Crestone Peak Resources

Sec 10 T1N-R65W
Warner Pad
WARNER 2H-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 2H-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 2H-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	14,762.09	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	11,861.10	7,149.38	2,208.15	2,101.45	20.695	CC
CHAPIN 43-4 - CPR - Gyro	11,900.00	7,150.06	2,208.50	2,101.41	20.624	ES
CHAPIN 43-4 - CPR - Gyro	12,100.00	7,153.43	2,221.04	2,112.31	20.429	SF
CHAPIN 44-4 - CPR - Gyro	10,624.23	7,144.36	2,468.24	2,381.61	28.493	CC, ES
CHAPIN 44-4 - CPR - Gyro	11,100.00	7,147.96	2,513.67	2,422.97	27.714	SF
COLFER 13C-34HZ - KMG - MWD	14,762.09	11,790.00	1,315.16	1,152.75	8.098	CC, ES, SF
COLFER 13N-34HZ - KMG - MWD	14,762.09	11,496.00	1,611.31	1,427.02	8.743	CC, ES, SF
COLFER 14C-34HZX - KMG - MWD	14,762.09	11,779.00	1,069.49	970.26	10.778	CC, ES, SF
COLFER 14N-34HZ - KMG - MWD	14,762.09	11,568.00	975.22	912.77	15.615	CC, ES, SF
COLFER 35N-34HZ - KMG - MWD	14,762.09	11,687.00	1,104.07	973.45	8.453	CC, ES, SF
COLFER 36N-34HZ - KMG - MWD	14,762.09	11,617.00	1,281.29	1,136.65	8.858	CC, ES, SF
HDI KF 03-231HN - VERDAD - Proposal	6,884.21	6,718.09	3,435.32	3,385.35	68.748	CC
HDI KF 03-231HN - VERDAD - Proposal	6,900.00	6,732.52	3,435.42	3,385.34	68.606	ES
HDI KF 03-231HN - VERDAD - Proposal	7,500.00	7,132.87	3,592.02	3,537.73	66.162	SF
HDI KF 03-232HC - VERDAD - Proposed	6,886.42	6,720.11	3,460.82	3,410.84	69.244	CC
HDI KF 03-232HC - VERDAD - Proposed	6,900.00	6,732.52	3,460.90	3,410.83	69.121	ES
HDI KF 03-232HC - VERDAD - Proposed	7,500.00	7,132.87	3,615.64	3,561.38	66.632	SF
HDI KF 03-232HN - VERDAD - Proposal	6,885.31	6,719.10	3,448.06	3,398.09	68.996	CC
HDI KF 03-232HN - VERDAD - Proposal	6,900.00	6,732.52	3,448.15	3,398.08	68.863	ES
HDI KF 03-232HN - VERDAD - Proposal	7,500.00	7,132.87	3,603.82	3,549.54	66.397	SF
HDI KF 10-1H - VERDAD - Proposal	6,861.98	6,697.58	3,519.24	3,469.36	70.546	CC, ES
HDI KF 10-1H - VERDAD - Proposal	7,500.00	7,132.87	3,693.81	3,639.26	67.723	SF
HDI KF 10-3H - VERDAD - Proposal	6,864.07	6,699.51	3,544.28	3,494.39	71.039	CC, ES
HDI KF 10-3H - VERDAD - Proposal	7,500.00	7,132.87	3,716.88	3,662.36	68.186	SF
JOKER 1N3-9HZ - KMG - MWD	6,743.06	9,603.00	2,234.34	2,158.08	29.299	CC, ES
JOKER 1N3-9HZ - KMG - MWD	9,700.00	11,936.00	2,372.12	2,240.99	18.090	SF
JOKER 26N1-9HZ - KMG - MWD	6,878.75	9,672.62	2,157.45	2,081.09	28.253	CC
JOKER 26N1-9HZ - KMG - MWD	6,900.00	9,680.06	2,157.55	2,080.98	28.180	ES
JOKER 26N1-9HZ - KMG - MWD	9,700.00	12,039.64	2,265.41	2,133.92	17.228	SF
JOKER 26N2-9HZ - KMG - MWD	6,821.79	9,438.15	1,953.07	1,878.55	26.210	CC, ES
JOKER 26N2-9HZ - KMG - MWD	9,600.00	11,975.00	2,023.81	1,892.93	15.463	SF
OLIN 41-4 - CPR - MWD	14,566.74	7,458.87	2,460.72	2,307.98	16.111	CC
OLIN 41-4 - CPR - MWD	14,600.00	7,460.11	2,460.95	2,307.90	16.080	ES
OLIN 41-4 - CPR - MWD	14,762.09	7,466.05	2,468.50	2,314.26	16.005	SF
OLIN 42-4A - CPR - MWD	13,286.50	7,483.68	2,483.94	2,347.95	18.266	CC
OLIN 42-4A - CPR - MWD	13,300.00	7,483.38	2,483.97	2,347.79	18.241	ES
OLIN 42-4A - CPR - MWD	13,700.00	7,474.79	2,518.09	2,377.61	17.924	SF

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

Anticollision Summary Report

Company:	Crestone Peak Resources	**Local Co-ordinate Reference:**	Well WARNER 2H-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 2H-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)						
OTTESEN 1 - VERDAD - Gyro	11,577.33	7,133.67	863.86	762.03	8.483	CC, ES, SF
RANDLE RED XX 3-2D - KMG - Gyro	13,781.66	7,121.54	234.93	92.88	1.654	CC, ES, SF
RANDLE RED XX 3-4D - KMG - Gyro	14,762.09	7,117.44	1,379.77	1,223.39	8.823	CC, ES, SF
ROCKY 38N-33HZ - KMG - Proposal	14,762.09	13,373.00	2,359.72	2,144.15	10.946	CC, ES, SF
RUEGGE 3Q-4H-N165 - CPR - MWD	10,584.50	8,060.00	2,015.26	1,923.86	22.050	CC
RUEGGE 3Q-4H-N165 - CPR - MWD	14,762.09	12,245.17	2,025.55	1,812.25	9.496	ES, SF
RUEGGE 3R-4H-N165 - CPR - MWD	12,512.30	10,384.89	2,012.64	1,867.42	13.859	CC
RUEGGE 3R-4H-N165 - CPR - MWD	14,762.09	12,654.92	2,024.37	1,806.44	9.289	ES, SF
SPARBOE 7C-3HZ - KMG - MWD	14,250.74	13,323.66	1,170.29	938.18	5.042	CC
SPARBOE 7C-3HZ - KMG - MWD	14,300.00	13,275.12	1,170.30	938.18	5.042	ES
SPARBOE 7C-3HZ - KMG - MWD	14,600.00	12,983.92	1,171.34	938.89	5.039	SF
Warner Pad						
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	199.00	69.97	68.98	70.721	CC
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	298.84	70.30	68.61	41.631	ES
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,762.09	14,621.04	1,549.69	1,285.96	5.876	SF
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	200.00	199.00	80.05	79.06	80.905	CC, ES
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	14,762.09	14,440.75	1,788.58	1,526.80	6.832	SF
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	199.00	60.17	59.18	60.819	CC
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	299.28	60.25	58.56	35.626	ES
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,762.09	14,540.86	1,321.97	1,059.23	5.031	SF
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	300.00	299.48	50.06	48.36	29.550	CC, ES
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	14,762.09	14,768.16	1,064.22	801.71	4.054	SF
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	40.02	39.03	40.306	CC
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.33	40.10	38.40	23.591	ES
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,762.09	14,656.90	904.97	641.37	3.433	SF
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	29.95	28.95	30.159	CC
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.19	30.11	28.41	17.694	ES
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,762.09	14,583.83	654.77	394.80	2.519	SF
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	20.15	19.16	20.294	CC
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,762.09	14,732.12	260.05	-2.93	0.989	Level 3, ES, SF
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	10.08	9.08	10.147	CC
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,762.09	14,880.46	172.16	-19.54	0.898	Level 2, ES, SF
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	9.80	8.80	9.865	CC
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	500.00	499.18	10.97	7.88	3.550	ES
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,762.09	14,842.36	384.89	122.07	1.464	Level 3, SF
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	19.87	18.88	20.012	CC
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	300.00	299.54	20.42	18.72	12.032	ES
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,762.09	14,823.77	624.88	361.90	2.376	SF
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	29.95	28.96	30.161	CC, ES
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,762.09	15,184.65	738.08	480.59	2.866	SF
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	40.02	39.03	40.307	CC, ES
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,762.09	14,779.75	839.41	578.05	3.212	SF

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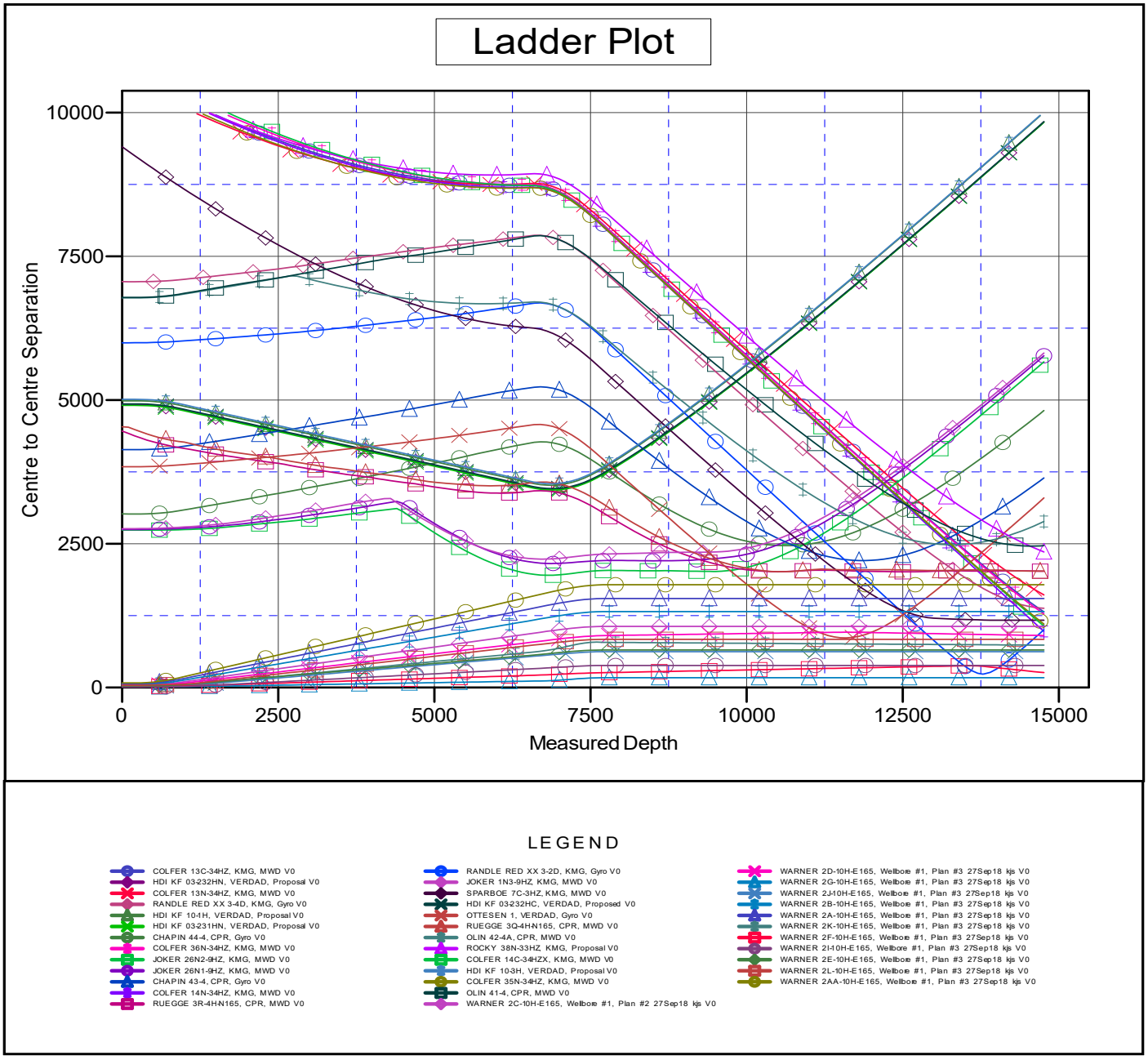
Reference Well:	WARNER 2H-10H-E165	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Single User Db
Reference Design:	Plan #3 27Sep18 kjs	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4994.00usft (Original Well E
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

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



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

CRESTONE PEAK RESOURCES

Anticollision Summary Report

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

Coordinates are relative to: WARNER 2H-10H-E165
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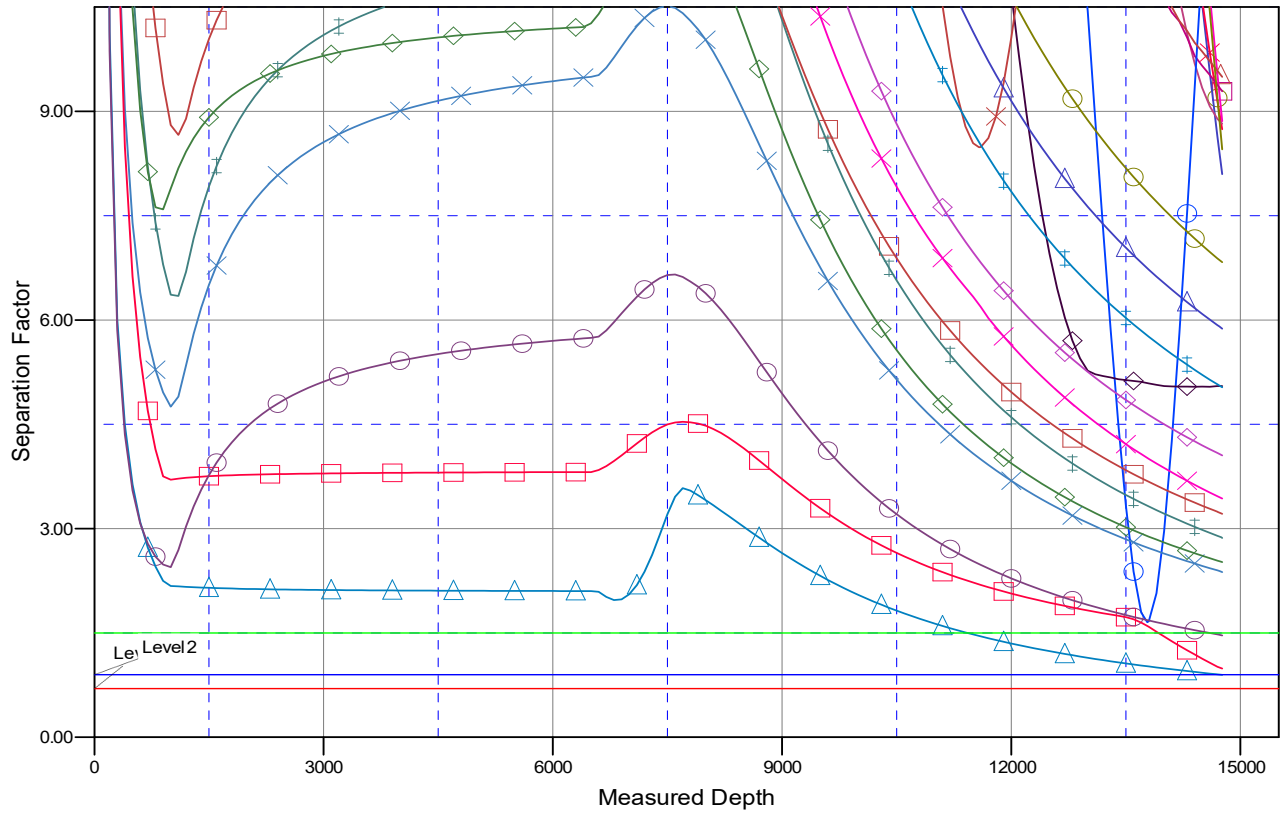
Grid Convergence at Surface is: 0.54°

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 2G-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 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