

Crestone Peak Resources

DJ BASIN

S18-T1N-R67W (HINGLEY)

HINGLEY 1F-18H-A167

OH

PLAN #2

Anticollision Summary Report

19 January, 2018

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well HINGLEY 1F-18H-A167 - Slot Hingley 1F-18H-A167 SHL
Project:	DJ BASIN	TVD Reference:	23' KB @ 5079.00usft
Reference Site:	S18-T1N-R67W (HINGLEY)	MD Reference:	23' KB @ 5079.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	HINGLEY 1F-18H-A167	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	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:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.00 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	1/19/2018		
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	12,712.90	PLAN #2 (OH)	MWD+HDGM	OWSG MWD + HDGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
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						Out of range
HICKS 23-18 - STARLIGHT WELL - NO SURVEYS						Out of range
HICKS 24-18 - BAYSWATER WELL - NO SURVEYS						Out of range
HICKS 4-18 - CPR WELL - GYRO						Out of range
HINGLEY 1 - CPR WELL - GYRO	8,823.08	7,829.84	249.57	209.80	6.276	CC, ES, SF
HINGLEY 12-18 - PDC WELL - GYRO						Out of range
HINGLEY 1A-18H-A167 - OH - PLAN #2	200.00	198.00	50.00	49.52	104.174	CC, ES
HINGLEY 1A-18H-A167 - OH - PLAN #2	7,113.56	7,026.94	997.53	955.15	23.537	SF
HINGLEY 1-B - VESSELS WELL - NO SURVEYS						Out of range
HINGLEY 1B-18H-A167 - OH - PLAN #2	300.00	299.00	40.00	39.17	48.148	CC, ES
HINGLEY 1B-18H-A167 - OH - PLAN #2	12,712.90	12,845.33	880.01	723.17	5.611	SF

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

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Reference Well:	HINGLEY 1F-18H-A167	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	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

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Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
S18-T1N-R67W (HINGLEY)						
HINGLEY 1C-18H-A167 - OH - PLAN #2	552.85	550.56	27.18	25.46	15.817	CC, ES
HINGLEY 1C-18H-A167 - OH - PLAN #2	12,712.90	12,614.63	891.39	736.55	5.757	SF
HINGLEY 1D-18H-A167 - OH - PLAN #2	200.00	199.00	20.00	19.52	41.519	CC, ES
HINGLEY 1D-18H-A167 - OH - PLAN #2	12,712.90	12,636.55	524.14	369.79	3.396	SF
HINGLEY 1E-18H-A167 - OH - PLAN #2	491.18	508.97	7.70	6.16	4.998	CC, ES
HINGLEY 1E-18H-A167 - OH - PLAN #2	12,712.90	12,502.22	287.91	171.41	2.471	SF
HINGLEY 1G-18H-A167 - OH - PLAN #2	383.92	385.08	8.51	7.38	7.520	CC
HINGLEY 1G-18H-A167 - OH - PLAN #2	400.00	401.16	8.54	7.35	7.180	ES
HINGLEY 1G-18H-A167 - OH - PLAN #2	12,712.90	12,558.36	210.97	85.34	1.679	SF
HINGLEY 1H-18H-A167 - OH - PLAN #2	300.87	301.88	20.00	19.16	23.885	CC, ES
HINGLEY 1H-18H-A167 - OH - PLAN #2	12,500.00	12,212.35	460.53	328.16	3.479	SF
HINGLEY 1I-18H-A167 - OH - PLAN #2	106.10	108.10	30.00	29.84	188.453	CC
HINGLEY 1I-18H-A167 - OH - PLAN #2	200.00	201.95	30.04	29.56	61.697	ES
HINGLEY 1I-18H-A167 - OH - PLAN #2	12,712.90	12,533.61	827.68	673.12	5.355	SF
HINGLEY 1J-18H-A167 - OH - PLAN #2	300.00	302.00	40.00	39.16	47.846	CC, ES
HINGLEY 1J-18H-A167 - OH - PLAN #2	7,250.00	7,186.42	962.97	921.73	23.350	SF
HINGLEY 1K-18H-A167 - OH - PLAN #2	200.00	202.00	50.00	49.51	102.680	CC, ES
HINGLEY 1K-18H-A167 - OH - PLAN #2	6,800.00	6,727.58	998.66	960.71	26.314	SF
HINGLEY 2J - PDC WELL - GYRO						Out of range
HINGLEY 2S - TEXAS TEA WELL - NO SURVEYS	300.00	302.00	184.26	183.29	190.416	CC, ES
HINGLEY 2S - TEXAS TEA WELL - NO SURVEYS	5,000.00	4,881.00	769.57	746.98	34.058	SF
HINGLEY 3A-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3B-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3C-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3D-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3E-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3F-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3G-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3H-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3I-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3J-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3K-18H-N167 - OH - PLAN #2						Out of range
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	10,034.45	7,855.32	452.81	399.48	8.491	CC, ES
HINGLEY FARMS 32-18 - CPR WELL - GYRO	10,100.00	7,855.04	457.53	403.15	8.413	SF
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						Out of range
JELTS 37C-19HZ - KMG WELL - SURVEYS	12,712.90	7,627.92	762.13	709.68	14.530	CC, ES, SF
JELTS 37N-19HZ - KMG WELL - SURVEYS	12,712.90	7,421.16	912.57	862.66	18.286	CC, ES, SF
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	12,428.59	7,913.36	553.89	466.07	6.307	CC, ES, SF
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

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Reference Site:	S18-T1N-R67W (HINGLEY)	MD Reference:	23' KB @ 5079.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	HINGLEY 1F-18H-A167	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	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	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)						
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	10,903.98	7,882.34	752.64	687.41	11.538	CC, ES
LAURIDSON VV 18-10 - KMG WELL - GYRO	11,000.00	7,880.70	758.74	691.97	11.365	SF
LAURIDSON VV18-4J - KMG WELL - GYRO	11,842.11	7,913.07	273.42	194.36	3.459	CC, ES, SF
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
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						Out of range
RALPH 14N-19HZ - KMG WELL - SURVEYS						Out of range
RALPH 34C-19HZ - KMG WELL - SURVEYS						Out of range
RALPH 35C-19HZ - KMG WELL - SURVEYS						Out of range
RALPH 35N-19HZ - KMG WELL - SURVEYS						Out of range
RALPH 36C-19HZ - KMG WELL - SURVEYS						Out of range
ROCKY MOUNTAIN FUEL 1 - KMG WELL - NO SURVEY						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	5,077.23	4,987.76	659.98	638.19	30.287	CC
TROUDT 44-7 - KMG WELL - GYRO	5,200.00	5,108.60	660.32	637.82	29.350	ES
TROUDT 44-7 - KMG WELL - GYRO	7,200.00	7,089.33	736.70	702.96	21.833	SF
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	5,145.53	4,920.00	980.03	956.57	41.775	CC, ES
UPRR 42 PAN AM-AJ 1 - KPK WELL - NO SURVEYS	5,300.00	4,920.00	992.13	968.07	41.244	SF
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

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Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
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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 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						Out of range
UPRR 43 PAN AM H 2 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM I #5 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM M TRUE #1 - KMG WELL - GYRO						Out of range
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

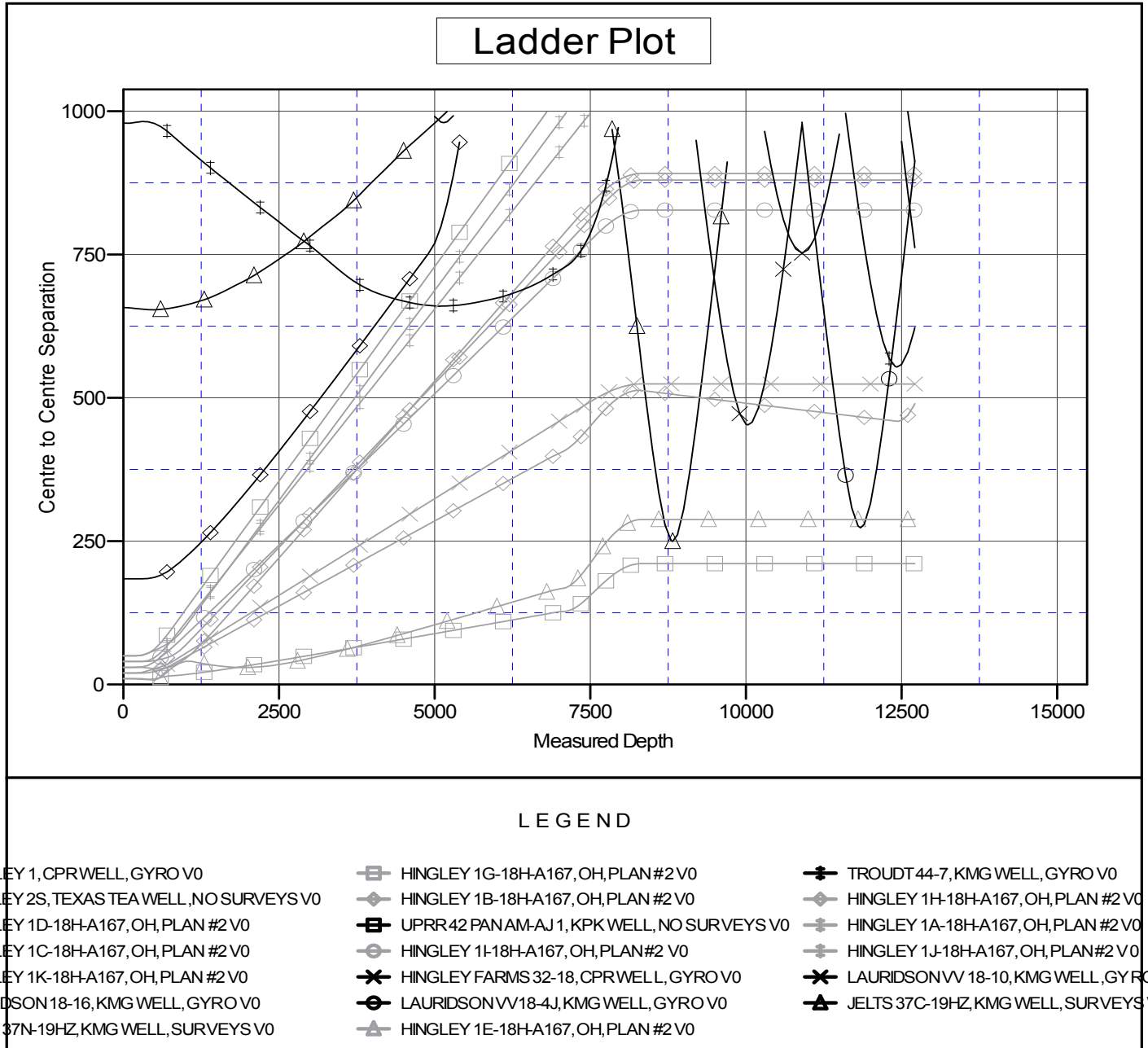
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Reference Depths are relative to 23' KB @ 5079.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: HINGLEY 1F-18H-A167 - Slot Hingley 1F-18H-A167 S
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.37°



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