

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

SW SE SEC. 32 T6N R65W 6th P.M.

WAKE EAST 10N

ORIGINAL WELLBORE

PROPOSAL #1

Anticollision Report

15 March, 2017



Anticollision Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well WAKE EAST 10N
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4660.0usft (Original Well Elev)
Reference Site:	SW SE SEC. 32 T6N R65W 6th P.M.	MD Reference:	KB-EST @ 4660.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	WAKE EAST 10N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

Reference	PROPOSAL #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 us	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	10/03/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	17,500.9	PROPOSAL #1 (ORIGINAL WELLBORE)	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
Offet Well - Wellbore - Design						
NW SE SEC. 32 T6N R65W 6th P.M.						
EXIST DD THERMO #5-5-32 - Wellbore #1 - Wellbore #1	1,378.1	1,388.3	283.7	277.6	46.837	CC
EXIST DD THERMO #5-5-32 - Wellbore #1 - Wellbore #1	1,400.0	1,409.3	283.8	277.6	45.744	ES
EXIST DD THERMO #5-5-32 - Wellbore #1 - Wellbore #1	5,200.0	5,055.5	1,300.7	1,253.4	27.493	SF
EXIST HZ ISALND GROVE #2-32 - Wellbore #1 - Wellbore #1	2,421.6	3,163.9	3,108.2	3,089.0	162.546	CC, ES
EXIST HZ ISALND GROVE #2-32 - Wellbore #1 - Wellbore #1	13,400.0	8,605.0	9,950.2	9,731.5	45.491	SF
EXIST VERT ADAMS #1 - Wellbore #1 - Design #1	7,967.1	6,984.0	1,599.0	1,411.7	8.536	CC
EXIST VERT ADAMS #1 - Wellbore #1 - Design #1	8,000.0	6,984.0	1,599.3	1,411.3	8.504	ES
EXIST VERT ADAMS #1 - Wellbore #1 - Design #1	8,300.0	6,984.0	1,633.3	1,438.1	8.369	SF
EXIST VERT HARVEST #1 - Wellbore #1 - Design #1	7,178.3	6,657.3	804.5	623.6	4.447	CC
EXIST VERT HARVEST #1 - Wellbore #1 - Design #1	7,200.0	6,675.3	804.9	623.6	4.438	ES, SF
EXIST VERT HUNGENBERG #13-33 - Wellbore #1 - Design #1	6,075.7	5,677.2	1,132.1	980.1	7.451	CC
EXIST VERT HUNGENBERG #13-33 - Wellbore #1 - Design #1	6,200.0	5,787.3	1,133.5	978.3	7.301	ES
EXIST VERT HUNGENBERG #13-33 - Wellbore #1 - Design #1	8,100.0	6,960.0	1,230.4	1,040.3	6.471	SF
EXIST VERT HUNGENBERG #14-33 - Wellbore #1 - Design #1	4,112.7	3,928.7	2,117.6	2,018.8	21.429	CC
EXIST VERT HUNGENBERG #14-33 - Wellbore #1 - Design #1	4,400.0	4,183.3	2,121.8	2,015.3	19.920	ES
EXIST VERT HUNGENBERG #14-33 - Wellbore #1 - Design #1	9,000.0	6,951.0	2,672.1	2,459.6	12.575	SF
EXIST VERT JOHNSON OLY #1 - Wellbore #1 - Design #1	7,130.6	6,629.6	2,719.7	2,539.2	15.069	CC
EXIST VERT JOHNSON OLY #1 - Wellbore #1 - Design #1	7,150.0	6,646.3	2,720.0	2,539.1	15.036	ES
EXIST VERT JOHNSON OLY #1 - Wellbore #1 - Design #1	7,200.0	6,688.3	2,723.2	2,541.8	15.006	SF
EXIST VERT JOZ A #5-7-32 - Wellbore #1 - Design #1	1,300.0	1,296.0	293.1	264.6	10.277	CC
EXIST VERT JOZ A #5-7-32 - Wellbore #1 - Design #1	1,400.0	1,396.0	294.7	263.9	9.586	ES
EXIST VERT JOZ A #5-7-32 - Wellbore #1 - Design #1	1,900.0	1,892.9	342.6	301.3	8.287	SF
WAKE NORTH 1 - ORIGINAL WELLBORE - PROPOSAL	0.0	6.0	1,841.6			
WAKE NORTH 1 - ORIGINAL WELLBORE - PROPOSAL	100.0	100.0	1,841.6	1,841.4	9,754.112	ES
WAKE NORTH 1 - ORIGINAL WELLBORE - PROPOSAL	8,800.0	7,119.8	2,534.4	2,420.7	22.302	SF
WAKE NORTH 10 - ORIGINAL WELLBORE - PROPOSAL	7,358.4	7,240.5	377.6	289.2	4.276	CC, ES
WAKE NORTH 10 - ORIGINAL WELLBORE - PROPOSAL	7,400.0	7,245.7	380.1	291.0	4.268	SF
WAKE NORTH 11 - ORIGINAL WELLBORE - PROPOSAL	7,285.6	7,265.0	71.5	-16.6	0.812	Level 1, CC, ES, SF
WAKE NORTH 12 - ORIGINAL WELLBORE - PROPOSAL	7,338.1	7,308.2	118.4	27.8	1.307	Level 3, CC, ES, SF
WAKE NORTH 13 - ORIGINAL WELLBORE - PROPOSAL	6,186.5	6,133.8	229.7	181.9	4.808	CC
WAKE NORTH 13 - ORIGINAL WELLBORE - PROPOSAL	7,150.0	7,257.9	233.3	144.8	2.638	SF
WAKE NORTH 13 - ORIGINAL WELLBORE - PROPOSAL	7,177.8	7,272.3	232.1	144.3	2.643	ES
WAKE NORTH 14 - ORIGINAL WELLBORE - PROPOSAL	5,684.7	5,656.2	156.4	111.6	3.495	CC, ES
WAKE NORTH 14 - ORIGINAL WELLBORE - PROPOSAL	5,700.0	5,670.1	156.5	111.7	3.493	SF
WAKE NORTH 15 - ORIGINAL WELLBORE - PROPOSAL	5,499.5	5,484.7	72.1	28.7	1.662	CC
WAKE NORTH 15 - ORIGINAL WELLBORE - PROPOSAL	5,500.0	5,485.1	72.1	28.7	1.662	ES, SF
WAKE NORTH 16 - ORIGINAL WELLBORE - PROPOSAL	5,203.7	5,208.2	104.1	62.1	2.478	CC, ES, SF

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

Anticollision Report



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Reference Site:	SW SE SEC. 32 T6N R65W 6th P.M.	MD Reference:	KB-EST @ 4660.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	WAKE EAST 10N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

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
NW SE SEC. 32 T6N R65W 6th P.M.						
WAKE NORTH 17 - ORIGINAL WELLBORE - PROPOS/	4,800.0	4,843.8	62.8	22.7	1.567	ES, SF
WAKE NORTH 17 - ORIGINAL WELLBORE - PROPOS/	4,802.2	4,845.7	62.7	22.7	1.568	CC
WAKE NORTH 18 - ORIGINAL WELLBORE - PROPOS/	4,584.7	4,646.8	10.3	-28.4	0.266	Level 1, CC, ES, SF
WAKE NORTH 19 - ORIGINAL WELLBORE - PROPOS/	4,357.2	4,440.0	43.3	5.6	1.147	Level 2, CC, ES, SF
WAKE NORTH 2 - ORIGINAL WELLBORE - PROPOS/	164.5	170.5	1,827.9	1,827.4	3,712.026	CC
WAKE NORTH 2 - ORIGINAL WELLBORE - PROPOS/	7,450.0	6,932.4	1,857.8	1,772.0	21.669	ES
WAKE NORTH 2 - ORIGINAL WELLBORE - PROPOS/	8,500.0	7,100.0	2,159.6	2,053.7	20.386	SF
WAKE NORTH 20 - ORIGINAL WELLBORE - PROPOS/	4,178.7	4,277.3	42.8	5.9	1.160	Level 2, CC, ES, SF
WAKE NORTH 21 - ORIGINAL WELLBORE - PROPOS/	3,924.8	4,054.5	0.2	-35.3	0.005	Level 1, CC, ES, SF
WAKE NORTH 22 - ORIGINAL WELLBORE - PROPOS/	3,735.0	3,886.8	33.2	-1.7	0.951	Level 1, CC, ES, SF
WAKE NORTH 23 - ORIGINAL WELLBORE - PROPOS/	3,540.4	3,717.0	33.0	-1.1	0.968	Level 1, CC, ES, SF
WAKE NORTH 24 - ORIGINAL WELLBORE - PROPOS/	3,428.7	3,613.1	17.0	-16.3	0.511	Level 1, CC, ES, SF
WAKE NORTH 3 - ORIGINAL WELLBORE - PROPOS/	7,422.3	6,974.9	1,666.2	1,580.1	19.344	CC
WAKE NORTH 3 - ORIGINAL WELLBORE - PROPOS/	7,500.0	7,040.5	1,667.3	1,579.0	18.897	ES
WAKE NORTH 3 - ORIGINAL WELLBORE - PROPOS/	8,200.0	7,175.6	1,842.4	1,742.7	18.492	SF
WAKE NORTH 4 - ORIGINAL WELLBORE - PROPOS/	7,452.9	7,003.7	1,572.0	1,485.9	18.262	CC
WAKE NORTH 4 - ORIGINAL WELLBORE - PROPOS/	7,500.0	7,028.7	1,572.6	1,485.5	18.041	ES
WAKE NORTH 4 - ORIGINAL WELLBORE - PROPOS/	7,650.0	7,077.6	1,584.5	1,495.3	17.758	SF
WAKE NORTH 5 - ORIGINAL WELLBORE - PROPOS/	7,471.9	7,085.9	1,282.1	1,194.6	14.651	CC
WAKE NORTH 5 - ORIGINAL WELLBORE - PROPOS/	7,500.0	7,095.4	1,282.4	1,194.4	14.563	ES
WAKE NORTH 5 - ORIGINAL WELLBORE - PROPOS/	7,600.0	7,116.8	1,289.5	1,200.2	14.449	SF
WAKE NORTH 6 - ORIGINAL WELLBORE - PROPOS/	7,497.0	7,154.0	1,088.7	999.5	12.205	CC
WAKE NORTH 6 - ORIGINAL WELLBORE - PROPOS/	7,500.0	7,155.2	1,088.7	999.4	12.197	ES
WAKE NORTH 6 - ORIGINAL WELLBORE - PROPOS/	7,600.0	7,186.2	1,094.3	1,003.6	12.064	SF
WAKE NORTH 7 - ORIGINAL WELLBORE - PROPOS/	7,451.7	7,150.0	980.4	892.5	11.152	CC, ES
WAKE NORTH 7 - ORIGINAL WELLBORE - PROPOS/	7,550.0	7,163.0	986.3	897.2	11.080	SF
WAKE NORTH 8 - ORIGINAL WELLBORE - PROPOS/	7,412.8	7,196.4	683.8	595.5	7.746	CC, ES
WAKE NORTH 8 - ORIGINAL WELLBORE - PROPOS/	7,450.0	7,200.0	684.8	596.0	7.715	SF
WAKE NORTH 9 - ORIGINAL WELLBORE - PROPOS/	7,456.4	7,256.2	487.5	397.2	5.400	CC, ES
WAKE NORTH 9 - ORIGINAL WELLBORE - PROPOS/	7,500.0	7,264.8	489.7	398.6	5.378	SF

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Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

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
SW SE SEC. 32 T6N R65W 6th P.M.						
ABDN VERT DAVIS #1 - Wellbore #1 - Design #1	9,392.2	6,950.0	2,337.1	2,114.4	10.495	CC
ABDN VERT DAVIS #1 - Wellbore #1 - Design #1	9,500.0	6,950.0	2,339.6	2,114.0	10.373	ES
ABDN VERT DAVIS #1 - Wellbore #1 - Design #1	10,100.0	6,950.0	2,441.9	2,200.3	10.104	SF
ABDN VERT HOSHIKO 6-33 - Wellbore #1 - Design #1	9,484.6	6,959.0	122.9	-102.3	0.546	Level 1, CC, ES, SF
ABDN VERT KOEHLER #1 - Wellbore #1 - Design #1	12,152.2	6,949.0	2,404.1	2,106.0	8.066	CC
ABDN VERT KOEHLER #1 - Wellbore #1 - Design #1	12,200.0	6,949.0	2,404.6	2,105.2	8.032	ES
ABDN VERT KOEHLER #1 - Wellbore #1 - Design #1	12,700.0	6,949.0	2,465.7	2,152.4	7.871	SF
ABDN VERT MT BICKLING 1-34 (NOBLE) - Wellbore #1	14,613.1	6,948.0	1,565.3	1,198.7	4.270	CC
ABDN VERT MT BICKLING 1-34 (NOBLE) - Wellbore #1	14,700.0	6,948.0	1,567.7	1,198.7	4.248	ES
ABDN VERT MT BICKLING 1-34 (NOBLE) - Wellbore #1	14,800.0	6,948.0	1,576.4	1,204.6	4.239	SF
EXIST DD KOEHLER E 33-09D (NOBLE) - Wellbore #1	12,049.2	7,193.4	1,069.1	895.7	6.164	CC
EXIST DD KOEHLER E 33-09D (NOBLE) - Wellbore #1	12,100.0	7,193.1	1,070.3	895.5	6.122	ES
EXIST DD KOEHLER E 33-09D (NOBLE) - Wellbore #1	12,200.0	7,192.6	1,079.7	902.1	6.079	SF
EXIST DD KOEHLER E 33-23D (NOBLE) - Wellbore #1	11,408.4	7,117.2	1,748.5	1,592.6	11.220	CC
EXIST DD KOEHLER E 33-23D (NOBLE) - Wellbore #1	11,500.0	7,115.9	1,750.9	1,592.5	11.056	ES
EXIST DD KOEHLER E 33-23D (NOBLE) - Wellbore #1	12,000.0	7,108.5	1,845.8	1,673.7	10.721	SF
EXIST DD KOEHLER E 34-32D (NOBLE) - Wellbore #1	12,788.2	7,372.3	545.7	345.4	2.724	CC
EXIST DD KOEHLER E 34-32D (NOBLE) - Wellbore #1	12,800.0	7,373.0	545.8	345.2	2.720	ES, SF
EXIST DD KOEHLER E 34-33D (NOBLE) - Wellbore #1	12,825.4	7,192.8	1,607.4	1,407.5	8.040	CC
EXIST DD KOEHLER E 34-33D (NOBLE) - Wellbore #1	12,900.0	7,196.6	1,609.2	1,407.2	7.966	ES
EXIST DD KOEHLER E 34-33D (NOBLE) - Wellbore #1	13,200.0	7,212.1	1,650.4	1,440.0	7.846	SF
EXIST HZ HEALY E34-69HN (NOBLE) - Wellbore #1 - V	15,772.4	13,770.0	2,127.3	1,668.8	4.641	CC
EXIST HZ HEALY E34-69HN (NOBLE) - Wellbore #1 - V	15,800.0	13,770.0	2,127.4	1,668.3	4.633	ES
EXIST HZ HEALY E34-69HN (NOBLE) - Wellbore #1 - V	16,000.0	13,637.3	2,133.8	1,672.7	4.628	SF
EXIST HZ LDS E35-79HC (NOBLE) - Wellbore #1 - Well	17,500.9	8,917.3	410.9	136.9	1.499	Level 3, CC, ES, SF
EXIST VERT BLISS 10-33 - Wellbore #1 - Design #1	10,832.2	6,956.0	1,028.6	766.9	3.930	CC, ES
EXIST VERT BLISS 10-33 - Wellbore #1 - Design #1	10,900.0	6,956.0	1,030.9	767.3	3.911	SF
EXIST VERT BLISS 13-34 (NOBLE) - Wellbore #1 - Wel	13,388.3	6,950.0	2,244.3	2,049.3	11.512	CC
EXIST VERT BLISS 13-34 (NOBLE) - Wellbore #1 - Wel	13,500.0	6,950.0	2,247.1	2,049.0	11.345	ES
EXIST VERT BLISS 13-34 (NOBLE) - Wellbore #1 - Wel	14,100.0	6,950.0	2,354.4	2,139.6	10.960	SF
EXIST VERT BLISS 15-33 (NOBLE) - Wellbore #1 - Wel	10,833.4	7,009.0	2,383.4	2,259.1	19.174	CC
EXIST VERT BLISS 15-33 (NOBLE) - Wellbore #1 - Wel	10,900.0	7,008.8	2,384.4	2,258.2	18.904	ES
EXIST VERT BLISS 15-33 (NOBLE) - Wellbore #1 - Wel	12,100.0	7,000.0	2,699.1	2,539.8	16.951	SF
EXIST VERT FLOS E34-6 (NOBLE) - Wellbore #1 - Well	14,655.4	6,950.0	120.2	-110.2	0.522	Level 1, CC, ES, SF
EXIST VERT HOSHIKO #1 - Wellbore #1 - Design #1	15,840.9	6,954.0	249.6	-151.4	0.622	Level 1, CC, ES, SF
EXIST VERT HOSHIKO 1-33 - Wellbore #1 - Design #1	12,094.4	6,962.0	1,420.0	1,123.4	4.788	CC
EXIST VERT HOSHIKO 1-33 - Wellbore #1 - Design #1	12,100.0	6,962.0	1,420.0	1,123.3	4.785	ES
EXIST VERT HOSHIKO 1-33 - Wellbore #1 - Design #1	12,300.0	6,962.0	1,434.8	1,132.5	4.746	SF
EXIST VERT HOSHIKO 2-33 - Wellbore #1 - Design #1	10,650.1	6,964.0	1,562.1	1,305.3	6.083	CC
EXIST VERT HOSHIKO 2-33 - Wellbore #1 - Design #1	10,700.0	6,964.0	1,562.9	1,304.7	6.054	ES
EXIST VERT HOSHIKO 2-33 - Wellbore #1 - Design #1	10,900.0	6,964.0	1,581.9	1,318.3	6.000	SF
EXIST VERT HOSHIKO 31-34 - Wellbore #1 - Design #1	15,931.7	6,959.0	1,426.5	1,022.8	3.534	CC
EXIST VERT HOSHIKO 31-34 - Wellbore #1 - Design #1	16,000.0	6,959.0	1,428.1	1,022.5	3.521	ES
EXIST VERT HOSHIKO 31-34 - Wellbore #1 - Design #1	16,100.0	6,959.0	1,436.4	1,028.0	3.517	SF
EXIST VERT HOSHIKO 3-33 (NOBLE) - Wellbore #1 - D	9,433.7	6,969.0	1,480.1	1,256.1	6.608	CC
EXIST VERT HOSHIKO 3-33 (NOBLE) - Wellbore #1 - D	9,500.0	6,969.0	1,481.6	1,255.8	6.563	ES
EXIST VERT HOSHIKO 3-33 (NOBLE) - Wellbore #1 - D	9,700.0	6,969.0	1,503.9	1,272.8	6.508	SF
EXIST VERT HOSHIKO 8-33 - Wellbore #1 - Design #1	12,161.7	6,955.0	91.8	-206.6	0.308	Level 1, CC, ES, SF
EXIST VERT HUNGENBERG 7-33 - Wellbore #1 - Desig	10,546.7	6,960.0	412.5	158.6	1.624	CC, ES, SF
EXIST VERT MININGER 1 - Wellbore #1 - Design #1	15,944.7	7,044.0	2,389.7	1,985.8	5.917	CC
EXIST VERT MININGER 1 - Wellbore #1 - Design #1	16,000.0	7,044.0	2,390.3	1,984.9	5.896	ES
EXIST VERT MININGER 1 - Wellbore #1 - Design #1	16,300.0	7,044.0	2,415.9	2,002.1	5.838	SF
EXIST VERT MININGER 33-34 - Wellbore #1 - Design #	15,915.6	6,948.0	1,045.6	642.5	2.594	CC, ES

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Summary

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SW SE SEC. 32 T6N R65W 6th P.M.						
EXIST VERT MININGER 33-34 - Wellbore #1 - Design #	16,000.0	6,948.0	1,049.0	643.5	2.587	SF
EXIST VERT MININGER-BICKLING #1 - Wellbore #1 - C	14,725.7	6,943.0	2,433.0	2,063.3	6.581	CC
EXIST VERT MININGER-BICKLING #1 - Wellbore #1 - C	14,800.0	6,943.0	2,434.1	2,062.3	6.547	ES
EXIST VERT MININGER-BICKLING #1 - Wellbore #1 - C	15,200.0	6,943.0	2,478.8	2,095.8	6.472	SF
EXIST VERT SINGER E 34-1 (NOBLE) - Wellbore #1 - C	17,419.9	6,954.0	1,461.2	1,015.8	3.281	CC
EXIST VERT SINGER E 34-1 (NOBLE) - Wellbore #1 - C	17,500.0	6,954.0	1,463.4	1,015.8	3.270	ES
EXIST VERT SINGER E 34-1 (NOBLE) - Wellbore #1 - C	17,500.9	6,954.0	1,463.4	1,015.8	3.269	SF
EXIST VERT SINGER E 34-16 (NOBLE) - Wellbore #1 -	17,500.9	6,850.0	2,507.3	2,197.5	8.094	CC, ES, SF
EXIST VERT SINGER E 34-8 (NOBLE) - Wellbore #1 - C	17,482.2	6,947.0	141.5	-305.5	0.317	Level 1, CC, ES, SF
EXIST VERT SINGER E 34-9 (NOBLE) - Wellbore #1 - C	17,500.9	6,948.0	1,144.0	696.4	2.556	CC, ES, SF
EXIST VERT UHRICH E 34-4 (NOBLE) - Wellbore #1 - C	13,208.7	6,958.0	1,574.4	1,246.9	4.807	CC, ES
EXIST VERT UHRICH E 34-4 (NOBLE) - Wellbore #1 - C	13,400.0	6,958.0	1,586.0	1,253.2	4.765	SF
EXIST VERT UHRICH E 34-5 (NOBLE) - Wellbore #1 - C	13,524.9	6,954.0	239.7	-96.6	0.713	Level 1, CC, ES, SF
EXIST VERT WINTERS 12-34 - Wellbore #1 - Design #1	13,521.7	6,950.0	944.4	608.2	2.809	CC, ES
EXIST VERT WINTERS 12-34 - Wellbore #1 - Design #1	13,600.0	6,950.0	947.6	609.2	2.801	SF
WAKE EAST 11N - ORIGINAL WELLBORE - PROPOSAL	1,200.0	1,199.0	16.7	11.6	3.255	CC
WAKE EAST 11N - ORIGINAL WELLBORE - PROPOSAL	17,500.9	17,361.7	331.2	-285.3	0.537	Level 1, ES, SF
WAKE EAST 12C - ORIGINAL WELLBORE - PROPOSAL	1,100.0	1,099.0	36.4	31.7	7.768	CC
WAKE EAST 12C - ORIGINAL WELLBORE - PROPOSAL	17,500.9	17,460.3	527.1	-56.5	0.903	Level 1, ES, SF
WAKE EAST 13N - ORIGINAL WELLBORE - PROPOSAL	1,000.0	999.0	53.0	48.8	12.526	CC
WAKE EAST 13N - ORIGINAL WELLBORE - PROPOSAL	17,500.9	17,235.3	658.9	43.4	1.070	Level 2, ES, SF
WAKE EAST 14N - ORIGINAL WELLBORE - PROPOSAL	900.0	898.0	69.7	65.9	18.433	CC, ES
WAKE EAST 14N - ORIGINAL WELLBORE - PROPOSAL	17,500.9	17,143.2	990.2	375.1	1.610	SF
WAKE EAST 15C - ORIGINAL WELLBORE - PROPOSAL	800.0	798.0	89.2	85.8	26.763	CC, ES
WAKE EAST 15C - ORIGINAL WELLBORE - PROPOSAL	17,500.9	17,275.4	1,168.3	559.8	1.920	SF
WAKE EAST 16N - ORIGINAL WELLBORE - PROPOSAL	700.0	698.0	105.8	103.0	36.731	CC, ES
WAKE EAST 16N - ORIGINAL WELLBORE - PROPOSAL	17,500.9	17,066.2	1,321.5	707.3	2.152	SF
WAKE EAST 17N - ORIGINAL WELLBORE - PROPOSAL	600.0	597.0	125.3	122.9	51.576	CC, ES
WAKE EAST 17N - ORIGINAL WELLBORE - PROPOSAL	17,500.9	17,016.3	1,649.1	1,035.4	2.687	SF
WAKE EAST 18C - ORIGINAL WELLBORE - PROPOSAL	200.0	197.0	197.7	197.0	312.971	CC, ES
WAKE EAST 18C - ORIGINAL WELLBORE - PROPOSAL	17,500.9	17,153.1	1,825.7	1,216.3	2.996	SF
WAKE EAST 19N - ORIGINAL WELLBORE - PROPOSAL	100.0	97.0	214.4	214.2	1,152.698	CC, ES
WAKE EAST 19N - ORIGINAL WELLBORE - PROPOSAL	17,500.9	16,961.4	1,980.3	1,368.8	3.238	SF
WAKE EAST 1N - ORIGINAL WELLBORE - PROPOSAL	1,300.0	1,296.0	164.2	158.7	29.463	CC, ES
WAKE EAST 1N - ORIGINAL WELLBORE - PROPOSAL	17,500.9	18,782.5	1,981.9	1,364.1	3.208	SF
WAKE EAST 20N - ORIGINAL WELLBORE - PROPOSAL	300.0	297.0	178.2	177.1	164.818	CC, ES
WAKE EAST 20N - ORIGINAL WELLBORE - PROPOSAL	17,500.9	16,966.1	2,311.6	1,699.4	3.776	SF
WAKE EAST 21C - ORIGINAL WELLBORE - PROPOSAL	400.0	398.0	161.5	160.0	105.349	CC, ES
WAKE EAST 21C - ORIGINAL WELLBORE - PROPOSAL	17,500.9	17,152.3	2,482.2	1,870.9	4.061	SF
WAKE EAST 22N - ORIGINAL WELLBORE - PROPOSAL	500.0	497.0	142.0	140.0	71.716	CC, ES
WAKE EAST 22N - ORIGINAL WELLBORE - PROPOSAL	17,500.9	16,993.2	2,639.3	2,026.2	4.305	SF
WAKE EAST 2N - ORIGINAL WELLBORE - PROPOSAL	1,300.0	1,297.0	144.7	139.2	25.957	CC, ES
WAKE EAST 2N - ORIGINAL WELLBORE - PROPOSAL	17,500.9	18,521.4	1,650.4	1,032.5	2.671	SF
WAKE EAST 3C - ORIGINAL WELLBORE - PROPOSAL	1,300.0	1,298.0	128.0	122.5	22.953	CC, ES
WAKE EAST 3C - ORIGINAL WELLBORE - PROPOSAL	17,500.9	18,582.7	1,497.5	885.2	2.446	SF
WAKE EAST 4N - ORIGINAL WELLBORE - PROPOSAL	1,300.0	1,299.0	108.6	103.0	19.452	CC, ES
WAKE EAST 4N - ORIGINAL WELLBORE - PROPOSAL	17,500.9	18,316.6	1,318.8	701.1	2.135	SF
WAKE EAST 5N - ORIGINAL WELLBORE - PROPOSAL	1,300.0	1,299.0	91.9	86.3	16.459	CC, ES
WAKE EAST 5N - ORIGINAL WELLBORE - PROPOSAL	17,500.9	18,083.0	991.0	373.2	1.604	SF
WAKE EAST 6C - ORIGINAL WELLBORE - PROPOSAL	1,300.0	1,299.0	72.4	66.8	12.968	CC, ES
WAKE EAST 6C - ORIGINAL WELLBORE - PROPOSAL	17,500.9	18,107.9	843.0	240.9	1.400	Level 3, SF
WAKE EAST 7N - ORIGINAL WELLBORE - PROPOSAL	1,300.0	1,299.0	55.7	50.1	9.975	CC
WAKE EAST 7N - ORIGINAL WELLBORE - PROPOSAL	17,500.0	17,855.3	659.4	42.0	1.068	Level 2, ES, SF

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

Anticollision Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well WAKE EAST 10N
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4660.0usft (Original Well Elev)
Reference Site:	SW SE SEC. 32 T6N R65W 6th P.M.	MD Reference:	KB-EST @ 4660.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	WAKE EAST 10N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

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						
SW SE SEC. 32 T6N R65W 6th P.M.						
WAKE EAST 8N - ORIGINAL WELLBORE - PROPOSAL	1,300.0	1,300.0	36.2	30.6	6.481	CC
WAKE EAST 8N - ORIGINAL WELLBORE - PROPOSAL	17,500.0	17,675.0	327.9	-289.6	0.531	Level 1, ES, SF
WAKE EAST 9C - ORIGINAL WELLBORE - PROPOSAL	1,300.0	1,300.0	19.5	13.9	3.490	CC
WAKE EAST 9C - ORIGINAL WELLBORE - PROPOSAL	17,500.0	17,741.2	243.4	-183.4	0.570	Level 1, ES, SF

Offset Design NW SE SEC. 32 T6N R65W 6th P.M. - EXIST DD THERMO #5-5-32 - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 usft	
Survey Program: 549-MWD												Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	0.0	0.0	-117.96	-142.4	-268.3	303.8				
100.0	100.0	95.9	95.9	0.1	0.1	-117.93	-142.3	-268.4	303.8	303.6	0.20	1,504.341	
200.0	200.0	195.7	195.7	0.3	0.2	-117.84	-141.9	-268.7	303.9	303.4	0.54	564.039	
300.0	300.0	295.6	295.6	0.5	0.3	-117.68	-141.2	-269.2	304.0	303.1	0.88	347.200	
400.0	400.0	395.4	395.4	0.8	0.4	-117.45	-140.2	-269.9	304.2	303.0	1.21	250.880	
500.0	500.0	495.3	495.3	1.0	0.6	-117.16	-138.9	-270.8	304.4	302.8	1.55	196.477	
600.0	600.0	594.7	594.7	1.2	0.7	-116.82	-137.4	-271.9	304.7	302.7	1.93	157.747	
700.0	700.0	695.8	695.7	1.4	0.9	-116.39	-135.6	-273.3	305.1	302.7	2.37	128.591	
800.0	800.0	802.9	802.7	1.7	1.2	-115.41	-130.5	-274.8	304.3	301.5	2.84	107.175	
900.0	900.0	908.0	907.4	1.9	1.4	-113.76	-121.3	-275.4	301.1	297.8	3.32	90.820	
1,000.0	1,000.0	1,007.1	1,005.8	2.1	1.7	-111.66	-109.8	-276.3	297.5	293.7	3.79	78.491	
1,100.0	1,100.0	1,108.1	1,105.7	2.3	2.0	-108.91	-95.3	-278.2	294.2	289.9	4.29	68.565	
1,200.0	1,200.0	1,215.8	1,211.6	2.6	2.4	-105.19	-75.8	-279.0	289.5	284.6	4.84	59.786	
1,300.0	1,300.0	1,312.3	1,306.0	2.8	2.8	-101.16	-55.1	-279.5	285.0	279.6	5.40	52.808	
1,378.1	1,378.1	1,388.3	1,379.7	3.0	3.1	-136.38	-37.0	-280.4	283.7	277.6	6.06	46.837	CC
1,400.0	1,400.0	1,409.3	1,400.0	3.0	3.2	-135.40	-31.8	-280.7	283.8	277.6	6.20	45.744	ES
1,500.0	1,499.8	1,505.3	1,492.7	3.2	3.7	-131.05	-6.9	-282.5	287.2	280.3	6.88	41.749	
1,600.0	1,599.5	1,601.5	1,585.1	3.5	4.2	-126.90	19.8	-284.9	295.0	287.4	7.58	38.922	
1,600.6	1,600.0	1,602.0	1,585.6	3.5	4.2	-126.88	20.0	-284.9	295.1	287.5	7.58	38.909	
1,700.0	1,698.9	1,697.8	1,677.3	3.7	4.7	-123.14	47.6	-287.6	305.6	297.3	8.29	36.855	
1,700.6	1,699.5	1,698.4	1,677.8	3.7	4.7	-123.12	47.8	-287.6	305.7	297.4	8.30	36.845	
1,800.0	1,798.2	1,794.8	1,770.2	3.9	5.1	-119.69	75.5	-290.6	318.8	309.8	8.97	35.559	
1,900.0	1,896.9	1,893.2	1,864.6	4.2	5.6	-117.07	102.8	-293.7	334.3	324.6	9.63	34.712	
2,000.0	1,995.1	1,992.7	1,960.2	4.5	6.1	-115.16	130.3	-296.8	351.6	341.3	10.34	34.000	
2,100.0	2,092.5	2,088.2	2,051.7	4.9	6.6	-113.70	157.8	-299.2	370.3	359.2	11.11	33.332	
2,200.0	2,189.1	2,180.9	2,140.1	5.3	7.1	-112.68	185.4	-302.6	391.8	379.9	11.92	32.879	
2,300.0	2,284.7	2,283.0	2,237.8	5.7	7.7	-112.32	214.4	-307.1	415.0	402.2	12.79	32.447	
2,400.0	2,379.3	2,380.8	2,331.8	6.2	8.2	-112.47	241.3	-310.2	438.2	424.5	13.70	31.985	
2,500.0	2,472.6	2,480.1	2,426.7	6.8	8.7	-112.72	270.5	-313.1	462.8	448.1	14.71	31.459	
2,600.0	2,564.7	2,584.4	2,526.0	7.4	9.3	-113.15	302.4	-314.5	487.7	471.8	15.81	30.840	
2,700.0	2,655.3	2,678.3	2,615.2	8.1	9.8	-113.67	331.5	-315.0	513.3	496.4	16.93	30.320	
2,780.3	2,727.0	2,751.9	2,684.9	8.7	10.3	-114.12	355.3	-315.6	535.5	517.6	17.88	29.944	
2,800.0	2,744.4	2,769.9	2,701.9	8.9	10.4	-114.34	361.2	-315.8	541.1	523.0	18.13	29.847	
2,900.0	2,833.0	2,862.6	2,789.7	9.7	10.9	-115.51	390.7	-317.3	570.1	550.8	19.36	29.445	
3,000.0	2,921.6	2,954.2	2,877.1	10.5	11.4	-116.72	418.5	-319.5	599.8	579.3	20.56	29.172	
3,100.0	3,010.3	3,047.2	2,965.7	11.4	12.0	-117.87	446.3	-322.1	630.1	608.4	21.77	28.947	
3,200.0	3,098.9	3,143.0	3,057.4	12.2	12.5	-119.05	473.9	-324.9	660.7	637.7	22.96	28.772	
3,300.0	3,187.5	3,229.7	3,140.6	13.1	12.9	-120.11	498.1	-328.0	691.9	667.8	24.11	28.696	
3,400.0	3,276.1	3,323.7	3,230.8	14.0	13.4	-121.18	524.1	-331.8	723.9	698.6	25.28	28.634	

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