

CONCHO

COG Operating LLC

Lea County, NM (NAD-27 2015)

Zeppo 5 Federal Com #15H

SHL: 2490' FNL, 2335' FEL, Sec 5, T17S, R32E, Unit G

PP: 2970' FNL, 2289' FEL, Sec 5, T17S, R32E, Unit J

BHL: 55' FSL, 2308' FEL, Sec 8, T17S, R32E, Unit O

Design #1

Anticollision Report

06 February, 2017

HOBBS OCD
OCT 24 2017
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TDS
Anticollision Report



Company: COG Operating LLC
Project: Lea County, NM (NAD-27 2015)
Reference Site: Zeppo 5 Federal Com #15H
Site Error: 0.00 usft
Reference Well: SHL: 2490' FNL, 2335' FEL, Sec 5, T17S, R32E, Unit G
Well Error: 0.00 usft
Reference Wellbore: BHL: 55' FSL, 2308' FEL, Sec 8, T17S, R32E, Unit O
Reference Design: Design #1

Local Co-ordinate Reference: Site Zeppo 5 Federal Com #15H
TVD Reference: KB @ 4117.00usft (Patriot 6)
MD Reference: KB @ 4117.00usft (Patriot 6)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Reference	Design #1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum separation factor of 5.00
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic
Casing Method:	Not applied

Survey Tool Program Date 2/6/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	13,492.21	Design #1 (BHL: 55' FSL, 2308' FEL, Sec	MWD	MWD - Standard

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Lea County Offset Wells						
Grace Mitchell B #4 - OH - OH						Out of range
Grace Mitchell B Federal #6 - OH - OH						Out of range
Maljamar Grayburg Unit #31 - OH - OH						Out of range
Zeppo 5 Federal Com #25H						
SHL: 2490' FNL, 2210' FEL, Sec 5, T17S, R32E, Unit G	13,427.08	13,944.59	499.00	383.97	4.338	CC, ES, SF

Offset Design Zeppo 5 Federal Com #25H - SHL: 2490' FNL, 2210' FEL, Sec 5, T17S, R32E, Unit G - BHL: 121' FSL,												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
12,500.00	5,700.00	13,018.89	6,202.49	128.77	128.96	-179.19	-7,021.78	81.26	501.54	400.05	101.49	4.942	
12,600.00	5,700.00	13,118.88	6,202.22	130.59	130.78	-179.28	-7,121.78	80.64	501.26	398.32	102.94	4.869	
12,700.00	5,700.00	13,218.88	6,201.95	132.42	132.60	-179.37	-7,221.77	80.01	500.98	396.58	104.40	4.799	
12,800.00	5,700.00	13,318.87	6,201.68	134.24	134.43	-179.45	-7,321.77	79.39	500.71	394.85	105.86	4.730	
12,900.00	5,700.00	13,418.87	6,201.41	136.07	136.25	-179.54	-7,421.76	78.77	500.43	393.11	107.32	4.663	
13,000.00	5,700.00	13,518.87	6,201.14	137.90	138.07	-179.63	-7,521.76	78.15	500.16	391.38	108.78	4.598	
13,100.00	5,700.00	13,618.86	6,200.88	139.72	139.89	-179.72	-7,621.75	77.52	499.88	389.64	110.24	4.534	
13,200.00	5,700.00	13,718.86	6,200.61	141.55	141.72	-179.81	-7,721.74	76.90	499.61	387.91	111.70	4.473	
13,300.00	5,700.00	13,818.86	6,200.34	143.38	143.54	-179.90	-7,821.74	76.28	499.34	386.17	113.17	4.412	
13,400.00	5,700.00	13,918.85	6,200.07	145.20	145.36	-179.99	-7,921.73	75.65	499.07	384.44	114.63	4.354	
13,427.08	5,700.00	13,944.59	6,200.00	145.70	145.83	179.99	-7,947.47	75.49	499.00	383.97	115.03	4.338	CC, ES, SF
13,492.21	5,700.00	13,944.59	6,200.00	146.89	145.83	179.99	-7,947.47	75.49	503.23	388.14	115.09	4.372	

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

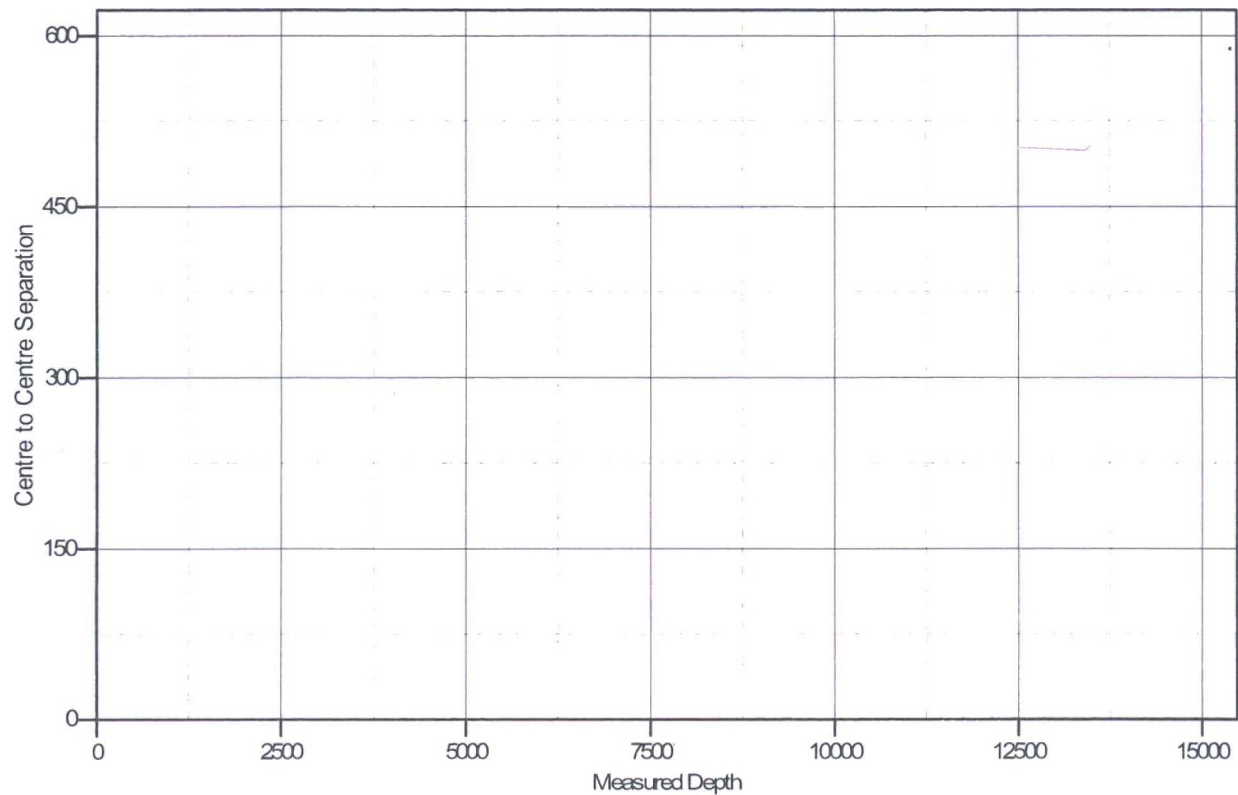
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Reference Depths are relative to KB @ 4117.00usft (Patriot 6)
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Zeppo 5 Federal Com #15H
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Grid Convergence at Surface is: 0.30°

Ladder Plot



LEGEND

Design #1 V0

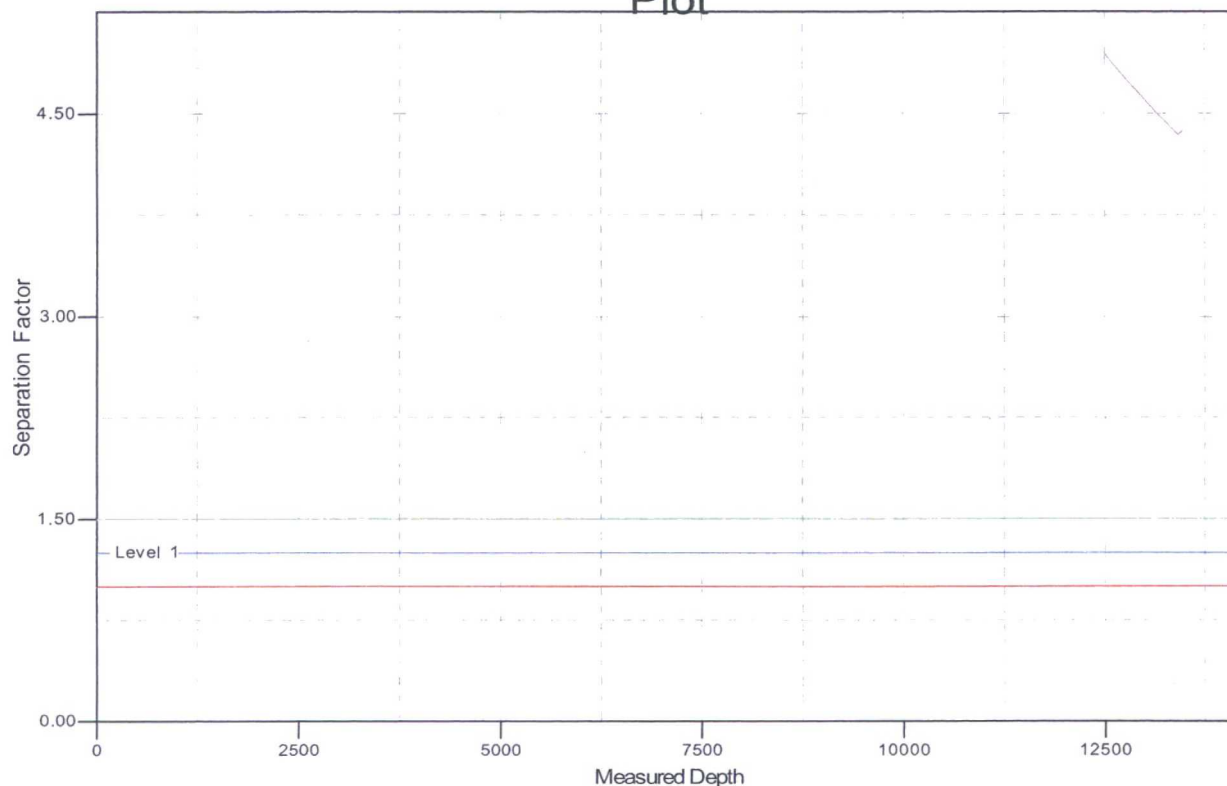
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Separation Factor Plot



LEGEND

Design #1 V0