

Crestone Peak Resources

DJ BASIN

S18-T1N-R67W (HINGLEY)

HINGLEY 3G-18H-N167

OH

PLAN #2

Anticollision Report

21 January, 2018

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well HINGLEY 3G-18H-N167
Project:	DJ BASIN	TVD Reference:	KB @ 5133.00usft
Reference Site:	S18-T1N-R67W (HINGLEY)	MD Reference:	KB @ 5133.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	HINGLEY 3G-18H-N167	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2	Offset TVD Reference:	Offset Datum

Reference	PLAN #2		
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 1,403.64usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	1/21/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	2,000.00	PLAN #2 (OH)	VESSI_GYROFLEX	VESSI Gyroflex Gyro	
2,001.00	12,540.71	PLAN #2 (OH)	MWD+HDGM	OWSG MWD + HDGM	

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Reference Well:	HINGLEY 3G-18H-N167	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S18-T1N-R67W (HINGLEY)						
22-24 - KAISER-FRANCIS OIL - NO SURVEYS						Out of range
B C HOPKINS 3 - FRITZLER WELL - NO SURVEYS						Out of range
B C HOPKINS 4 - FRITZLER WELL - NO SURVEYS						Out of range
BLANCHE C 4 - KPK WELL - NO SURVEYS						Out of range
BLANCHE C HOPKINS 1 - KPK WELL - NO SURVEYS						Out of range
BLANCHE C HOPKINS 2 - KPK WELL - NO SURVEYS						Out of range
DAcono 16-13 - KMG WELL - GYRO						Out of range
EMERY31-13(1-68) 1 - NOBLE WELL - NO SURVEYS						Out of range
FOREMAN 1 - KPK WELL - NO SURVEYS						Out of range
FOREMAN 2 - KPK WELL - NO SURVEYS						Out of range
FOREMAN 3 - KPK WELL - SURVEYS						Out of range
FOREMAN UNIT 4 - KPK WELL - SURVEYS						Out of range
GRAHAM ELIZABETH W 1 - KMG WELL - NO SURVEY						Out of range
GRIFFITHS 13C-20HZX - KMG STK - SURVEYS						Out of range
GRIFFITHS 13C-20HZX - KMG WELL - SURVEYS						Out of range
GRIFFITHS 14N-20HZ - KMG WELL - SURVEYS						Out of range
GRIFFITHS 34N-20HZ - KMG WELL - SURVEYS						Out of range
GRIFFITHS 35C-20HZ - KMG WELL - SURVEYS						Out of range
GRIFFITHS 35N-20HZ - KMG WELL - SURVEYS						Out of range
GRIFFITHS 36C-20HZ - KMG WELL - SURVEYS						Out of range
HALEY 41-13 #1 - KMG WELL - NO SURVEYS						Out of range
HART 7-42 - KMG WELL - NO SURVEYS						Out of range
HERBERS 31-20 - CPR WELL - GYRO						Out of range
HICKS 13-18 - KPK WELL - NO SURVEYS						Out of range
HICKS 14-18 - BAYSWATER WELL - NO SURVEYS	400.00	369.00	433.22	431.92	333.664	CC
HICKS 14-18 - BAYSWATER WELL - NO SURVEYS	500.00	468.98	433.52	431.82	255.364	ES
HICKS 14-18 - BAYSWATER WELL - NO SURVEYS	5,100.00	4,950.00	762.18	738.90	32.736	SF
HICKS 23-18 - STARLIGHT WELL - NO SURVEYS						Out of range
HICKS 24-18 - BAYSWATER WELL - NO SURVEYS	400.00	376.00	391.45	390.14	297.278	CC
HICKS 24-18 - BAYSWATER WELL - NO SURVEYS	500.00	475.98	391.58	389.86	228.169	ES
HICKS 24-18 - BAYSWATER WELL - NO SURVEYS	5,100.00	5,000.00	699.09	675.76	29.962	SF
HICKS 4-18 - CPR WELL - GYRO	8,857.44	7,669.78	142.39	100.63	3.410	CC, ES, SF
HINGLEY 1 - CPR WELL - GYRO						Out of range
HINGLEY 12-18 - PDC WELL - GYRO	10,911.90	7,675.62	888.65	820.41	13.022	CC, ES
HINGLEY 12-18 - PDC WELL - GYRO	11,000.00	7,671.25	893.00	823.72	12.890	SF
HINGLEY 1A-18H-A167 - OH - PLAN #2	11,800.00	9,103.35	1,353.12	1,255.50	13.861	CC, ES
HINGLEY 1A-18H-A167 - OH - PLAN #2	12,500.00	8,401.33	1,403.09	1,299.54	13.549	SF
HINGLEY 1-B - VESSELS WELL - NO SURVEYS						Out of range
HINGLEY 1B-18H-A167 - OH - PLAN #2						Out of range
HINGLEY 1C-18H-A167 - OH - PLAN #2						Out of range
HINGLEY 1D-18H-A167 - OH - PLAN #2						Out of range
HINGLEY 1E-18H-A167 - OH - PLAN #2						Out of range
HINGLEY 1F-18H-A167 - OH - PLAN #2						Out of range
HINGLEY 1G-18H-A167 - OH - PLAN #2						Out of range
HINGLEY 1H-18H-A167 - OH - PLAN #2						Out of range
HINGLEY 1I-18H-A167 - OH - PLAN #2						Out of range
HINGLEY 1J-18H-A167 - OH - PLAN #2						Out of range
HINGLEY 1K-18H-A167 - OH - PLAN #2						Out of range
HINGLEY 2J - PDC WELL - GYRO	11,755.85	7,627.65	152.25	71.71	1.890	CC, ES, SF
HINGLEY 2S - TEXAS TEA WELL - NO SURVEYS						Out of range
HINGLEY 3A-18H-N167 - OH - PLAN #1	200.00	199.00	59.83	59.35	124.197	CC, ES
HINGLEY 3A-18H-N167 - OH - PLAN #1	12,541.56	12,634.50	1,289.91	1,132.23	8.181	SF
HINGLEY 3B-18H-N167 - OH - PLAN #2	300.00	299.00	49.83	49.00	59.975	CC, ES

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well HINGLEY 3G-18H-N167
Project:	DJ BASIN	TVD Reference:	KB @ 5133.00usft
Reference Site:	S18-T1N-R67W (HINGLEY)	MD Reference:	KB @ 5133.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	HINGLEY 3G-18H-N167	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S18-T1N-R67W (HINGLEY)						
HINGLEY 3B-18H-N167 - OH - PLAN #2	12,541.56	12,738.39	1,029.75	873.41	6.586	SF
HINGLEY 3C-18H-N167 - OH - PLAN #2	400.00	400.00	40.04	38.85	33.883	CC, ES
HINGLEY 3C-18H-N167 - OH - PLAN #2	12,541.56	12,425.92	994.28	837.46	6.340	SF
HINGLEY 3D-18H-N167 - OH - PLAN #2	505.20	505.18	29.61	28.07	19.117	CC, ES
HINGLEY 3D-18H-N167 - OH - PLAN #2	12,541.56	12,565.48	659.79	501.58	4.170	SF
HINGLEY 3E-18H-N167 - OH - PLAN #1	200.00	200.00	19.83	19.09	26.858	CC, ES
HINGLEY 3E-18H-N167 - OH - PLAN #1	12,541.56	12,449.45	343.16	187.42	2.203	SF
HINGLEY 3F-18H-N167 - OH - PLAN #1	300.00	300.00	9.83	8.99	11.804	CC, ES
HINGLEY 3F-18H-N167 - OH - PLAN #1	12,541.56	12,711.63	336.29	187.99	2.268	SF
HINGLEY 3H-18H-N167 - OH - PLAN #2	200.00	200.00	10.18	9.69	21.049	CC, ES
HINGLEY 3H-18H-N167 - OH - PLAN #2	12,000.00	11,913.34	302.10	164.66	2.198	SF
HINGLEY 3I-18H-N167 - OH - PLAN #1	400.00	400.00	20.17	18.99	17.073	CC, ES
HINGLEY 3I-18H-N167 - OH - PLAN #1	12,541.56	12,737.42	591.80	436.92	3.821	SF
HINGLEY 3J-18H-N167 - OH - PLAN #1	300.00	300.00	30.17	29.34	36.243	CC, ES
HINGLEY 3J-18H-N167 - OH - PLAN #1	12,541.56	12,548.85	760.04	601.96	4.808	SF
HINGLEY 3K-18H-N167 - OH - PLAN #2	103.68	103.68	40.32	40.17	273.848	CC
HINGLEY 3K-18H-N167 - OH - PLAN #2	200.00	199.56	40.59	40.10	83.815	ES
HINGLEY 3K-18H-N167 - OH - PLAN #2	12,541.56	12,611.02	994.61	836.24	6.280	SF
HINGLEY 3S - TEXAS TEA WELL - NO SURVEYS						Out of range
HINGLEY 4 - DENVER EAST WELL - NO SURVEYS						Out of range
HINGLEY 5 - DENVER EAST WELL - NO SURVEYS						Out of range
HINGLEY FARMS 32-18 - CPR WELL - GYRO						Out of range
HOPKINS 3 - KPK WELL - NO SURVEYS						Out of range
HOPKINS 32-19 1 - FRITZLER RESOURCES - NO SUR						Out of range
HOPKINS 41C-19#2 - FRITZLER RESOURCES - NO SU						Out of range
HSR RMF 12-8 - KMG WELL - NO SURVEYS						Out of range
JELTS 15C-19HZ - KMG WELL - SURVEYS						Out of range
JELTS 16N-19HZ - KMG WELL - SURVEYS						Out of range
JELTS 36N-19HZ - KMG WELL - SURVEYS	5,424.77	5,479.80	1,256.66	1,229.10	45.600	CC, ES
JELTS 36N-19HZ - KMG WELL - SURVEYS	7,500.00	7,401.38	1,290.13	1,251.74	33.611	SF
JELTS 37C-19HZ - KMG WELL - SURVEYS						Out of range
JELTS 37N-19HZ - KMG WELL - SURVEYS						Out of range
JELTS 39C-19HZ - KMG WELL - SURVEYS						Out of range
JOHNSON 21-24 - MGF OIL CORP WELL - NO SURVE						Out of range
LAURIDSON 18-16 - KMG WELL - GYRO						Out of range
LAURIDSON 2-A - KPK WELL - NO SURVEYS						Out of range
LAURIDSON 31-24 - KPK WELL - NO SURVEYS						Out of range
LAURIDSON 32-24 - SRC ENERGY WELL - NO SURVE						Out of range
LAURIDSON 41-24 - STARLIGHT RES WELL - NO SUR						Out of range
LAURIDSON 42-24 - KPK WELL - NO SURVEYS						Out of range
LAURIDSON VV 18-10 - KMG WELL - GYRO						Out of range
LAURIDSON VV18-4J - KMG WELL - GYRO						Out of range
LAURIDSON-A 1 - KPK WELL - NO SURVEYS						Out of range
LINKUS 32-24 - PDC WELL - NO SURVEYS						Out of range
LINKUS 41-24 - PDC WELL - GYRO						Out of range
M B SCHWAB 2 - KMG WELL - NO SURVEYS						Out of range
MARGUERITE TOTEMS U 2 - KMG WELL - GYRO						Out of range
MARK 1-A - CHAPARRAL RES - NO SURVEYS						Out of range
NRC 11-8 - KMG WELL - SURVEYS						Out of range
NRC 12-8 - KMG WELL - SURVEYS						Out of range
NRC 13-8 - KMG WELL - SURVEYS						Out of range
NRC 14-8 - KMG WELL - SURVEYS						Out of range
NRC 15-8 - KMG WELL - SURVEYS						Out of range

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Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well HINGLEY 3G-18H-N167
Project:	DJ BASIN	TVD Reference:	KB @ 5133.00usft
Reference Site:	S18-T1N-R67W (HINGLEY)	MD Reference:	KB @ 5133.00usft
Site Error:	0.00usft	North Reference:	True
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Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S18-T1N-R67W (HINGLEY)						
NRC 22-8 - KMG WELL - SURVEYS						Out of range
NRC 23-8 - KMG WELL - SURVEYS						Out of range
NRC 28N-8HZ - KMG WELL - SURVEYS						Out of range
NRC 29N-8HZ - KMG WELL - SURVEYS						Out of range
NRC 30C-8HZ - KMG WELL - SURVEYS						Out of range
NRC 35-8 - KMG WELL - SURVEYS						Out of range
NRC 3C-8HZ - KMG WELL - SURVEYS						Out of range
NRC 4C-8HZ - KMG WELL - SURVEYS						Out of range
NRC 4N-8HZ - KMG WELL - SURVEYS						Out of range
PAUL HEINZE 1 - KPK WELL - NO SURVEYS						Out of range
RALPH 13C-19HZ - KMG WELL - SURVEYS	3,542.14	3,505.88	600.52	584.92	38.488	CC, ES
RALPH 13C-19HZ - KMG WELL - SURVEYS	7,600.00	7,567.47	855.54	817.31	22.379	SF
RALPH 14N-19HZ - KMG WELL - SURVEYS	3,839.56	3,816.03	476.48	458.44	26.410	CC, ES
RALPH 14N-19HZ - KMG WELL - SURVEYS	7,400.00	7,325.23	565.26	527.97	15.158	SF
RALPH 34C-19HZ - KMG WELL - SURVEYS	2,444.60	2,380.80	697.35	687.48	70.660	CC
RALPH 34C-19HZ - KMG WELL - SURVEYS	2,500.00	2,432.73	697.57	687.44	68.878	ES
RALPH 34C-19HZ - KMG WELL - SURVEYS	7,700.00	7,592.00	1,326.67	1,286.68	33.178	SF
RALPH 35C-19HZ - KMG WELL - SURVEYS	5,696.98	5,683.13	59.43	31.49	2.127	CC
RALPH 35C-19HZ - KMG WELL - SURVEYS	5,700.00	5,686.14	59.43	31.47	2.126	ES
RALPH 35C-19HZ - KMG WELL - SURVEYS	7,470.59	7,419.99	70.98	33.60	1.899	SF
RALPH 35N-19HZ - KMG WELL - SURVEYS	4,652.89	4,651.38	455.19	432.70	20.242	CC
RALPH 35N-19HZ - KMG WELL - SURVEYS	5,900.00	5,903.88	456.89	427.80	15.711	ES
RALPH 35N-19HZ - KMG WELL - SURVEYS	7,445.26	7,424.03	469.40	432.21	12.623	SF
RALPH 36C-19HZ - KMG WELL - SURVEYS	3,563.30	3,533.05	513.00	496.44	30.981	CC
RALPH 36C-19HZ - KMG WELL - SURVEYS	3,600.00	3,565.12	513.20	496.43	30.613	ES
RALPH 36C-19HZ - KMG WELL - SURVEYS	7,600.00	7,509.24	956.64	917.64	24.530	SF
ROCKY MOUNTAIN FUEL 1 - KMG WELL - NO SURVE						Out of range
SCHWAB #1-32-13 - KMG WELL - NO SURVEYS						Out of range
STONEBRAKER 24-12 - KMG WELL - SURVEYS						Out of range
STONEBRAKER 25-12 - KMG WELL - SURVEYS						Out of range
STONEBRAKER 8-12 - KMG WELL - SURVEYS						Out of range
TROUDT 44-7 - KMG WELL - GYRO						Out of range
UNDERHILL 28N-17HZ - KMG WELL - SURVEYS						Out of range
UPRR 42 PAN AM 'AL' 1 - KMG WELL - GYRO						Out of range
UPRR 42 PAN AM GAS 1 - KMG WELL - NO SURVEYS						Out of range
UPRR 42 PAN AM N #2 - KPK WELL - NO SURVEYS						Out of range
UPRR 42 PAN AM N 1 - KMG WELL - GYRO						Out of range
UPRR 42 PAN AM N 4 - KPK WELL - NO SURVEYS						Out of range
UPRR 42 PAN AM-AJ 1 - KPK WELL - NO SURVEYS						Out of range
UPRR 42 PAN AM-AJ 4 - KPK WELL - NO SURVEYS						Out of range
UPRR 42 PAN AM-AS 1 - KMG WELL - GYRO						Out of range
UPRR 42 PAN AM-AV 1 - KPK WELL - SURVEYS						Out of range
UPRR 42 PAN AM-J 2 - KPK WELL - NO SURVEYS						Out of range
UPRR 42 PAN AM-J 3 - KPK WELL - NO SURVEYS						Out of range
UPRR 42 PAN AM-N 3 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM 1 2 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM 1 3 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM H 10 - KPK WELL - NO SURVEYS	5,015.65	4,879.00	1,027.92	1,004.85	44.544	CC, ES
UPRR 43 PAN AM H 10 - KPK WELL - NO SURVEYS	5,200.00	4,879.00	1,044.32	1,020.44	43.734	SF
UPRR 43 PAN AM H 2 - KPK WELL - NO SURVEYS	5,176.73	4,994.00	971.04	947.28	40.875	CC, ES
UPRR 43 PAN AM H 2 - KPK WELL - NO SURVEYS	5,300.00	4,994.00	978.83	954.50	40.218	SF
UPRR 43 PAN AM I #5 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM M TRUE #1 - KMG WELL - GYRO	7,024.84	6,867.22	827.84	797.10	26.931	CC, ES

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Cathedral Energy Services

Anticollision Report

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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						
S18-T1N-R67W (HINGLEY)						
UPRR 43 PAN AM M TRUE #1 - KMG WELL - GYRO	7,100.00	6,940.54	831.44	800.35	26.742	SF
UPRR 43 PAN AM O 1 - KMG WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM-H 7 - AMOCO WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM-I 14 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM-I 15 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM-I 26 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM-I 31 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM-J 1 - KMG WELL - NO SURVEYS						Out of range
UPRR PAN AM H 3 - KPK WELL - NO SURVEYS						Out of range
UPRR43PANAM-I 16 - KPK WELL - NO SURVEYS						Out of range