0	-948.9	5,999.3	2.00	0.00	2.00
15,265.4	90.15	181.03	9,449.6	-6,004.4	-949.4	6,064.5	2.00	0.00	2.00
Start 5994.8 hold at 15265.4 MD									
15,300.0	90.15	181.03	9,449.5	-6,039.0	-950.0	6,099.0	0.00	0.00	0.00
15,400.0	90.15	181.03	9,449.3	-6,138.9	-951.8	6,198.8	0.00	0.00	0.00
15,500.0	90.15	181.03	9,449.0	-6,238.9	-953.6	6,298.6	0.00	0.00	0.00
15,600.0	90.15	181.03	9,448.8	-6,338.9	-955.4	6,398.3	0.00	0.00	0.00
15,700.0	90.15	181.03	9,448.5	-6,438.9	-957.2	6,498.1	0.00	0.00	0.00
15,800.0	90.15	181.03	9,448.2	-6,538.9	-959.0	6,597.8	0.00	0.00	0.00
15,900.0	90.15	181.03	9,448.0	-6,638.9	-960.8	6,697.6	0.00	0.00	0.00
16,000.0	90.15	181.03	9,447.7	-6,738.8	-962.6	6,797.3	0.00	0.00	0.00
16,100.0	90.15	181.03	9,447.4	-6,838.8	-964.4	6,897.1	0.00	0.00	0.00
16,200.0	90.15	181.03	9,447.2	-6,938.8	-966.2	6,996.8	0.00	0.00	0.00
16,300.0	90.15	181.03	9,446.9	-7,038.8	-968.0	7,096.6	0.00	0.00	0.00
16,400.0	90.15	181.03	9,446.7	-7,138.8	-969.8	7,196.4	0.00	0.00	0.00
16,500.0	90.15	181.03	9,446.4	-7,238.8	-971.6	7,296.1	0.00	0.00	0.00
16,600.0	90.15	181.03	9,446.1	-7,338.7	-973.4	7,395.9	0.00	0.00	0.00
16,700.0	90.15	181.03	9,445.9	-7,438.7	-975.2	7,495.6	0.00	0.00	0.00
16,800.0	90.15	181.03	9,445.6	-7,538.7	-977.0	7,595.4	0.00	0.00	0.00
16,900.0	90.15	181.03	9,445.4	-7,638.7	-978.8	7,695.1	0.00	0.00	0.00
17,000.0	90.15	181.03	9,445.1	-7,738.7	-980.6	7,794.9	0.00	0.00	0.00
17,100.0	90.15	181.03	9,444.8	-7,838.7	-982.5	7,894.6	0.00	0.00	0.00
17,200.0	90.15	181.03	9,444.6	-7,938.6	-984.3	7,994.4	0.00	0.00	0.00
17,300.0	90.15	181.03	9,444.3	-8,038.6	-986.1	8,094.2	0.00	0.00	0.00
17,400.0	90.15	181.03	9,444.1	-8,138.6	-987.9	8,193.9	0.00	0.00	0.00
17,500.0	90.15	181.03	9,443.8	-8,238.6	-989.7	8,293.7	0.00	0.00	0.00
17,600.0	90.15	181.03	9,443.5	-8,338.6	-991.5	8,393.4	0.00	0.00	0.00

Concho Resources LLC

Survey Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Well:	KRAKEN ST COM #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	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)
17,700.0	90.15	181.03	9,443.3	-8,438.6	-993.3	8,493.2	0.00	0.00	0.00
17,800.0	90.15	181.03	9,443.0	-8,538.5	-995.1	8,592.9	0.00	0.00	0.00
17,900.0	90.15	181.03	9,442.8	-8,638.5	-996.9	8,692.7	0.00	0.00	0.00
18,000.0	90.15	181.03	9,442.5	-8,738.5	-998.7	8,792.4	0.00	0.00	0.00
18,100.0	90.15	181.03	9,442.2	-8,838.5	-1,000.5	8,892.2	0.00	0.00	0.00
18,200.0	90.15	181.03	9,442.0	-8,938.5	-1,002.3	8,992.0	0.00	0.00	0.00
18,300.0	90.15	181.03	9,441.7	-9,038.5	-1,004.1	9,091.7	0.00	0.00	0.00
18,400.0	90.15	181.03	9,441.5	-9,138.4	-1,005.9	9,191.5	0.00	0.00	0.00
18,500.0	90.15	181.03	9,441.2	-9,238.4	-1,007.7	9,291.2	0.00	0.00	0.00
18,600.0	90.15	181.03	9,440.9	-9,338.4	-1,009.5	9,391.0	0.00	0.00	0.00
18,700.0	90.15	181.03	9,440.7	-9,438.4	-1,011.3	9,490.7	0.00	0.00	0.00
18,800.0	90.15	181.03	9,440.4	-9,538.4	-1,013.1	9,590.5	0.00	0.00	0.00
18,900.0	90.15	181.03	9,440.2	-9,638.4	-1,014.9	9,690.2	0.00	0.00	0.00
19,000.0	90.15	181.03	9,439.9	-9,738.3	-1,016.7	9,790.0	0.00	0.00	0.00
19,100.0	90.15	181.03	9,439.6	-9,838.3	-1,018.5	9,889.8	0.00	0.00	0.00
19,200.0	90.15	181.03	9,439.4	-9,938.3	-1,020.3	9,989.5	0.00	0.00	0.00
19,300.0	90.15	181.03	9,439.1	-10,038.3	-1,022.1	10,089.3	0.00	0.00	0.00
19,400.0	90.15	181.03	9,438.8	-10,138.3	-1,023.9	10,189.0	0.00	0.00	0.00
19,500.0	90.15	181.03	9,438.6	-10,238.3	-1,025.7	10,288.8	0.00	0.00	0.00
19,600.0	90.15	181.03	9,438.3	-10,338.2	-1,027.5	10,388.5	0.00	0.00	0.00
19,700.0	90.15	181.03	9,438.1	-10,438.2	-1,029.4	10,488.3	0.00	0.00	0.00
19,800.0	90.15	181.03	9,437.8	-10,538.2	-1,031.2	10,588.0	0.00	0.00	0.00
19,900.0	90.15	181.03	9,437.5	-10,638.2	-1,033.0	10,687.8	0.00	0.00	0.00
20,000.0	90.15	181.03	9,437.3	-10,738.2	-1,034.8	10,787.6	0.00	0.00	0.00
20,100.0	90.15	181.03	9,437.0	-10,838.2	-1,036.6	10,887.3	0.00	0.00	0.00
20,200.0	90.15	181.03	9,436.8	-10,938.1	-1,038.4	10,987.1	0.00	0.00	0.00
20,300.0	90.15	181.03	9,436.5	-11,038.1	-1,040.2	11,086.8	0.00	0.00	0.00
20,400.0	90.15	181.03	9,436.2	-11,138.1	-1,042.0	11,186.6	0.00	0.00	0.00
20,500.0	90.15	181.03	9,436.0	-11,238.1	-1,043.8	11,286.3	0.00	0.00	0.00
20,600.0	90.15	181.03	9,435.7	-11,338.1	-1,045.6	11,386.1	0.00	0.00	0.00
20,700.0	90.15	181.03	9,435.5	-11,438.1	-1,047.4	11,485.8	0.00	0.00	0.00
20,800.0	90.15	181.03	9,435.2	-11,538.0	-1,049.2	11,585.6	0.00	0.00	0.00
20,900.0	90.15	181.03	9,434.9	-11,638.0	-1,051.0	11,685.4	0.00	0.00	0.00
21,000.0	90.15	181.03	9,434.7	-11,738.0	-1,052.8	11,785.1	0.00	0.00	0.00
21,100.0	90.15	181.03	9,434.4	-11,838.0	-1,054.6	11,884.9	0.00	0.00	0.00
21,200.0	90.15	181.03	9,434.2	-11,938.0	-1,056.4	11,984.6	0.00	0.00	0.00
21,260.2	90.15	181.03	9,434.0	-11,998.2	-1,057.5	12,044.7	0.00	0.00	0.00

TD at 21260.2

Concho Resources LLC

Survey Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well KRAKEN ST COM #703H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Site:	KRAKEN ST COM PROJECT	MD Reference:	KB=25' @ 2984.0usft (PIONEER 84)
Well:	KRAKEN ST COM #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

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
LTP/PBHL (KRAKEN - plan hits target center - Rectangle (sides W100.0 H6,102.0 D20.0)	0.15	1.03	9,434.0	-11,998.2	-1,057.5	381,077.42	575,374.09	32° 2' 50.868 N	104° 5' 24.223 W
POI 1 (KRAKEN ST C - plan hits target center - Rectangle (sides W100.0 H5,340.0 D20.0)	0.15	358.92	9,449.9	-5,898.7	-949.4	387,176.89	575,482.20	32° 3' 51.229 N	104° 5' 22.807 W
FTP (KRAKEN ST CC - plan misses target center by 190.1usft at 9913.5usft MD (9463.6 TVD, -671.2 N, -869.9 E) - Circle (radius 50.0)	0.00	0.00	9,464.0	-610.9	-1,050.2	392,464.74	575,381.40	32° 4' 43.563 N	104° 5' 23.839 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2500	2500	0	0	Start Build 2.00
2775	2775	-2	-13	Start 6266.7 hold at 2775.0 MD
9042	9012	-107	-604	Start DLS 12.00 TFO -57.99
9769	9464	-536	-819	Start DLS 2.00 TFO -89.97
10,929	9461	-1668	-1029	Start 4231.2 hold at 10928.5 MD
15,160	9450	-5899	-949	Start DLS 2.00 TFO 90.01
15,265	9450	-6004	-949	Start 5994.8 hold at 15265.4 MD
21,260	9434	-11,998	-1058	TD at 21260.2

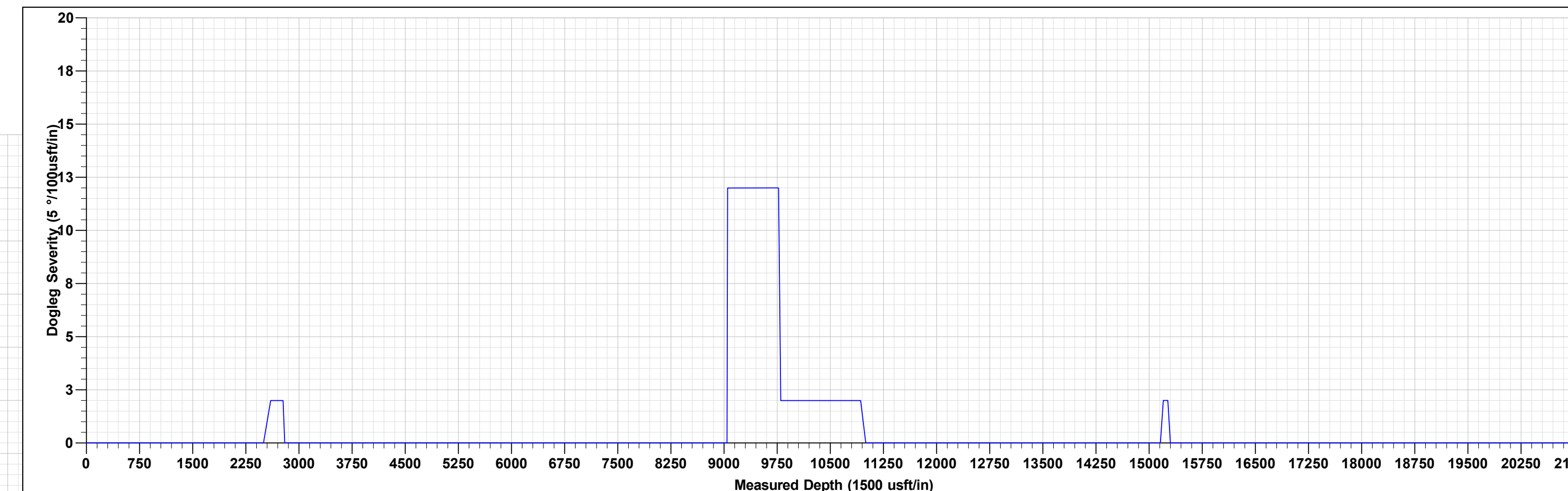
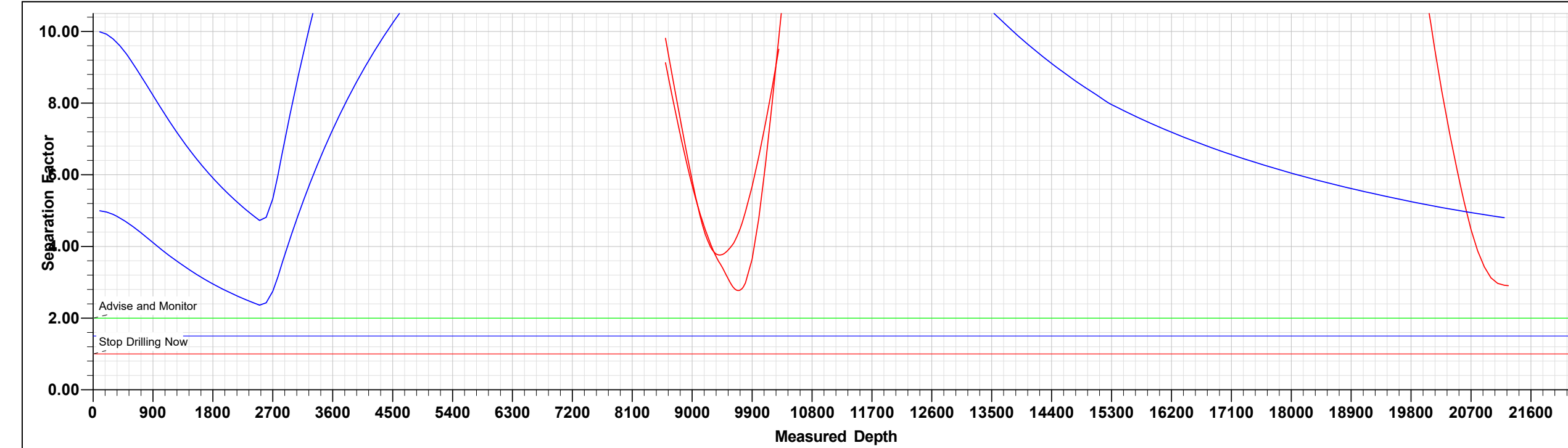
Checked By: _____ Approved By: _____ Date: _____



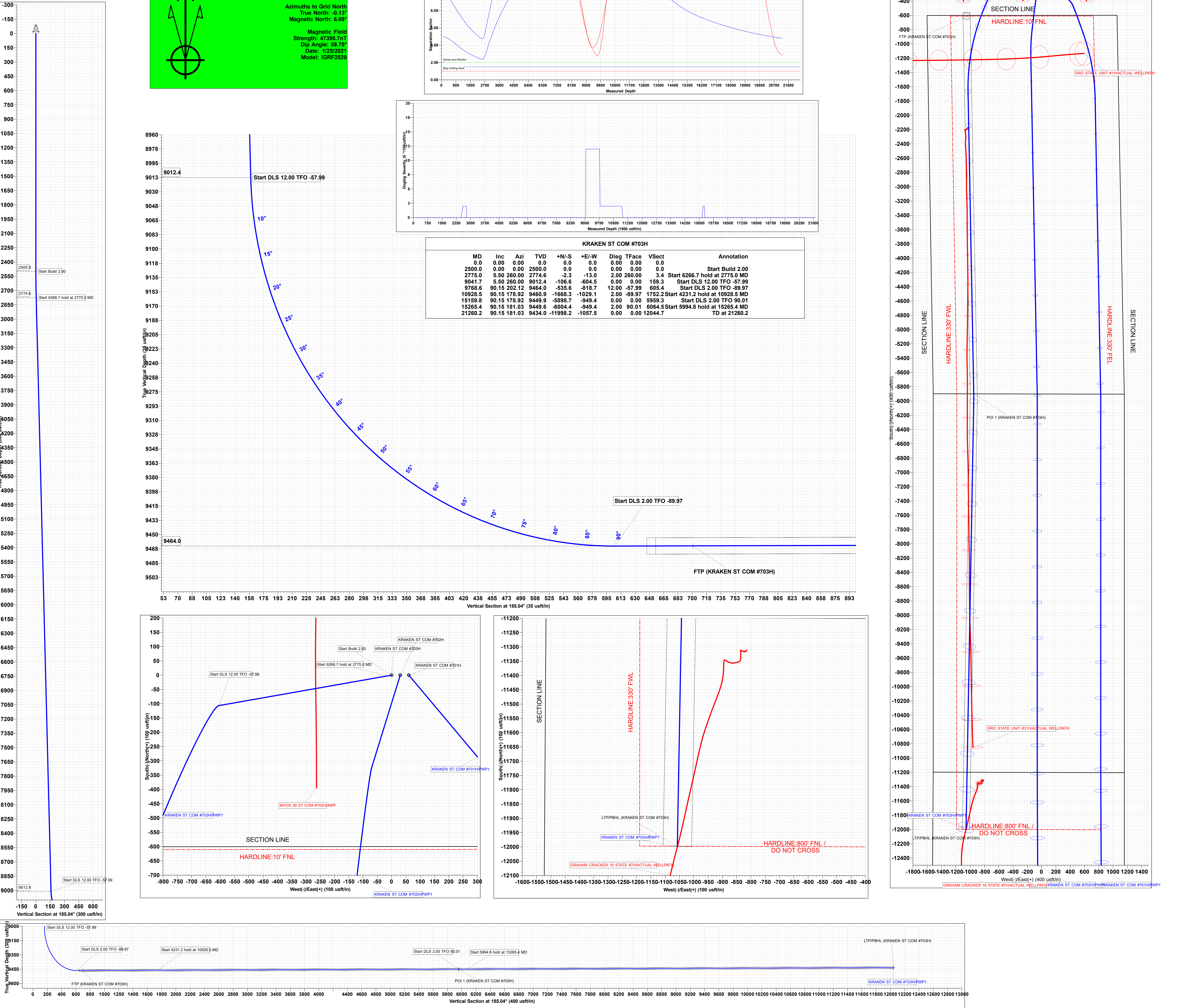
Project: ATLAS PROSPECT (NM-E)
Site: KRAKEN ST COM PROJECT
Well: KRAKEN ST COM #703H
Wellbore: OWB
Design: PWP1
GL: 2959.0
KB=25° @ 2984.0usft (PIONEER 84)

WELL DETAILS: KRAKEN ST COM #703H					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	393075.62	576431.59	32° 4' 49.585 N	104° 5' 11.617 W

DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude
LTP/PBHL (KRAKEN ST COM #703H)	9434.0	-11998.2	-1057.5	381077.42	575374.09	32° 2' 50.868 N
POI 1 (KRAKEN ST COM #703H)	9449.9	-5898.7	-949.4	387176.89	575482.19	32° 3' 51.229 N
FTP (KRAKEN ST COM #703H)	9464.0	-610.9	-1050.2	392464.74	575381.40	32° 4' 43.563 N



KRAKEN ST COM #703H									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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
2775.0	5.50	260.00	2774.6	-2.3	-13.0	2.00	260.00	3.4	Start 6266.7 hold at 2775.0 MD
9041.7	5.50	260.00	9012.4	-106.6	-604.5	0.00	0.00	159.3	Start DLS 12.00 TFO -57.99
9768.6	90.15	202.12	9464.0	-535.6	-818.7	12.00	-57.99	605.4	Start DLS 2.00 TFO -89.97
10928.5	90.15	178.92	9460.9	-1668.3	-1029.1	2.00	-89.97	1752.2	Start 4231.2 hold at 10928.5 MD
15159.3	90.15	178.92	9449.9	-5898.7	-949.4	0.00	0.00	5899.3	Start DLS 2.00 TFO 90.01
15265.4	90.15	181.03	9449.6	-6004.4	-949.4	2.00	90.01	6064.5	Start 5994.8 hold at 15265.4 MD
21260.2	90.15	181.03	9434.0	-11998.2	-1057.5	0.00	0.00	12044.7	TD at 21260.2



COG OPERATING LLC
HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

1. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

- a. The hazards and characteristics of hydrogen sulfide (H₂S).
- b. The proper use and maintenance of personal protective equipment and life support systems.
- c. The proper use of H₂S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
- d. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

- a. The effects of H₂S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
- b. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
- c. The contents and requirements of the H₂S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

2. H₂S SAFETY EQUIPMENT AND SYSTEMS

Note: All H₂S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H₂S. If H₂S greater than 100 ppm is encountered in the gas stream we will shut in and install H₂S equipment.

- a. Well Control Equipment:
 - Flare line.
 - Choke manifold with remotely operated choke.
 - Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
 - Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.

- b. Protective equipment for essential personnel:
Mark II Surviveair 30-minute units located in the dog house and at briefing areas.
- c. H2S detection and monitoring equipment:
2 - portable H2S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 ppm are reached.
- d. Visual warning systems:
Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.
- e. Mud Program:
The mud program has been designed to minimize the volume of H2S circulated to the surface.
- f. Metallurgy:
All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.
- g. Communication:
Company vehicles equipped with cellular telephone.

COG OPERATING LLC has conducted a review to determine if an H2S contingency plan is required for the above referenced well. We were able to conclude that any potential hazardous volume would be minimal. H2S concentrations of wells in this area from surface to TD are low enough; therefore, we do not believe that an H2S contingency plan is necessary.

W A R N I N G

**YOU ARE ENTERING AN H₂S AREA
AUTHORIZED PERSONNEL ONLY**

- 1. BEARDS OR CONTACT LENSES NOT ALLOWED***
- 2. HARD HATS REQUIRED***
- 3. SMOKING IN DESIGNATED AREAS ONLY***
- 4. BE WIND CONSCIOUS AT ALL TIMES***
- 5. CK WITH COG OPERATING LLC FOREMAN AT MAIN OFFICE***

COG OPERATING LLC

1-575-748-6940

EMERGENCY CALL LIST

	<u>OFFICE</u>	<u>MOBILE</u>
COG OPERATING LLC OFFICE	575-748-6940	
SETH WILD	432-683-7443	432-528-3633
WALTER ROYE	575-748-6940	432-934-1886

EMERGENCY RESPONSE NUMBERS

	<u>OFFICE</u>
STATE POLICE	575-748-9718
EDDY COUNTY SHERIFF	575-746-2701
EMERGENCY MEDICAL SERVICES (AMBULANCE)	911 or 575-746-2701
EDDY COUNTY EMERGENCY MANAGEMENT (HARRY BURGESS)	575-887-9511
STATE EMERGENCY RESPONSE CENTER (SERC)	575-476-9620
CARLSBAD POLICE DEPARTMENT	575-885-2111
CARLSBAD FIRE DEPARTMENT	575-885-3125
NEW MEXICO OIL CONSERVATION DIVISION	575-748-1283
INDIAN FIRE & SAFETY	800-530-8693
HALLIBURTON SERVICES	800-844-8451