Crestone Peak Resources

Sec 10 T1N-R65W
Warner Pad
WARNER 2G-10H-E165

Wellbore #1
Plan #3 27Sep18 kjs

Anticollision Summary Report

28 September, 2018

CRESTONE PEAK RESOURCES

Anticollision Summary Report

Company:	Crestone Peak Resources	**Local Co-ordinate Reference:**	Well WARNER 2G-10H-E165
Project:	Sec 10 T1N-R65W	**TVD Reference:**	WELL @ 4994.00usft (Original Well Elev)
Reference Site:	Warner Pad	**MD Reference:**	WELL @ 4994.00usft (Original Well Elev)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	WARNER 2G-10H-E165	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Single User Db
Reference Design:	Plan #3 27Sep18 kjs	**Offset TVD Reference:**	Offset Datum

Reference	Plan #3 27Sep18 kjs		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 9/28/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	14,882.63	Plan #3 27Sep18 kjs (Wellbore #1)	MWD	OWSG MWD - Standard

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
Existing Wells (Warner Pad)						
CHAPIN 43-4 - CPR - Gyro	11,981.44	7,281.36	2,106.94	1,999.62	19.634	CC
CHAPIN 43-4 - CPR - Gyro	12,000.00	7,281.58	2,107.02	1,999.52	19.600	ES
CHAPIN 43-4 - CPR - Gyro	12,200.00	7,283.95	2,118.24	2,009.06	19.401	SF
CHAPIN 44-4 - CPR - Gyro	10,743.90	7,301.21	2,366.75	2,279.35	27.079	CC, ES
CHAPIN 44-4 - CPR - Gyro	11,200.00	7,305.00	2,410.29	2,318.98	26.396	SF
COLFER 13C-34HZ - KMG - MWD	14,882.63	11,790.00	1,239.54	1,085.78	8.061	CC, ES, SF
COLFER 13N-34HZ - KMG - MWD	14,882.63	11,496.00	1,543.98	1,365.87	8.669	CC, ES, SF
COLFER 14C-34HZX - KMG - MWD	14,882.63	11,779.00	1,110.75	997.85	9.839	CC, ES, SF
COLFER 14N-34HZ - KMG - MWD	14,882.63	11,568.00	1,018.40	945.64	13.996	CC, ES, SF
COLFER 35N-34HZ - KMG - MWD	14,882.63	11,687.00	1,065.48	949.03	9.149	CC, ES, SF
COLFER 36N-34HZ - KMG - MWD	14,882.63	11,617.00	1,365.43	1,212.47	8.927	CC, ES, SF
HDI KF 03-231HN - VERDAD - Proposal	6,991.19	6,845.89	3,514.78	3,464.14	69.403	CC
HDI KF 03-231HN - VERDAD - Proposal	7,000.00	6,854.04	3,514.81	3,464.12	69.327	ES
HDI KF 03-231HN - VERDAD - Proposal	7,600.00	7,266.13	3,662.82	3,608.25	67.122	SF
HDI KF 03-232HC - VERDAD - Proposed	6,993.26	6,847.81	3,540.51	3,489.85	69.892	CC
HDI KF 03-232HC - VERDAD - Proposed	7,000.00	6,854.04	3,540.52	3,489.82	69.834	ES
HDI KF 03-232HC - VERDAD - Proposed	7,600.00	7,266.13	3,686.80	3,632.25	67.587	SF
HDI KF 03-232HN - VERDAD - Proposal	6,992.23	6,846.85	3,527.64	3,476.99	69.648	CC
HDI KF 03-232HN - VERDAD - Proposal	7,000.00	6,854.04	3,527.66	3,476.96	69.580	ES
HDI KF 03-232HN - VERDAD - Proposal	7,600.00	7,266.13	3,674.80	3,620.24	67.354	SF
HDI KF 10-1H - VERDAD - Proposal	6,969.73	6,825.91	3,596.29	3,545.78	71.187	CC, ES
HDI KF 10-1H - VERDAD - Proposal	7,600.00	7,266.13	3,761.47	3,706.71	68.688	SF
HDI KF 10-3H - VERDAD - Proposal	6,971.68	6,827.73	3,621.58	3,571.05	71.673	CC, ES
HDI KF 10-3H - VERDAD - Proposal	7,600.00	7,266.13	3,784.92	3,730.18	69.146	SF
JOKER 1N3-9HZ - KMG - MWD	6,775.38	9,597.60	2,119.67	2,043.48	27.820	CC
JOKER 1N3-9HZ - KMG - MWD	6,800.00	9,597.87	2,119.80	2,043.45	27.763	ES
JOKER 1N3-9HZ - KMG - MWD	9,800.00	11,936.00	2,284.24	2,154.06	17.547	SF
JOKER 26N1-9HZ - KMG - MWD	6,915.47	9,647.33	2,039.83	1,963.68	26.787	CC, ES
JOKER 26N1-9HZ - KMG - MWD	9,900.00	12,052.00	2,181.76	2,050.31	16.597	SF
JOKER 26N2-9HZ - KMG - MWD	6,870.21	9,432.11	1,835.05	1,760.50	24.616	CC, ES
JOKER 26N2-9HZ - KMG - MWD	9,700.00	11,975.00	1,932.66	1,802.81	14.884	SF
OLIN 41-4 - CPR - MWD	14,690.28	7,557.34	2,352.56	2,199.31	15.352	CC
OLIN 41-4 - CPR - MWD	14,700.00	7,557.62	2,352.58	2,199.24	15.343	ES
OLIN 41-4 - CPR - MWD	14,882.63	7,562.66	2,360.17	2,205.47	15.257	SF
OLIN 42-4A - CPR - MWD	13,401.56	7,599.75	2,378.21	2,241.84	17.440	CC, ES
OLIN 42-4A - CPR - MWD	13,700.00	7,590.74	2,396.83	2,256.91	17.129	SF
OTTESEN 1 - VERDAD - Gyro	11,699.84	7,280.79	764.42	661.80	7.449	CC, ES, SF

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

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Project:	Sec 10 T1N-R65W	**TVD Reference:**	WELL @ 4994.00usft (Original Well Elev)
Reference Site:	Warner Pad	**MD Reference:**	WELL @ 4994.00usft (Original Well Elev)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	WARNER 2G-10H-E165	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Single User Db
Reference Design:	Plan #3 27Sep18 kjs	**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
Existing Wells (Warner Pad)						
RANDLE RED XX 3-2D - KMG - Gyro	13,900.00	7,264.23	139.51	-3.84	0.973	Level 3, ES, SF
RANDLE RED XX 3-2D - KMG - Gyro	13,908.40	7,264.70	139.26	-3.81	0.973	Level 3, CC
RANDLE RED XX 3-4D - KMG - Gyro	14,882.63	7,267.46	1,279.62	1,122.54	8.146	CC, ES, SF
ROCKY 38N-33HZ - KMG - Proposal	14,882.63	13,373.00	2,270.02	2,056.42	10.627	CC, ES, SF
RUEGGE 3Q-4H-N165 - CPR - MWD	10,703.15	8,060.00	1,931.16	1,841.69	21.585	CC
RUEGGE 3Q-4H-N165 - CPR - MWD	14,882.63	12,247.46	1,937.67	1,726.56	9.179	ES, SF
RUEGGE 3R-4H-N165 - CPR - MWD	12,637.04	10,390.99	1,906.95	1,762.62	13.212	CC
RUEGGE 3R-4H-N165 - CPR - MWD	14,882.63	12,649.07	1,921.23	1,704.51	8.865	ES, SF
SPARBOE 7C-3HZ - KMG - MWD	14,424.04	13,269.00	1,264.26	1,030.78	5.415	CC
SPARBOE 7C-3HZ - KMG - MWD	14,500.00	13,197.56	1,264.39	1,030.75	5.412	ES
SPARBOE 7C-3HZ - KMG - MWD	14,700.00	13,004.98	1,265.04	1,031.13	5.408	SF
Warner Pad						
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	199.00	59.90	58.91	60.538	CC
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	298.86	60.08	58.39	35.542	ES
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,882.63	14,622.68	1,456.14	1,193.70	5.548	SF
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	200.00	199.00	69.97	68.98	70.721	CC
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	300.00	298.16	70.65	68.96	41.879	ES
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	14,882.63	14,442.83	1,709.44	1,450.40	6.599	SF
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	299.23	50.03	48.34	29.555	CC, ES
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,882.63	14,542.58	1,238.92	979.58	4.777	SF
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	314.24	313.71	39.82	38.03	22.207	CC
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	400.00	399.97	40.37	37.99	16.960	ES
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	14,882.63	14,769.94	954.64	691.17	3.623	SF
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	306.86	307.14	29.87	28.13	17.088	CC
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	400.00	400.83	30.31	27.93	12.713	ES
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,882.63	14,656.93	816.84	557.51	3.150	SF
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	19.87	18.88	20.012	CC
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	400.00	400.62	20.27	17.89	8.498	ES
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,882.63	14,585.64	592.06	346.97	2.416	SF
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	603.95	604.85	9.24	5.39	2.399	CC
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	900.00	901.43	10.24	3.94	1.625	ES
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,882.63	14,732.12	212.48	4.36	1.021	Level 3, SF
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	257.58	257.58	9.95	8.55	7.088	CC
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,882.63	14,762.09	172.17	-19.91	0.896	Level 2, ES, SF
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	19.87	18.88	20.012	CC
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	300.00	299.68	20.17	18.47	11.865	ES
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,882.63	14,842.36	504.90	246.22	1.952	SF
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	29.95	28.95	30.159	CC
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	300.00	299.31	30.64	28.94	18.044	ES
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,882.63	14,823.77	752.81	494.56	2.915	SF
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	40.02	39.03	40.307	CC, ES
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,882.63	15,184.65	824.90	560.81	3.124	SF
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	50.10	49.11	50.454	CC, ES
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,882.63	14,779.75	974.15	717.50	3.796	SF

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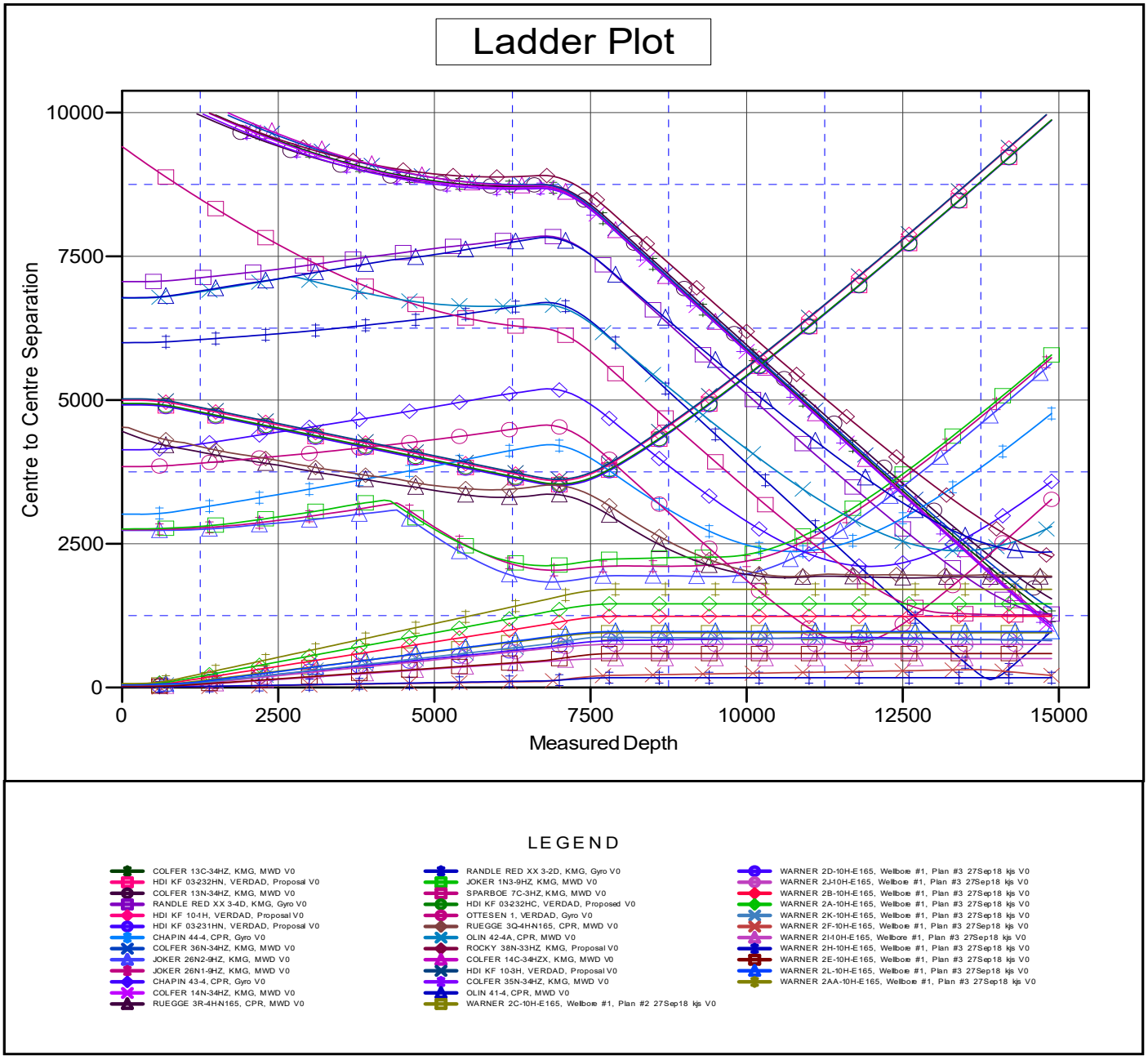
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	WARNER 2G-10H-E165	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Single User Db
Reference Design:	Plan #3 27Sep18 kjs	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4994.00usft (Original Well E	Coordinates are relative to: WARNER 2G-10H-E165
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000	Grid Convergence at Surface is: 0.54°



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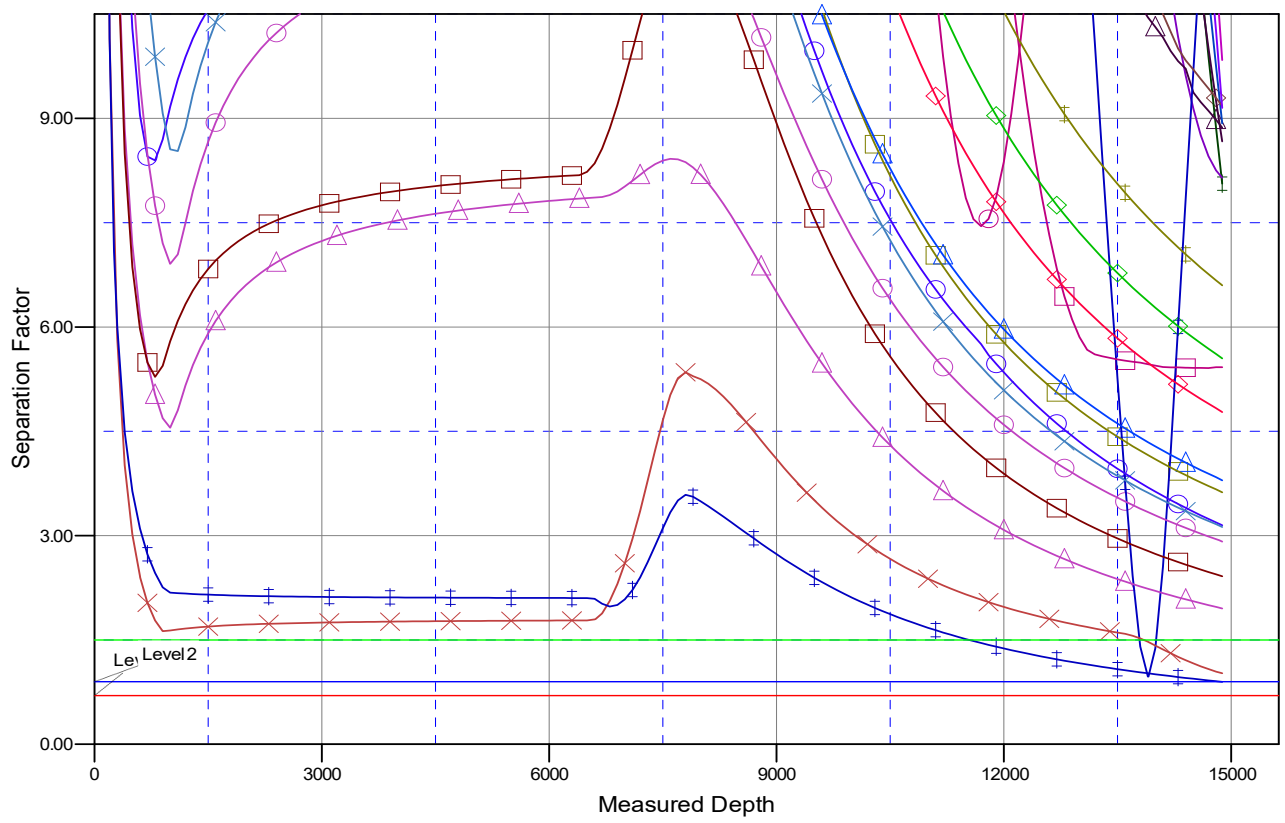
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: WARNER 2G-10H-E165
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.54°

Separation Factor Plot



LEGEND

COLFER 13C-34HZ, KMG, MWD V0
HDI KF 03-232HN, VERDAD, Proposal V0
COLFER 13N-34HZ, KMG, MWD V0
RANDLE RED XX 3-4D, KMG, Gyro V0
HDI KF 10-1H, VERDAD, Proposal V0
HDI KF 03-231HN, VERDAD, Proposal V0
CHAPIN 44-4, CPR, Gyro V0
COLFER 36N-34HZ, KMG, MWD V0
JOKER 26N2-9HZ, KMG, MWD V0
JOKER 26N1-9HZ, KMG, MWD V0
CHAPIN 43-4, CPR, Gyro V0
COLFER 14N-34HZ, KMG, MWD V0
RUEGGE 3R-4HN165, CPR, MWD V0
RANDLE RED XX 3-2D, KMG, Gyro V0
JOKER 1N3-9HZ KMG, MWD V0
SPARBOE 7C-3HZ, KMG, MWD V0
HDI KF 03-232HC, VERDAD, Proposed V0
OTTESEN 1, VERDAD, Gyro V0
RUEGGE 3Q-4HN165, CPR, MWD V0
OLIN 42-4A, CPR, MWD V0
ROCKY 38N-33HZ, KMG, Proposal V0
COLFER 14C-34HZX, KMG, MWD V0
HDI KF 10-3H, VERDAD, Proposal V0
COLFER 35N-34HZ, KMG, MWD V0
OLIN 41-4, CPR, MWD V0
WARNER 2C-10H-E165, Wellbore #1, Plan #2 27Sep18 kjs V0
WARNER 2D-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2J-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2B-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2A-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2K-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2F-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2I-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2H-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2E-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2L-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2AA-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0