

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

☒ AMENDED REPORT

"As Drilled"

As Drilled Plat

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35884		*Pool Code 71629	*Pool Name (Original Hole) BASIN FRUITLAND COAL
*Property Code 318755	*Property Name TRAIL CANYON		*Well Number 104H
*GRID No. 372171	*Operator Name HILCORP ENERGY COMPANY		*Elevation 6906'

¹⁰ Surface Location

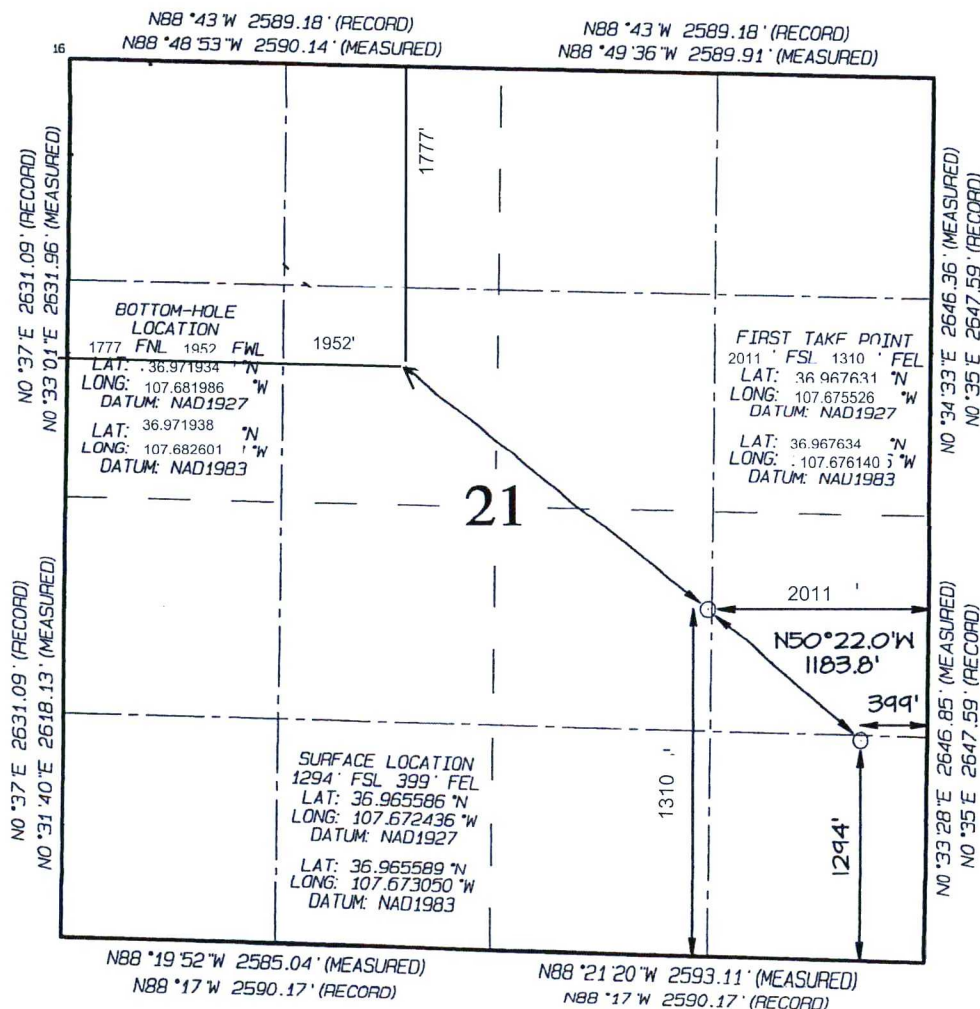
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	21	32N	8W		1294	SOUTH	399	EAST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	21	32N	8W		1777	NORTH	1952	WEST	SAN JUAN

¹² Dedicated Acres 640.00	Entire Section 21	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
---	-------------------	-------------------------------	----------------------------------	-------------------------

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order hereinafter entered by the division.

Signature: Amanda Walker Date: 4/9/2019

Printed Name: Amanda Walker
E-mail Address: mwalker@hilcorp.com

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: APRIL 9, 2019
Date of Survey: JUNE 19, 2018

See original attached C-102

NMOC

JUN 25 2019

DISTRICT III

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505

☒ AMENDED REPORT

"As Drilled"

As Drilled Plat

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-35884	² Pool Code 71629	³ Pool Name BASIN FRUITLAND COAL (ST01)
⁴ Property Code 318755	⁵ Property Name TRAIL CANYON	⁶ Well Number 104H
⁷ OGRIID No. 372171	⁸ Operator Name HILCORP ENERGY COMPANY	⁹ Elevation 6906'

¹⁰ Surface Location

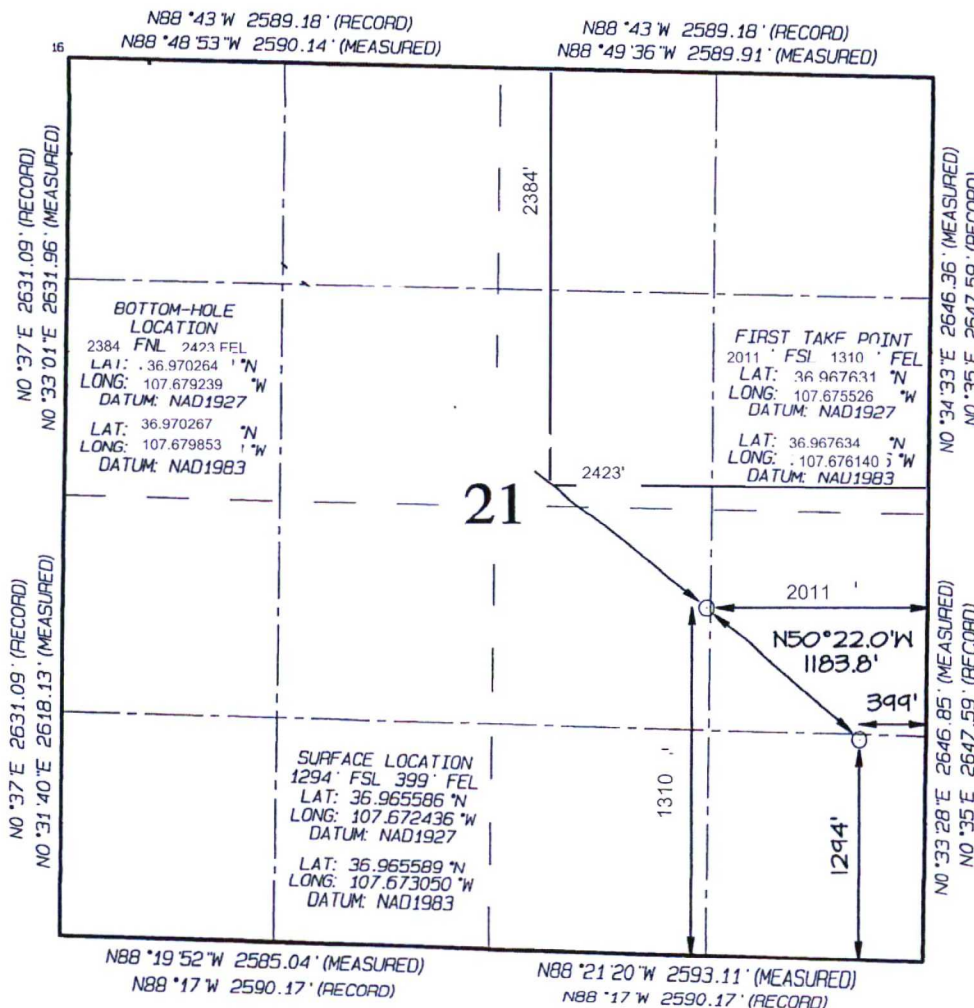
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	21	32N	8W		1294	SOUTH	399	EAST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	21	32N	8W		2384	NORTH	2423	EAST	SAN JUAN

¹² Dedicated Acres 640.00	Entire Section 21	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
---	-------------------	-------------------------------	----------------------------------	-------------------------

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE
BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order hereinafter entered by the division.

Amanda Walker 4/9/2019
Signature Date

Amanda Walker
Printed Name
mwalker@hilcorp.com
E-mail Address

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: APRIL 9, 2019
Date of Survey: JUNE 19, 2018

See original attached C-102

NMOCD

JUN 25 2019

DISTRICT III

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

As Drilled Plat

☒ AMENDED REPORT

"as drilled"

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-35884	² Pool Code 71629	³ Pool Name BASIN FRUITLAND COAL (ST02)
⁴ Property Code 318755	⁵ Property Name TRAIL CANYON	⁶ Well Number 104H
⁷ GRID No. 372171	⁸ Operator Name HILCORP ENERGY COMPANY	⁹ Elevation 6906'

¹⁰ Surface Location

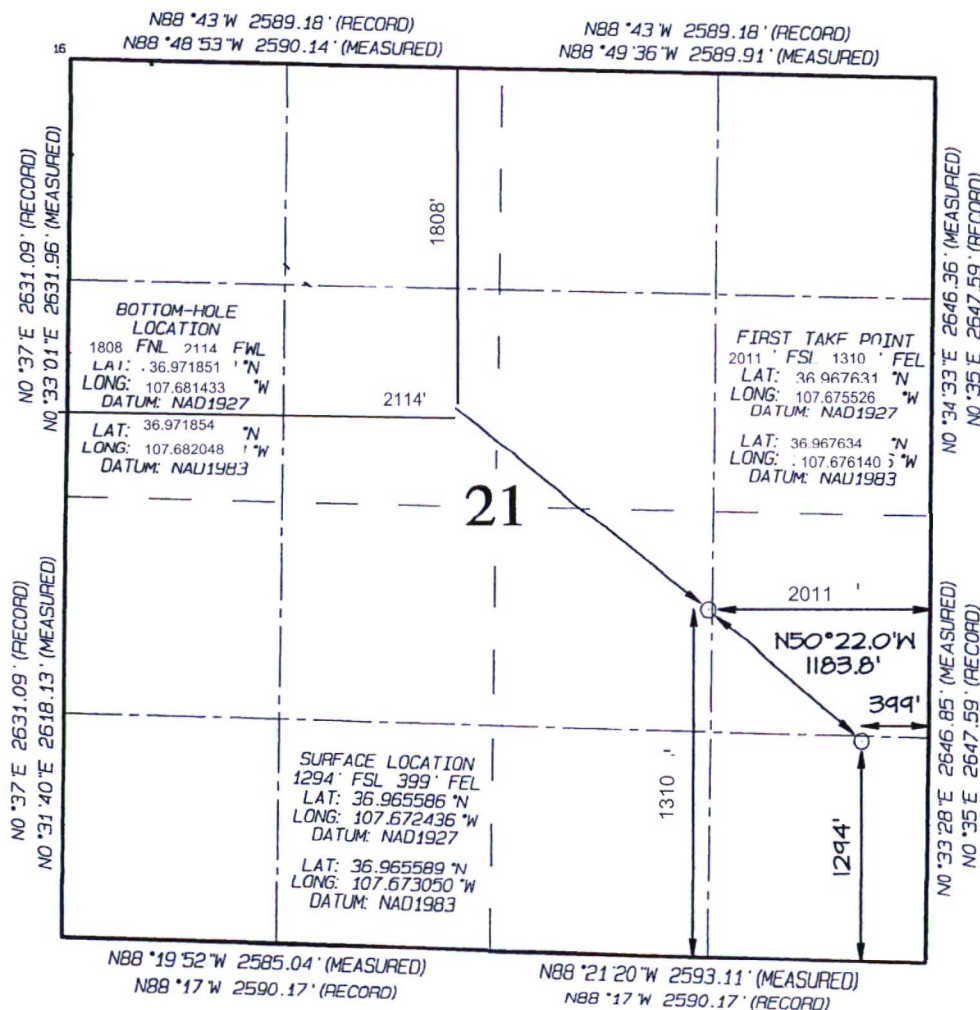
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	21	32N	8W		1294	SOUTH	399	EAST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	21	32N	8W		1808	NORTH	2114	WEST	SAN JUAN

¹² Dedicated Acres 640.00	Entire Section 21	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
---	-------------------	-------------------------------	----------------------------------	-------------------------

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE
BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order hereinafter entered by the division.

Amanda Walker 4/9/2019
Signature Date

Amanda Walker
Printed Name
mwalker@hilcorp.com
E-mail Address

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: APRIL 9, 2019
Date of Survey: JUNE 19, 2018

See original attached C-102

NMOC

JUN 25 2019

DISTRICT III

Hilcorp Deviation Report

Well Name: TRAIL CANYON #104H

Operator HILCORP ENERGY COMPANY	Legal WellName TRAIL CANYON #104H	API / UWI 3004535884	County SAN JUAN	State/Province NEW MEXICO
Surface Legal Location P-21-32N-8W	North/South Distance (ft) 1,294.0	N/S Ref FSL	East/West Distance (ft) 399.0	E/W Ref FEL
Date 6/13/2019	Description DIRECTIONAL SURVEY			

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	Method	Survey Company
6/6/2019	0.00	0.00	0.00	IncAzi-MWD	Koltek Energy Services
6/6/2019	501.00	0.43	68.20	IncAzi-MWD	Koltek Energy Services
6/6/2019	507.00	0.44	68.20	IncAzi-MWD	Koltek Energy Services
6/6/2019	559.00	0.48	68.20	IncAzi-MWD	Koltek Energy Services
6/6/2019	622.00	0.35	44.47	IncAzi-MWD	Koltek Energy Services
6/6/2019	685.00	0.53	33.83	IncAzi-MWD	Koltek Energy Services
6/6/2019	748.00	0.62	34.45	IncAzi-MWD	Koltek Energy Services
6/6/2019	810.00	0.62	34.54	IncAzi-MWD	Koltek Energy Services
6/6/2019	873.00	0.48	55.90	IncAzi-MWD	Koltek Energy Services
6/6/2019	936.00	0.53	61.08	IncAzi-MWD	Koltek Energy Services
6/6/2019	999.00	0.70	49.04	IncAzi-MWD	Koltek Energy Services
6/6/2019	1,062.00	1.01	53.17	IncAzi-MWD	Koltek Energy Services
6/6/2019	1,125.00	0.31	333.28	IncAzi-MWD	Koltek Energy Services
6/6/2019	1,187.00	0.40	315.96	IncAzi-MWD	Koltek Energy Services
6/6/2019	1,249.00	0.62	315.79	IncAzi-MWD	Koltek Energy Services
6/6/2019	1,310.00	0.62	304.01	IncAzi-MWD	Koltek Energy Services
6/6/2019	1,371.00	0.75	317.72	IncAzi-MWD	Koltek Energy Services
6/6/2019	1,432.00	0.66	319.30	IncAzi-MWD	Koltek Energy Services
6/6/2019	1,493.00	0.88	324.58	IncAzi-MWD	Koltek Energy Services
6/6/2019	1,555.00	0.92	330.29	IncAzi-MWD	Koltek Energy Services
6/6/2019	1,616.00	0.79	328.71	IncAzi-MWD	Koltek Energy Services
6/7/2019	1,677.00	0.75	337.32	IncAzi-MWD	Koltek Energy Services
6/7/2019	1,738.00	0.70	347.16	IncAzi-MWD	Koltek Energy Services
6/7/2019	1,800.00	0.75	354.64	IncAzi-MWD	Koltek Energy Services
6/7/2019	1,861.00	1.10	2.90	IncAzi-MWD	Koltek Energy Services
6/7/2019	1,922.00	0.97	353.23	IncAzi-MWD	Koltek Energy Services
6/7/2019	1,983.00	0.88	323.35	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,044.00	0.92	328.18	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,106.00	0.97	336.88	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,168.00	1.14	343.03	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,200.00	1.93	324.49	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,231.00	3.34	325.98	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,263.00	4.97	325.63	IncAzi-MWD	Koltek Energy Services

I, the undersigned, certify that I acting in my capacity as Foreman for Hilcorp Energy Company, am authorized by said Company to make this report; and that said report was prepared under my supervision and directions, and that the facts stated herein are true to the best of my knowledge and belief.

Freddy Proctor

Freddy Proctor
(Printed Name)

Subscribed and sworn to me this 6/24/2019

Lisabeth Jones

Notary Public in and for San Juan County, New Mexico

My Commission expires 1/2/2022

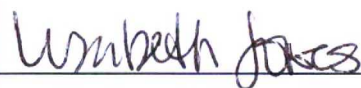


Well Name: TRAIL CANYON #104H

Survey Data					
Date	MD (ftKB)	Incl (°)	Azm (°)	Method	Survey Company
6/7/2019	2,294.00	6.46	322.38	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,326.00	7.69	318.95	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,357.00	8.70	315.79	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,388.00	9.67	311.39	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,420.00	10.81	308.67	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,451.00	12.04	309.02	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,483.00	12.52	307.00	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,514.00	13.49	306.74	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,546.00	15.07	307.61	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,577.00	16.08	308.84	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,608.00	16.35	311.22	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,640.00	17.89	311.13	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,671.00	19.56	309.72	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,703.00	20.96	309.81	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,734.00	21.84	308.49	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,765.00	22.63	309.20	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,797.00	23.38	308.23	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,828.00	24.39	309.02	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,860.00	25.49	309.20	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,891.00	26.76	310.25	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,922.00	27.77	309.72	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,954.00	28.65	309.11	IncAzi-MWD	Koltek Energy Services
6/7/2019	2,985.00	29.58	309.11	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,017.00	30.45	308.41	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,048.00	31.51	308.93	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,079.00	32.96	308.58	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,111.00	34.41	308.58	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,142.00	36.12	308.05	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,174.00	37.79	307.35	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,205.00	39.38	307.53	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,237.00	41.22	306.91	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,268.00	43.24	307.96	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,299.00	45.00	308.49	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,331.00	46.71	308.67	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,362.00	48.47	308.76	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,394.00	50.14	308.76	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,425.00	51.37	307.79	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,456.00	52.87	307.88	IncAzi-MWD	Koltek Energy Services

I, the undersigned, certify that I acting in my capacity as Foreman for Hilcorp Energy Company, am authorized by said Company to make this report; and that said report was prepared under my supervision and directions, and that the facts stated herein are true to the best of my knowledge and belief.


Freddy Rector
(Printed Name)

Subscribed and sworn to me this 6/24/2019


Notary Public in and for San Juan County, New Mexico

My Commission expires 1/2/2022


Well Name: TRAIL CANYON #104H

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	Method	Survey Company
6/7/2019	3,488.00	54.14	307.26	IncAzi-MWD	Koltek Energy Services
6/7/2019	3,519.00	55.24	306.74	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,551.00	56.38	307.00	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,582.00	57.83	306.21	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,614.00	59.41	307.09	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,645.00	60.51	306.91	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,676.00	60.64	306.47	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,708.00	61.74	307.35	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,739.00	62.36	308.41	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,771.00	63.54	308.76	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,802.00	64.42	310.16	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,833.00	65.70	309.99	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,865.00	67.32	310.08	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,896.00	68.16	310.08	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,928.00	69.57	309.46	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,959.00	71.63	309.20	IncAzi-MWD	Koltek Energy Services
6/8/2019	3,991.00	73.70	309.02	IncAzi-MWD	Koltek Energy Services
6/8/2019	4,022.00	75.23	309.28	IncAzi-MWD	Koltek Energy Services
6/8/2019	4,053.00	76.60	309.28	IncAzi-MWD	Koltek Energy Services
6/8/2019	4,085.00	77.56	309.81	IncAzi-MWD	Koltek Energy Services
6/8/2019	4,116.00	78.66	309.98	IncAzi-MWD	Koltek Energy Services
6/8/2019	4,129.00	79.06	309.72	IncAzi-MWD	Koltek Energy Services
6/8/2019	4,157.00	80.12	306.38	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,168.00	80.55	305.07	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,199.00	82.53	309.72	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,230.00	82.71	312.01	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,261.00	83.10	312.45	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,293.00	84.02	312.36	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,324.00	85.25	312.45	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,356.00	85.69	313.15	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,387.00	88.37	314.12	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,419.00	89.69	315.00	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,450.00	90.83	314.47	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,481.00	91.58	311.75	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,513.00	93.25	311.22	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,576.00	92.29	307.09	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,639.00	92.33	305.33	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,702.00	90.22	304.54	IncAzi-MWD	Koltek Energy Services

I, the undersigned, certify that I acting in my capacity as Foreman for Hilcorp Energy Company, am authorized by said Company to make this report; and that said report was prepared under my supervision and directions, and that the facts stated herein are true to the best of my knowledge and belief.



Frederick Proctor
(Printed Name)

Subscribed and sworn to me this 6/24/2019

Lisabeth Jones

Notary Public in and for San Juan County, New Mexico

My Commission expires 1/2/2022



Well Name: TRAIL CANYON #104H

Survey Data					
Date	MD (ftKB)	Incl (°)	Azm (°)	Method	Survey Company
6/12/2019	4,764.00	89.47	302.52	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,827.00	88.33	303.48	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,890.00	86.97	303.04	IncAzi-MWD	Koltek Energy Services
6/12/2019	4,953.00	87.45	304.45	IncAzi-MWD	Koltek Energy Services
6/12/2019	5,016.00	87.45	304.89	IncAzi-MWD	Koltek Energy Services
6/12/2019	5,078.00	87.19	308.23	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,130.00	88.41	310.08	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,191.00	90.13	310.87	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,253.00	90.48	311.22	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,314.00	90.31	310.78	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,375.00	89.96	310.78	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,436.00	90.31	310.87	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,497.00	90.04	310.25	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,558.00	90.26	310.87	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,620.00	90.88	312.80	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,681.00	90.97	312.36	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,742.00	90.97	312.36	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,813.00	91.93	311.75	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,836.00	92.07	311.81	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,874.00	92.29	311.92	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,935.00	92.33	312.10	IncAzi-MWD	Koltek Energy Services
6/13/2019	5,996.00	92.29	311.66	IncAzi-MWD	Koltek Energy Services
6/13/2019	6,058.00	92.33	311.31	IncAzi-MWD	Koltek Energy Services
6/13/2019	6,119.00	92.66	311.66	IncAzi-MWD	Koltek Energy Services
6/13/2019	6,180.00	92.20	310.16	IncAzi-MWD	Koltek Energy Services
6/13/2019	6,241.00	92.54	310.60	IncAzi-MWD	Koltek Energy Services
6/13/2019	6,302.00	92.59	310.69	IncAzi-MWD	Koltek Energy Services
6/13/2019	6,365.00	92.11	309.20	IncAzi-MWD	Koltek Energy Services
6/13/2019	6,428.00	91.89	309.37	IncAzi-MWD	Koltek Energy Services
6/13/2019	6,491.00	92.24	308.41	IncAzi-MWD	Koltek Energy Services
6/14/2019	6,554.00	91.14	307.88	IncAzi-MWD	Koltek Energy Services
6/14/2019	6,599.00	90.89	307.24	IncAzi-MWD	Koltek Energy Services
6/14/2019	6,616.00	90.79	307.00	IncAzi-MWD	Koltek Energy Services
6/14/2019	6,666.00	90.79	307.00	IncAzi-MWD	Koltek Energy Services

I, the undersigned, certify that I acting in my capacity as Foreman for Hilcorp Energy Company, am authorized by said Company to make this report; and that said report was prepared under my supervision and directions, and that the facts stated herein are true to the best of my knowledge and belief.

Frederick P. L.
Frederick Proctor
(Printed Name)

Subscribed and sworn to me this 6/24/2019

Lisabeth Jones

Notary Public in and for San Juan County, New Mexico

My Commission expires 1/2/2022



Hilcorp Deviation Report

Well Name: TRAIL CANYON #104H

Operator HILCORP ENERGY COMPANY	Legal WellName TRAIL CANYON #104H	API / UWI 3004535884	County SAN JUAN	State/Province NEW MEXICO
Surface Legal Location P-21-32N-8W	North/South Distance (ft) 1,294.0	N/S Ref FSL	East/West Distance (ft) 399.0	E/W Ref FEL
Date 6/16/2019	Description DIRECTIONAL SURVEY			

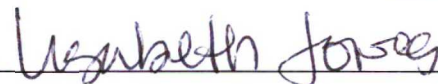
Survey Data					
Date	MD (ftKB)	Incl (°)	Azm (°)	Method	Survey Company
6/15/2019	4,419.00	89.69	315.00	IncAzi-MWD	Koltek Energy Services
6/15/2019	4,451.00	88.81	317.99	IncAzi-MWD	Koltek Energy Services
6/15/2019	4,514.00	91.27	319.22	IncAzi-MWD	Koltek Energy Services
6/15/2019	4,577.00	89.60	316.76	IncAzi-MWD	Koltek Energy Services
6/15/2019	4,639.00	89.69	316.58	IncAzi-MWD	Koltek Energy Services
6/15/2019	4,702.00	91.63	317.55	IncAzi-MWD	Koltek Energy Services
6/15/2019	4,763.00	92.46	317.11	IncAzi-MWD	Koltek Energy Services
6/15/2019	4,825.00	92.68	315.44	IncAzi-MWD	Koltek Energy Services
6/15/2019	4,886.00	91.27	314.03	IncAzi-MWD	Koltek Energy Services
6/15/2019	4,947.00	88.51	310.52	IncAzi-MWD	Koltek Energy Services
6/15/2019	5,008.00	87.58	309.11	IncAzi-MWD	Koltek Energy Services
6/15/2019	5,070.00	88.99	307.35	IncAzi-MWD	Koltek Energy Services
6/15/2019	5,131.00	90.35	308.14	IncAzi-MWD	Koltek Energy Services
6/15/2019	5,192.00	89.88	308.23	IncAzi-MWD	Koltek Energy Services
6/15/2019	5,253.00	90.09	307.97	IncAzi-MWD	Koltek Energy Services
6/15/2019	5,315.00	90.53	305.77	IncAzi-MWD	Koltek Energy Services
6/15/2019	5,345.00	90.35	305.59	IncAzi-MWD	Koltek Energy Services
6/15/2019	5,376.00	89.21	305.42	IncAzi-MWD	Koltek Energy Services
6/15/2019	5,406.00	91.85	307.26	IncAzi-MWD	Koltek Energy Services
6/15/2019	5,437.00	93.21	307.09	IncAzi-MWD	Koltek Energy Services
6/15/2019	5,498.00	93.12	305.95	IncAzi-MWD	Koltek Energy Services
6/15/2019	5,559.00	92.90	305.59	IncAzi-MWD	Koltek Energy Services
6/15/2019	5,611.00	92.90	305.59	IncAzi-MWD	Koltek Energy Services

I, the undersigned, certify that I acting in my capacity as Foreman for Hilcorp Energy Company, am authorized by said Company to make this report; and that said report was prepared under my supervision and directions, and that the facts stated herein are true to the best of my knowledge and belief.



 (Printed Name) Freddy Proctor

Subscribed and sworn to me this 6/24/19



Notary Public in and for San Juan County, New Mexico

My Commission expires 1/2/2022



Well Name: TRAIL CANYON #104H

Operator HILCORP ENERGY COMPANY	Legal WellName TRAIL CANYON #104H	API / UWI 3004535884	County SAN JUAN	State/Province NEW MEXICO
Surface Legal Location P-21-32N-8W		North/South Distance (ft) 1,294.0	N/S Ref FSL	East/West Distance (ft) 399.0
Date 6/20/2019	Description DIRECTIONAL SURVEY			E/W Ref FEL

Survey Data					
Date	MD (ftKB)	Incl (°)	Azm (°)	Method	Survey Company
6/19/2019	4,022.00	75.23	309.28	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,166.00	85.34	312.10	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,198.00	85.56	315.96	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,229.00	86.09	317.37	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,260.00	87.36	319.92	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,292.00	87.10	319.92	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,323.00	87.45	319.39	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,355.00	88.55	318.95	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,386.00	89.96	320.09	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,418.00	90.35	320.45	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,449.00	89.78	320.80	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,480.00	89.74	320.27	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,543.00	89.91	321.15	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,606.00	91.01	322.64	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,669.00	89.96	320.36	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,731.00	88.73	316.76	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,794.00	87.50	312.89	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,857.00	88.99	312.27	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,920.00	90.22	314.73	IncAzi-MWD	Koltek Energy Services
6/19/2019	4,982.00	90.35	312.98	IncAzi-MWD	Koltek Energy Services
6/19/2019	5,045.00	89.56	308.85	IncAzi-MWD	Koltek Energy Services
6/19/2019	5,108.00	89.30	308.85	IncAzi-MWD	Koltek Energy Services
6/19/2019	5,171.00	90.57	310.08	IncAzi-MWD	Koltek Energy Services
6/19/2019	5,234.00	90.22	311.04	IncAzi-MWD	Koltek Energy Services
6/19/2019	5,297.00	90.87	312.01	IncAzi-MWD	Koltek Energy Services
6/19/2019	5,360.00	91.45	311.83	IncAzi-MWD	Koltek Energy Services
6/19/2019	5,422.00	92.51	314.12	IncAzi-MWD	Koltek Energy Services
6/20/2019	5,485.00	89.21	310.94	IncAzi-MWD	Koltek Energy Services
6/20/2019	5,548.00	90.75	309.37	IncAzi-MWD	Koltek Energy Services
6/20/2019	5,611.00	89.96	305.68	IncAzi-MWD	Koltek Energy Services
6/20/2019	5,674.00	90.88	305.86	IncAzi-MWD	Koltek Energy Services
6/20/2019	5,736.00	90.04	305.68	IncAzi-MWD	Koltek Energy Services
6/20/2019	5,799.00	91.67	304.89	IncAzi-MWD	Koltek Energy Services

I, the undersigned, certify that I acting in my capacity as Foreman for Hilcorp Energy Company, am authorized by said Company to make this report; and that said report was prepared under my supervision and directions, and that the facts stated herein are true to the best of my knowledge and belief.

Frankly P. L.

 (Printed Name)

Subscribed and sworn to me this 6/24/19
Wendy Jones

Notary Public in and for San Juan County, New Mexico

My Commission expires 1/2/2022

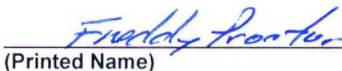


Well Name: TRAIL CANYON #104H

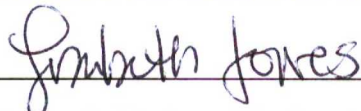
Survey Data

Date	MD (ftKB)	Incl (")	Azm (")	Method	Survey Company
6/20/2019	5,862.00	90.92	304.98	IncAzi-MWD	Koltek Energy Services
6/20/2019	5,925.00	91.36	306.47	IncAzi-MWD	Koltek Energy Services
6/20/2019	5,988.00	91.54	304.98	IncAzi-MWD	Koltek Energy Services
6/20/2019	6,051.00	93.47	304.89	IncAzi-MWD	Koltek Energy Services
6/20/2019	6,114.00	92.24	303.66	IncAzi-MWD	Koltek Energy Services
6/20/2019	6,176.00	91.71	304.71	IncAzi-MWD	Koltek Energy Services
6/20/2019	6,239.00	89.08	308.41	IncAzi-MWD	Koltek Energy Services
6/20/2019	6,302.00	89.03	310.08	IncAzi-MWD	Koltek Energy Services
6/20/2019	6,365.00	90.09	307.70	IncAzi-MWD	Koltek Energy Services
6/20/2019	6,428.00	89.78	307.88	IncAzi-MWD	Koltek Energy Services
6/20/2019	6,478.00	89.78	307.88	IncAzi-MWD	Koltek Energy Services

I, the undersigned, certify that I acting in my capacity as Foreman for Hilcorp Energy Company, am authorized by said Company to make this report; and that said report was prepared under my supervision and directions, and that the facts stated herein are true to the best of my knowledge and belief.

(Printed Name)

Subscribed and sworn to me this 6/24/2019


Notary Public in and for San Juan County, New Mexico

My Commission expires 1/2/2022


KOLTEK

ENERGY SERVICES

Survey Certification

06/13/2019

Koltek Job #: KES060113-1
Survey Job Type: Measurement While Drilling (MWD)
Operator: Hilcorp Energy Company
Well Name: Trail Canyon 104H
County, State: SAN JUAN COUNTY, NM
API #: 30-045-35884
Rig Name: Aztec 777
Reference Elevation: 6906 Ft GL 17 Ft KB 6923 Ft RKB
Surface Location: SEC 21 SESE UNIT P 32N 08W
Surface Location(Lat /Long): 36.9655860° N -107.6724360° W
Datum / Projection: US SPCS NAD 27 NM West Zone
North Reference: Grid North

Survey Dates: From To
 06/05/2019 06/13/2019
Survey Depths: 559 Ft 6616 Ft
Projection to BHL: 6616 Ft 6666 Ft

MWD Operator: MIKE LEACH
MWD Operator: PETE ALDRICH
Directional Driller: GREG JOHNSON
Directional Driller: JOHN CURTIS

"The data and calculations for this survey have been checked by me and conform to the calibration standards and operational procedures set forth by Koltek Energy Services. I am authorized and qualified to review the data, calculations and this report, and the report represents a true and correct Directional Survey of this well based on the original data obtained at the well site. Wellbore coordinates are calculated using the minimum curvature method."

Sincerely,

Kevin Wong Electronically Signed

Kevin Wong
Well Planner
Koltek Energy Services
7340 Grey Cloud Rd
Casper, WY 82604





Hilcorp Energy Company

Hilcorp Energy Company

San Juan County, NM (NAD27)

32N - 08W SEC 21

Trail Canyon 104H

30-045-35884

Original Hole

Survey: KES MWD

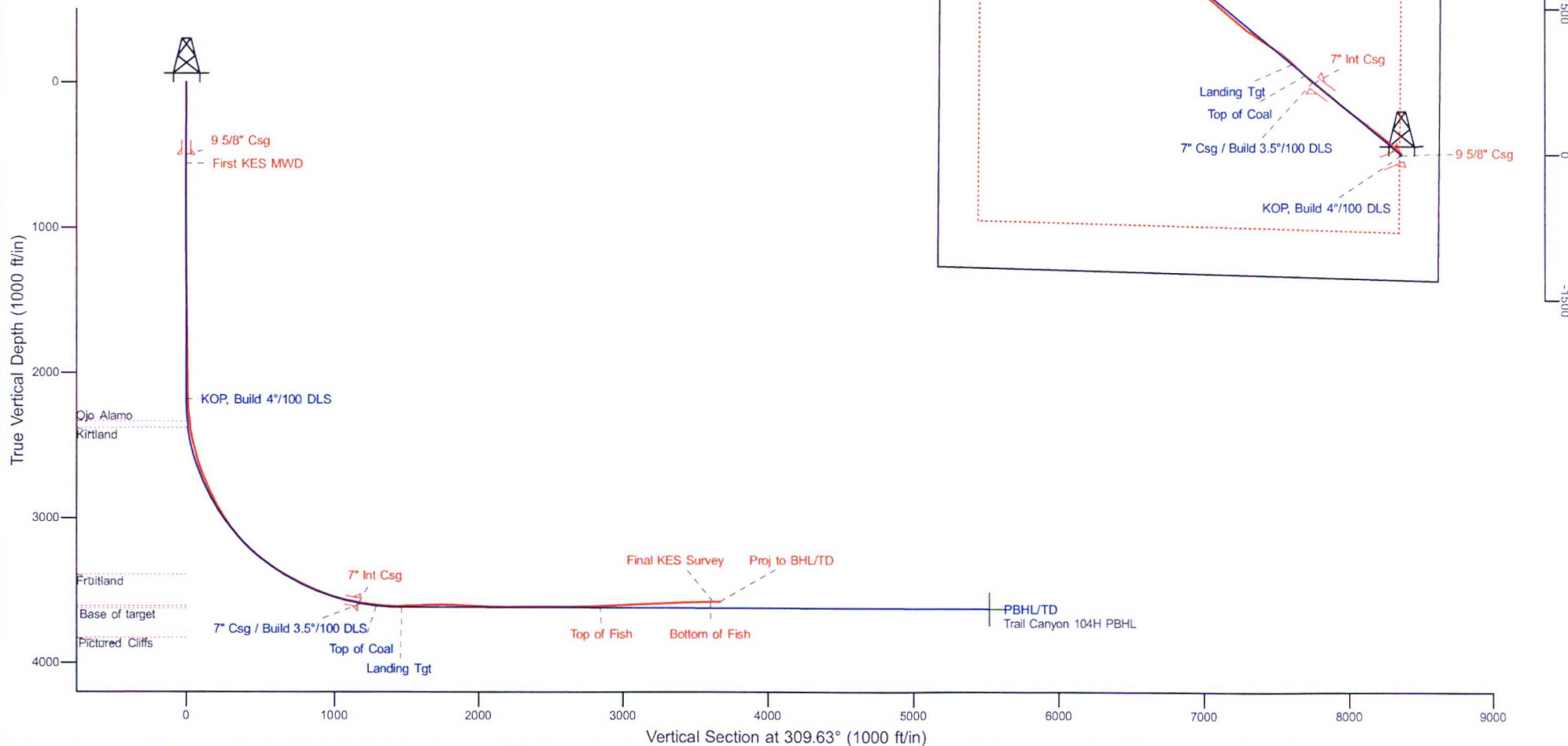
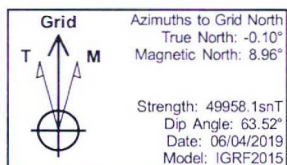
Survey Report - Geographic

14 June, 2019



Well: Trail Canyon 104H		Field: San Juan County, NM (NAD27)		Site: 32N - 08W SEC 21		Rig: Aztec 777	Plan: Final PvA Original Hole	
Borehole: Original Hole	Plan Date: 06-14-2019	Datum: US State Plane 1927	KB: 6923ft	Latitude: 36.9655860	Longitude: -107.6724360	Model: IGRF2015	Date: 04-Jun-19	DEC: 9.05°
VSec: 309.63deg	Grid Conv: 0.10	Zone: New Mexico West 3003	GL: 6906.00ft	Northing: 2170780.62	Easting: 547005.66	DIP: 63.52°	FS: 49958	North Ref: Grid

Actual Annotations									
MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation		
559.00	0.48	68.20	0.87	2.17	-0.26	2.34	First KES MWD		
4157.00	80.12	306.38	742.86	-903.98	1082.52	1182.43	7" Csg		
5836.00	92.07	311.81	1802.95	-2199.33	2629.85	2859.37	Top of Fish		
6599.00	90.89	307.24	2296.40	-2780.24	3339.65	3621.80	Bottom of Fish		
6616.00	90.79	307.00	2306.65	-2793.79	3355.10	3638.80	Final KES Survey		
6666.00	90.79	307.00	2336.74	-2833.72	3400.52	3688.79	Proj to BHL/TD		



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well Trail Canyon 104H
Project:	San Juan County, NM (NAD27)	TVD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Site:	32N - 08W SEC 21	MD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Well:	Trail Canyon 104H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	KES060113-1	Database:	EDM 5000.1 Single User Db

Project	San Juan County, NM (NAD27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site	32N - 08W SEC 21			
Site Position:		Northing:	2,170,780.62 usft	Latitude: 36.9655860
From:	Map	Easting:	547,005.66 usft	Longitude: -107.6724360
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.10 °

Well	Trail Canyon 104H, 32N 08W SEC 21 SESE: Lot P 1294 FSL 399 FEL			
Well Position	+N/-S	0.00 ft	Northing:	2,170,780.62 usft
	+E/-W	0.00 ft	Easting:	547,005.66 usft
Position Uncertainty	0.00 ft		Wellhead Elevation:	0.00 ft
			Ground Level:	6,906.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	04/08/19	9.07	63.52	49,975
	IGRF2015	06/04/19	9.05	63.52	49,958

Design	KES060113-1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	331.72	

Survey Program	Date	06/14/19			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
559.00	6,666.00	KES MWD (Original Hole)	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	2,170,780.62	547,005.66	36.9655860	-107.6724360	
Surface Tie-On										
501.00	0.43	68.20	501.00	0.70	1.75	2,170,781.32	547,007.40	36.9655879	-107.6724301	
9 5/8" Csg										
507.00	0.44	68.20	507.00	0.72	1.79	2,170,781.33	547,007.45	36.9655879	-107.6724299	
9-5/8" Csg										
559.00	0.48	68.20	558.99	0.87	2.17	2,170,781.49	547,007.83	36.9655883	-107.6724286	
First KES MWD										
622.00	0.35	44.47	621.99	1.10	2.55	2,170,781.72	547,008.21	36.9655890	-107.6724273	
685.00	0.53	33.83	684.99	1.48	2.85	2,170,782.10	547,008.51	36.9655900	-107.6724263	
748.00	0.62	34.45	747.99	2.01	3.21	2,170,782.62	547,008.86	36.9655915	-107.6724251	

Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well Trail Canyon 104H
Project:	San Juan County, NM (NAD27)	TVD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Site:	32N - 08W SEC 21	MD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Well:	Trail Canyon 104H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	KES060113-1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
810.00	0.62	34.54	809.98	2.56	3.59	2,170,783.18	547,009.24	36.9655930	-107.6724238
873.00	0.48	55.90	872.98	2.99	4.00	2,170,783.61	547,009.66	36.9655941	-107.6724223
936.00	0.53	61.08	935.98	3.28	4.47	2,170,783.90	547,010.13	36.9655949	-107.6724207
999.00	0.70	49.04	998.97	3.67	5.02	2,170,784.29	547,010.67	36.9655960	-107.6724188
1,062.00	1.01	53.17	1,061.97	4.26	5.75	2,170,784.87	547,011.41	36.9655976	-107.6724163
1,125.00	0.31	333.28	1,124.96	4.74	6.12	2,170,785.36	547,011.78	36.9655989	-107.6724151
1,187.00	0.40	315.96	1,186.96	5.05	5.89	2,170,785.66	547,011.55	36.9655998	-107.6724158
1,249.00	0.62	315.79	1,248.96	5.44	5.51	2,170,786.06	547,011.17	36.9656009	-107.6724172
1,310.00	0.62	304.01	1,309.96	5.86	5.01	2,170,786.48	547,010.66	36.9656020	-107.6724189
1,371.00	0.75	317.72	1,370.95	6.34	4.46	2,170,786.96	547,010.12	36.9656034	-107.6724207
1,432.00	0.66	319.30	1,431.95	6.91	3.97	2,170,787.52	547,009.62	36.9656049	-107.6724224
1,493.00	0.88	324.58	1,492.94	7.55	3.47	2,170,788.17	547,009.12	36.9656067	-107.6724241
1,555.00	0.92	330.29	1,554.93	8.37	2.94	2,170,788.99	547,008.60	36.9656089	-107.6724259
1,616.00	0.79	328.71	1,615.93	9.16	2.48	2,170,789.78	547,008.14	36.9656111	-107.6724275
1,677.00	0.75	337.32	1,676.92	9.89	2.11	2,170,790.50	547,007.77	36.9656131	-107.6724288
1,738.00	0.70	347.16	1,737.92	10.62	1.87	2,170,791.24	547,007.53	36.9656151	-107.6724296
1,800.00	0.75	354.64	1,799.91	11.39	1.75	2,170,792.01	547,007.41	36.9656172	-107.6724300
1,861.00	1.10	2.90	1,860.90	12.37	1.74	2,170,792.99	547,007.40	36.9656199	-107.6724300
1,922.00	0.97	353.23	1,921.89	13.47	1.71	2,170,794.09	547,007.37	36.9656229	-107.6724301
1,983.00	0.88	323.35	1,982.89	14.36	1.37	2,170,794.98	547,007.03	36.9656254	-107.6724313
2,044.00	0.92	328.18	2,043.88	15.15	0.83	2,170,795.77	547,006.49	36.9656276	-107.6724331
2,106.00	0.97	336.88	2,105.87	16.06	0.36	2,170,796.67	547,006.02	36.9656301	-107.6724347
2,168.00	1.14	343.03	2,167.86	17.13	-0.02	2,170,797.75	547,005.64	36.9656330	-107.6724360
2,200.00	1.93	324.49	2,199.85	17.87	-0.43	2,170,798.49	547,005.23	36.9656350	-107.6724374
2,231.00	3.34	325.98	2,230.81	19.05	-1.24	2,170,799.66	547,004.42	36.9656383	-107.6724402
2,263.00	4.97	325.63	2,262.73	20.96	-2.54	2,170,801.58	547,003.12	36.9656435	-107.6724446
2,294.00	6.46	322.38	2,293.57	23.45	-4.36	2,170,804.07	547,001.30	36.9656504	-107.6724508
2,326.00	7.69	318.95	2,325.33	26.49	-6.87	2,170,807.11	546,998.79	36.9656588	-107.6724594
2,357.00	8.70	315.79	2,356.01	29.74	-9.86	2,170,810.36	546,995.79	36.9656677	-107.6724696
2,388.00	9.67	311.39	2,386.62	33.14	-13.45	2,170,813.76	546,992.21	36.9656770	-107.6724819
2,420.00	10.81	308.67	2,418.11	36.79	-17.81	2,170,817.41	546,987.85	36.9656871	-107.6724968
2,451.00	12.04	309.02	2,448.49	40.64	-22.59	2,170,821.26	546,983.06	36.9656977	-107.6725131
2,483.00	12.52	307.00	2,479.76	44.83	-27.96	2,170,825.45	546,977.70	36.9657092	-107.6725315
2,514.00	13.49	306.74	2,509.96	49.02	-33.54	2,170,829.64	546,972.12	36.9657208	-107.6725506
2,546.00	15.07	307.61	2,540.97	53.79	-39.83	2,170,834.41	546,965.83	36.9657339	-107.6725720
2,577.00	16.08	308.84	2,570.84	58.94	-46.36	2,170,839.56	546,959.30	36.9657481	-107.6725944
2,608.00	16.35	311.22	2,600.60	64.51	-52.99	2,170,845.13	546,952.67	36.9657634	-107.6726170
2,640.00	17.89	311.13	2,631.18	70.71	-60.08	2,170,851.33	546,945.58	36.9657805	-107.6726413
2,671.00	19.56	309.72	2,660.54	77.16	-67.66	2,170,857.78	546,938.00	36.9657982	-107.6726672
2,703.00	20.96	309.81	2,690.56	84.25	-76.17	2,170,864.87	546,929.48	36.9658177	-107.6726963
2,734.00	21.84	308.49	2,719.42	91.39	-84.95	2,170,872.00	546,920.71	36.9658374	-107.6727263
2,765.00	22.63	309.20	2,748.12	98.75	-94.08	2,170,879.36	546,911.58	36.9658576	-107.6727575
2,797.00	23.38	308.23	2,777.57	106.57	-103.84	2,170,887.18	546,901.82	36.9658791	-107.6727909
2,828.00	24.39	309.02	2,805.92	114.40	-113.65	2,170,895.02	546,892.01	36.9659007	-107.6728244
2,860.00	25.49	309.20	2,834.93	122.91	-124.12	2,170,903.53	546,881.54	36.9659241	-107.6728602
2,891.00	26.76	310.25	2,862.77	131.64	-134.61	2,170,912.26	546,871.05	36.9659482	-107.6728960
2,922.00	27.77	309.72	2,890.32	140.76	-145.49	2,170,921.38	546,860.17	36.9659733	-107.6729332
2,954.00	28.65	309.11	2,918.52	150.37	-157.18	2,170,930.98	546,848.48	36.9659997	-107.6729732
2,985.00	29.58	309.11	2,945.60	159.88	-168.88	2,170,940.50	546,836.77	36.9660259	-107.6730132
3,017.00	30.45	308.41	2,973.31	169.90	-181.37	2,170,950.52	546,824.29	36.9660535	-107.6730559
3,048.00	31.51	308.93	2,999.89	179.87	-193.82	2,170,960.49	546,811.83	36.9660809	-107.6730984
3,079.00	32.96	308.58	3,026.11	190.22	-206.72	2,170,970.84	546,798.94	36.9661094	-107.6731425
3,111.00	34.41	308.58	3,052.74	201.29	-220.59	2,170,981.91	546,785.07	36.9661399	-107.6731900
3,142.00	36.12	308.05	3,078.05	212.39	-234.64	2,170,993.00	546,771.02	36.9661704	-107.6732380
3,174.00	37.79	307.35	3,103.62	224.15	-249.86	2,171,004.76	546,755.80	36.9662028	-107.6732900

Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well Trail Canyon 104H
Project:	San Juan County, NM (NAD27)	TVD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Site:	32N - 08W SEC 21	MD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Well:	Trail Canyon 104H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	KES060113-1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,205.00	39.38	307.53	3,127.85	235.90	-265.21	2,171,016.52	546,740.45	36.9662352	-107.6733425
3,237.00	41.22	306.91	3,152.25	248.42	-281.69	2,171,029.03	546,723.97	36.9662696	-107.6733988
3,268.00	43.24	307.96	3,175.21	261.08	-298.23	2,171,041.70	546,707.43	36.9663045	-107.6734554
3,299.00	45.00	308.49	3,197.46	274.44	-315.18	2,171,055.06	546,690.48	36.9663412	-107.6735133
3,331.00	46.71	308.67	3,219.75	288.76	-333.13	2,171,069.37	546,672.53	36.9663807	-107.6735747
3,362.00	48.47	308.76	3,240.65	303.07	-350.99	2,171,083.69	546,654.67	36.9664201	-107.6736357
3,394.00	50.14	308.76	3,261.52	318.26	-369.91	2,171,098.88	546,635.75	36.9664619	-107.6737004
3,425.00	51.37	307.79	3,281.13	333.13	-388.76	2,171,113.75	546,616.90	36.9665028	-107.6737648
3,456.00	52.87	307.88	3,300.16	348.14	-408.08	2,171,128.76	546,597.58	36.9665441	-107.6738309
3,488.00	54.14	307.26	3,319.20	363.82	-428.47	2,171,144.44	546,577.19	36.9665873	-107.6739006
3,519.00	55.24	306.74	3,337.11	379.05	-448.67	2,171,159.66	546,556.98	36.9666292	-107.6739696
3,551.00	56.38	307.00	3,355.10	394.93	-469.85	2,171,175.55	546,535.81	36.9666729	-107.6740420
3,582.00	57.83	306.21	3,371.93	410.45	-490.75	2,171,191.07	546,514.91	36.9667156	-107.6741135
3,614.00	59.41	307.09	3,388.59	426.76	-512.66	2,171,207.37	546,493.00	36.9667605	-107.6741884
3,645.00	60.51	306.91	3,404.11	442.91	-534.09	2,171,223.52	546,471.57	36.9668050	-107.6742617
3,676.00	60.64	306.47	3,419.34	459.04	-555.74	2,171,239.66	546,449.91	36.9668494	-107.6743357
3,708.00	61.74	307.35	3,434.76	475.88	-578.16	2,171,256.50	546,427.50	36.9668958	-107.6744123
3,739.00	62.36	308.41	3,449.29	492.69	-599.78	2,171,273.31	546,405.88	36.9669420	-107.6744862
3,771.00	63.54	308.76	3,463.85	510.47	-622.05	2,171,291.08	546,383.61	36.9669910	-107.6745624
3,802.00	64.42	310.16	3,477.44	528.17	-643.56	2,171,308.79	546,362.10	36.9670397	-107.6746359
3,833.00	65.70	309.99	3,490.52	546.27	-665.07	2,171,326.88	546,340.59	36.9670895	-107.6747094
3,865.00	67.32	310.08	3,503.27	565.15	-687.54	2,171,345.76	546,318.12	36.9671415	-107.6747862
3,896.00	68.16	310.08	3,515.01	583.62	-709.49	2,171,364.23	546,296.17	36.9671923	-107.6748612
3,928.00	69.57	309.46	3,526.55	602.71	-732.43	2,171,383.33	546,273.23	36.9672448	-107.6749397
3,959.00	71.63	309.20	3,536.85	621.24	-755.05	2,171,401.86	546,250.61	36.9672959	-107.6750170
3,991.00	73.70	309.02	3,546.38	640.51	-778.75	2,171,421.13	546,226.91	36.9673489	-107.6750980
4,022.00	75.23	309.28	3,554.68	659.37	-801.91	2,171,439.98	546,203.75	36.9674008	-107.6751772
4,053.00	76.60	309.28	3,562.23	678.40	-825.18	2,171,459.02	546,180.48	36.9674532	-107.6752567
4,085.00	77.56	309.81	3,569.38	698.26	-849.23	2,171,478.88	546,156.43	36.9675078	-107.6753389
4,116.00	78.66	309.98	3,575.77	717.72	-872.51	2,171,498.33	546,133.15	36.9675614	-107.6754185
4,129.00	79.06	309.72	3,578.28	725.89	-882.30	2,171,506.50	546,123.36	36.9675839	-107.6754520
4,157.00	80.12	306.38	3,583.34	742.86	-903.98	2,171,523.47	546,101.68	36.9676306	-107.6755261
7" Int Csg									
4,168.00	80.55	305.07	3,585.19	749.19	-912.79	2,171,529.81	546,092.87	36.9676480	-107.6755562
4,199.00	82.53	309.72	3,589.75	767.81	-937.14	2,171,548.42	546,068.52	36.9676993	-107.6756394
4,230.00	82.71	312.01	3,593.73	787.92	-960.39	2,171,568.54	546,045.27	36.9677546	-107.6757189
4,261.00	83.10	312.45	3,597.56	808.60	-983.16	2,171,589.21	546,022.50	36.9678115	-107.6757968
4,293.00	84.02	312.36	3,601.15	830.04	-1,006.64	2,171,610.66	545,999.02	36.9678705	-107.6758770
4,324.00	85.25	312.45	3,604.05	850.85	-1,029.43	2,171,631.47	545,976.23	36.9679278	-107.6759549
4,356.00	85.69	313.15	3,606.58	872.53	-1,052.84	2,171,653.14	545,952.82	36.9679874	-107.6760349
4,387.00	88.37	314.12	3,608.18	893.89	-1,075.24	2,171,674.50	545,930.42	36.9680462	-107.6761115
4,419.00	89.69	315.00	3,608.73	916.34	-1,098.04	2,171,696.95	545,907.62	36.9681080	-107.6761894
4,450.00	90.83	314.47	3,608.59	938.16	-1,120.06	2,171,718.77	545,885.60	36.9681680	-107.6762646
4,481.00	91.58	311.75	3,607.93	959.33	-1,142.68	2,171,739.95	545,862.98	36.9682263	-107.6763419
4,513.00	93.25	311.22	3,606.58	980.51	-1,166.63	2,171,761.13	545,839.03	36.9682846	-107.6764238
4,576.00	92.29	307.09	3,603.54	1,020.24	-1,215.42	2,171,800.85	545,790.24	36.9683939	-107.6765906
4,639.00	92.33	305.33	3,601.00	1,057.42	-1,266.21	2,171,838.04	545,739.45	36.9684963	-107.6767642
4,702.00	90.22	304.54	3,599.60	1,093.49	-1,317.84	2,171,874.10	545,687.82	36.9685956	-107.6769407
4,764.00	89.47	302.52	3,599.77	1,127.73	-1,369.52	2,171,908.35	545,636.14	36.9686899	-107.6771175
4,827.00	88.33	303.48	3,600.97	1,162.04	-1,422.34	2,171,942.65	545,583.32	36.9687843	-107.6772981
4,890.00	86.97	303.04	3,603.56	1,196.56	-1,474.98	2,171,977.17	545,530.68	36.9688794	-107.6774781
4,953.00	87.45	304.45	3,606.62	1,231.51	-1,527.30	2,172,012.13	545,478.36	36.9689756	-107.6776570
5,016.00	87.45	304.89	3,609.43	1,267.31	-1,579.06	2,172,047.93	545,426.60	36.9690742	-107.6778340
5,078.00	87.19	308.23	3,612.33	1,304.20	-1,628.80	2,172,084.81	545,376.86	36.9691757	-107.6780040
5,130.00	88.41	310.08	3,614.32	1,337.01	-1,669.09	2,172,117.62	545,336.57	36.9692660	-107.6781417

Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well Trail Canyon 104H
Project:	San Juan County, NM (NAD27)	TVD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Site:	32N - 08W SEC 21	MD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Well:	Trail Canyon 104H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	KES060113-1	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,191.00	90.13	310.87	3,615.10	1,376.60	-1,715.49	2,172,157.21	545,290.17	36.9693750	-107.6783003
5,253.00	90.48	311.22	3,614.77	1,417.31	-1,762.25	2,172,197.92	545,243.42	36.9694870	-107.6784602
5,314.00	90.31	310.78	3,614.35	1,457.33	-1,808.28	2,172,237.94	545,197.38	36.9695972	-107.6786175
5,375.00	89.96	310.78	3,614.21	1,497.17	-1,854.47	2,172,277.78	545,151.19	36.9697068	-107.6787754
5,436.00	90.31	310.87	3,614.06	1,537.05	-1,900.63	2,172,317.66	545,105.03	36.9698166	-107.6789332
5,497.00	90.04	310.25	3,613.88	1,576.71	-1,946.97	2,172,357.33	545,058.69	36.9699257	-107.6790916
5,558.00	90.26	310.87	3,613.72	1,616.38	-1,993.32	2,172,396.99	545,012.34	36.9700349	-107.6792501
5,620.00	90.88	312.80	3,613.10	1,657.73	-2,039.51	2,172,438.34	544,966.16	36.9701486	-107.6794079
5,681.00	90.97	312.36	3,612.12	1,699.00	-2,084.42	2,172,479.61	544,921.24	36.9702622	-107.6795614
5,742.00	90.97	312.36	3,611.08	1,740.09	-2,129.49	2,172,520.70	544,876.18	36.9703753	-107.6797155
5,813.00	91.93	311.75	3,609.29	1,787.63	-2,182.19	2,172,568.25	544,823.48	36.9705061	-107.6798956
5,836.00	92.07	311.81	3,608.48	1,802.95	-2,199.33	2,172,583.56	544,806.34	36.9705483	-107.6799542
Top of Fish									
5,874.00	92.29	311.92	3,607.04	1,828.29	-2,227.60	2,172,608.91	544,778.06	36.9706180	-107.6800509
5,935.00	92.33	312.10	3,604.58	1,869.08	-2,272.89	2,172,649.70	544,732.77	36.9707302	-107.6802057
5,996.00	92.29	311.66	3,602.12	1,909.77	-2,318.27	2,172,690.39	544,687.39	36.9708422	-107.6803608
6,058.00	92.33	311.31	3,599.62	1,950.81	-2,364.68	2,172,731.42	544,640.98	36.9709551	-107.6805194
6,119.00	92.66	311.66	3,596.97	1,991.18	-2,410.33	2,172,771.79	544,595.33	36.9710662	-107.6806755
6,180.00	92.20	310.16	3,594.38	2,031.09	-2,456.39	2,172,811.70	544,549.27	36.9711760	-107.6808329
6,241.00	92.54	310.60	3,591.86	2,070.57	-2,502.82	2,172,851.19	544,502.84	36.9712847	-107.6809916
6,302.00	92.59	310.69	3,589.13	2,110.27	-2,549.06	2,172,890.88	544,456.61	36.9713939	-107.6811497
6,365.00	92.11	309.20	3,586.55	2,150.68	-2,597.31	2,172,931.29	544,408.35	36.9715052	-107.6813147
6,428.00	91.89	309.37	3,584.35	2,190.55	-2,646.05	2,172,971.16	544,359.62	36.9716149	-107.6814813
6,491.00	92.24	308.41	3,582.08	2,230.07	-2,695.05	2,173,010.69	544,310.61	36.9717237	-107.6816488
6,554.00	91.14	307.88	3,580.22	2,268.97	-2,744.57	2,173,049.58	544,261.09	36.9718307	-107.6818181
6,599.00	90.89	307.24	3,579.42	2,296.40	-2,780.24	2,173,077.01	544,225.42	36.9719062	-107.6819401
Bottom of Fish									
6,616.00	90.79	307.00	3,579.18	2,306.65	-2,793.79	2,173,087.27	544,211.87	36.9719344	-107.6819864
Current Survey									
6,666.00	90.79	307.00	3,578.49	2,336.74	-2,833.72	2,173,117.36	544,171.94	36.9720173	-107.6821229
Proj to BHL/TD - Trail Canyon 104H PBHL									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
501.00	501.00	9 5/8" Csg	9-5/8	12-1/4
4,157.00	3,583.34	7" Int Csg	7	8-3/4

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
0.00	0.00	0.00	0.00	Surface Tie-On
507.00	507.00	0.72	1.79	9-5/8" Csg
559.00	558.99	0.87	2.17	First KES MWD
5,836.00	3,608.48	1,802.95	-2,199.33	Top of Fish
6,599.00	3,579.42	2,296.40	-2,780.24	Bottom of Fish
6,616.00	3,579.17	742.86	-903.98	Current Survey
6,666.00	3,578.49	2,306.65	-2,793.79	Proj to BHL/TD



06/16/2019

Koltek Job #:	KES060113-1			
Survey Job Type:	Measurement While Drilling (MWD)			
Operator:	Hilcorp Energy Company			
Well Name:	Trail Canyon 104H			
County, State:	SAN JUAN COUNTY, NM			
API #:	30-045-35884-01			
Rig Name:	Aztec 777			
Reference Elevation:	6906 Ft GL	17 Ft KB	6923 Ft RKB	
Surface Location:	SEC 21	SESE	UNIT P	32N 08W
Surface Location(Lat /Long):	36.9655860° N		-107.6724360° W	
Datum / Projection:	US SPCS NAD 27		NM West Zone	
North Reference:	Grid North			
Survey Dates:	From		To	
	06/14/2019		06/15/2019	
Survey Depths:	4419 Ft		5559 Ft	
Projection to BHL:	5559 Ft		5611 Ft	
MWD Operator:	MIKE LEACH			
MWD Operator:	PETE ALDRICH			
Directional Driller:	GREG JOHNSON			
Directional Driller:	JOHN CURTIS			

"The data and calculations for this survey have been checked by me and conform to the calibration standards and operational procedures set forth by Koltek Energy Services. I am authorized and qualified to review the data, calculations and this report, and the report represents a true and correct Directional Survey of this well based on the original data obtained at the well site. Wellbore coordinates are calculated using the minimum curvature method."

Sincerely,

Kevin Wong Electronically Signed

Kevin Wong
Well Planner
Koltek Energy Services
7340 Grey Cloud Rd
Casper, WY 82604





Hilcorp Energy Company

Hilcorp Energy Company

San Juan County, NM (NAD27)

32N - 08W SEC 21

Trail Canyon 104H

30-045-35884

ST01

Survey: ST01 KES MWD

Survey Report - Geographic

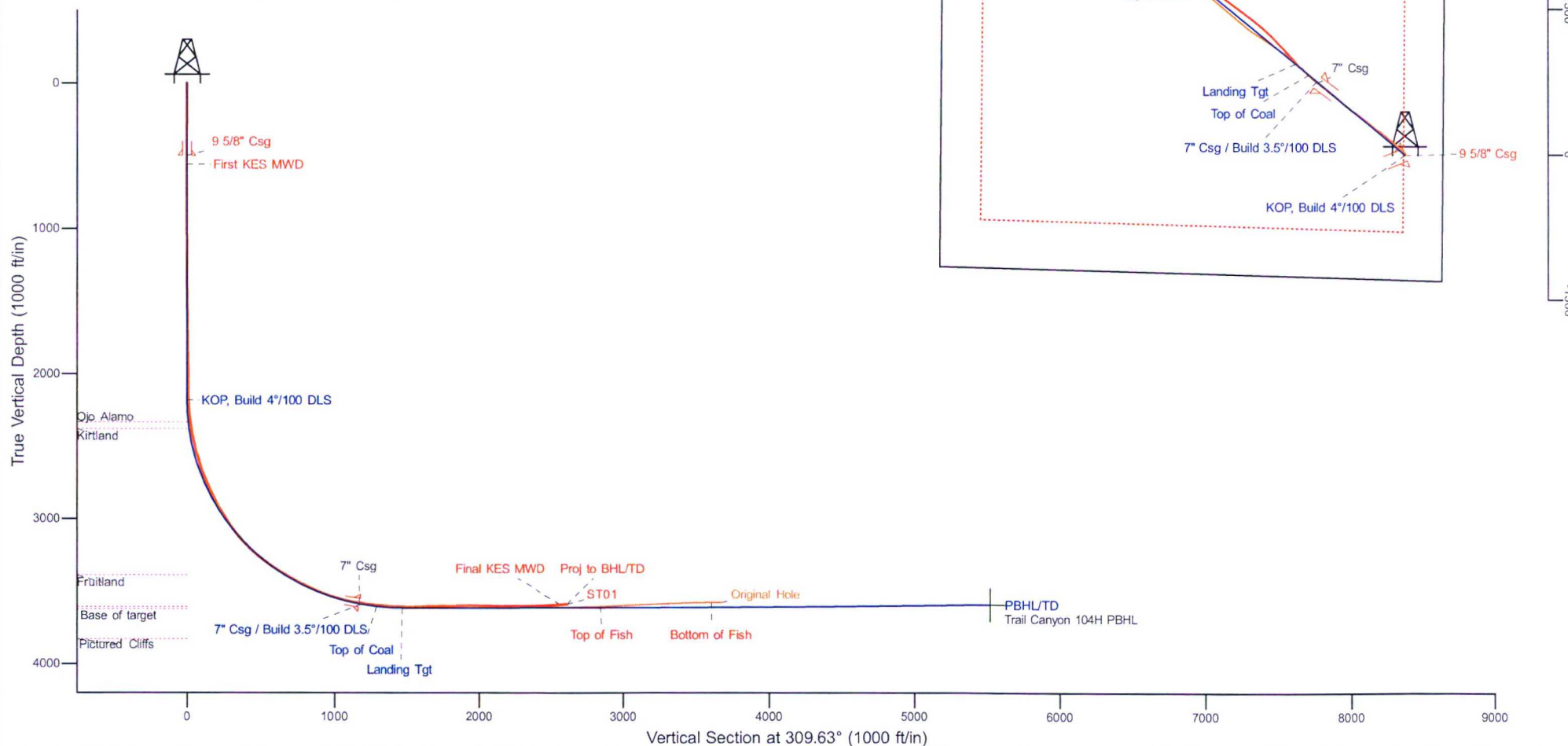
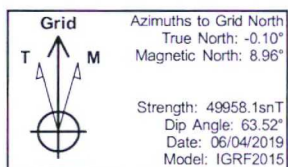
17 June, 2019



Well: Trail Canyon 104H		Field: San Juan County, NM (NAD27)		Site: 32N - 08W SEC 21		Rig: Aztec 777 Plan: Final ST01 PvA	
Borehole: Original Hole	Plan Date: 06-17-2019	Datum: US State Plane 1927	KB: 6923ft	Latitude: 36.9655860	Longitude: -107.6724360	Model: IGRF2015	Date: 04-Jun-19
VSec: 309.63deg	Grid Conv: 0.10	Zone: New Mexico West 3003	GL: 6906.00ft	Northing: 2170780.62	Easting: 547005.66	DIP: 63.52°	FS: 49958
						DEC: 9.05°	North Ref: Grid

Actual Annotations ST01

MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
4419.00	89.69	315.00	916.34	-1098.04	1429.93	1442.94	Tie-On Original Hole
4451.00	88.81	317.99	939.54	-1120.06	1461.77	1474.93	First ST01 KES MWD
5559.00	92.90	305.59	1669.44	-1947.98	2565.44	2582.49	Final KES MWD
5611.00	92.90	305.59	1699.66	-1990.21	2617.15	2634.42	Proj to BHL/TD



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well Trail Canyon 104H
Project:	San Juan County, NM (NAD27)	TVD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Site:	32N - 08W SEC 21	MD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Well:	Trail Canyon 104H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	KES060113-1 ST01	Database:	EDM 5000.1 Single User Db

Project	San Juan County, NM (NAD27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site		32N - 08W SEC 21						
Site Position:		Northing:	2,170,780.62	usft	Latitude:	36.9655860		
From:	Map	Easting:	547,005.66	usft	Longitude:	-107.6724360		
Position Uncertainty:	0.00	ft	Slot Radius:	13-3/16	"	Grid Convergence:	0.10	°

Well	Trail Canyon 104H, 32N 08W SEC 21 SESE: Lot P 1294 FSL 399 FEL					
Well Position	+N/-S	0.00 ft	Northing:	2,170,780.62 usft	Latitude:	36.9655860
	+E/-W	0.00 ft	Easting:	547,005.66 usft	Longitude:	-107.6724360
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	6,906.00 ft

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	06/13/19	9.05	63.52	49,955

Design	KES060113-1 ST01				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	4,419.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	310.87	

Survey Program	Date	06/17/19			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
559.00	4,419.00	Original Hole KES MWD (Original Hole)	MWD	MWD - Standard	
4,451.00	5,611.00	ST01 KES MWD (ST01)	MWD	MWD - Standard	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,419.00	89.69	315.00	3,608.73	916.34	-1,098.04	2,171,696.95	545,907.62	36.9681080	-107.6761894
Tie-On Original Hole									
4,451.00	88.81	317.99	3,609.14	939.54	-1,120.06	2,171,720.16	545,885.60	36.9681718	-107.6762646
First ST01 KES MWD									
4,514.00	91.27	319.22	3,609.10	986.80	-1,161.72	2,171,767.41	545,843.94	36.9683018	-107.6764069
4,577.00	89.60	316.76	3,608.62	1,033.60	-1,203.88	2,171,814.22	545,801.79	36.9684306	-107.6765510
4,639.00	89.69	316.58	3,609.01	1,078.70	-1,246.42	2,171,859.32	545,759.24	36.9685546	-107.6766964
4,702.00	91.63	317.55	3,608.28	1,124.82	-1,289.33	2,171,905.43	545,716.33	36.9686815	-107.6768430
4,763.00	92.46	317.11	3,606.10	1,169.64	-1,330.64	2,171,950.26	545,675.02	36.9688048	-107.6769842
4,825.00	92.68	315.44	3,603.32	1,214.40	-1,373.45	2,171,995.02	545,632.21	36.9689279	-107.6771304
4,886.00	91.27	314.03	3,601.22	1,257.31	-1,416.76	2,172,037.92	545,588.90	36.9690460	-107.6772784

Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well Trail Canyon 104H
Project:	San Juan County, NM (NAD27)	TVD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Site:	32N - 08W SEC 21	MD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Well:	Trail Canyon 104H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	KES060113-1 ST01	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,947.00	88.51	310.52	3,601.34	1,298.33	-1,461.88	2,172,078.94	545,543.78	36.9691589	-107.6774327
5,008.00	87.58	309.11	3,603.42	1,337.37	-1,508.71	2,172,117.98	545,496.95	36.9692663	-107.6775927
5,070.00	88.99	307.35	3,605.28	1,375.71	-1,557.39	2,172,156.33	545,448.27	36.9693719	-107.6777592
5,131.00	90.35	308.14	3,605.63	1,413.05	-1,605.62	2,172,193.67	545,400.04	36.9694746	-107.6779241
5,192.00	89.88	308.23	3,605.50	1,450.76	-1,653.57	2,172,231.38	545,352.09	36.9695784	-107.6780880
5,253.00	90.09	307.97	3,605.52	1,488.40	-1,701.57	2,172,269.01	545,304.09	36.9696820	-107.6782521
5,315.00	90.53	305.77	3,605.18	1,525.60	-1,751.17	2,172,306.21	545,254.50	36.9697844	-107.6784216
5,345.00	90.35	305.59	3,604.95	1,543.09	-1,775.53	2,172,323.71	545,230.13	36.9698326	-107.6785050
5,376.00	89.21	305.42	3,605.07	1,561.10	-1,800.77	2,172,341.71	545,204.89	36.9698822	-107.6785912
5,406.00	91.85	307.26	3,604.80	1,578.87	-1,824.93	2,172,359.49	545,180.73	36.9699311	-107.6786739
5,437.00	93.21	307.09	3,603.43	1,597.59	-1,849.61	2,172,378.20	545,156.06	36.9699826	-107.6787582
5,498.00	93.12	305.95	3,600.06	1,633.83	-1,898.55	2,172,414.44	545,107.11	36.9700824	-107.6789256
5,559.00	92.90	305.59	3,596.86	1,669.44	-1,947.98	2,172,450.05	545,057.68	36.9701804	-107.6790946
Final KES MWD									
5,611.00	92.90	305.59	3,594.23	1,699.66	-1,990.21	2,172,480.28	545,015.45	36.9702636	-107.6792390
Proj to BHL/TD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Trail Canyon 104H PBHI	0.00	0.00	3,595.00	3,522.93	-4,253.90	2,174,303.54	542,751.77	36.9752816	-107.6869783
- survey misses target center by 2906.65ft at 5611.00ft MD (3594.23 TVD, 1699.66 N, -1990.21 E)									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
501.00	501.00	9 5/8" Csg	9-5/8	12-1/4	
4,157.00	3,583.34	7" Csg	7	8-3/4	

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
4,419.00	3,608.73	916.34	-1,098.04	Tie-On Original Hole
4,451.00	3,609.14	939.54	-1,120.06	First ST01 KES MWD
5,559.00	3,596.86	1,669.44	-1,947.98	Final KES MWD
5,611.00	3,594.23	1,699.66	-1,990.21	Proj to BHL/TD

Checked By: _____ Approved By: _____ Date: _____

KOLTEK

ENERGY SERVICES

Survey Certification

06/20/2019

Koltek Job #: KES060113-1
Survey Job Type: Measurement While Drilling (MWD)
Operator: Hilcorp Energy Company
Well Name: Trail Canyon 104H
County, State: SAN JUAN COUNTY, NM
API #: 30-045-35884-02
Rig Name: Aztec 777
Reference Elevation: 6906 Ft GL 17 Ft KB 6923 Ft RKB
Surface Location: SEC 21 SESE UNIT P 32N 08W
Surface Location(Lat /Long): 36.9655860° N -107.6724360° W
Datum / Projection: US SPCS NAD 27 NM West Zone
North Reference: Grid North

Survey Dates: From To
 06/18/2019 06/19/2019
Survey Depths: 4022 Ft 6428 Ft
Projection to BHL: 6428 Ft 6478 Ft

MWD Operator: MIKE LEACH
MWD Operator: PETE ALDRICH
Directional Driller: GREG JOHNSON
Directional Driller: JOHN CURTIS

"The data and calculations for this survey have been checked by me and conform to the calibration standards and operational procedures set forth by Koltek Energy Services. I am authorized and qualified to review the data, calculations and this report, and the report represents a true and correct Directional Survey of this well based on the original data obtained at the well site. Wellbore coordinates are calculated using the minimum curvature method."

Sincerely,

Kevin Wong Electronically Signed

Kevin Wong
Well Planner
Koltek Energy Services
7340 Grey Cloud Rd
Casper, WY 82604





Hilcorp Energy Company

Hilcorp Energy Company

San Juan County, NM (NAD27)

32N - 08W SEC 21

Trail Canyon 104H

30-045-35884

ST02

Survey: ST02 KES MWD

Survey Report - Geographic

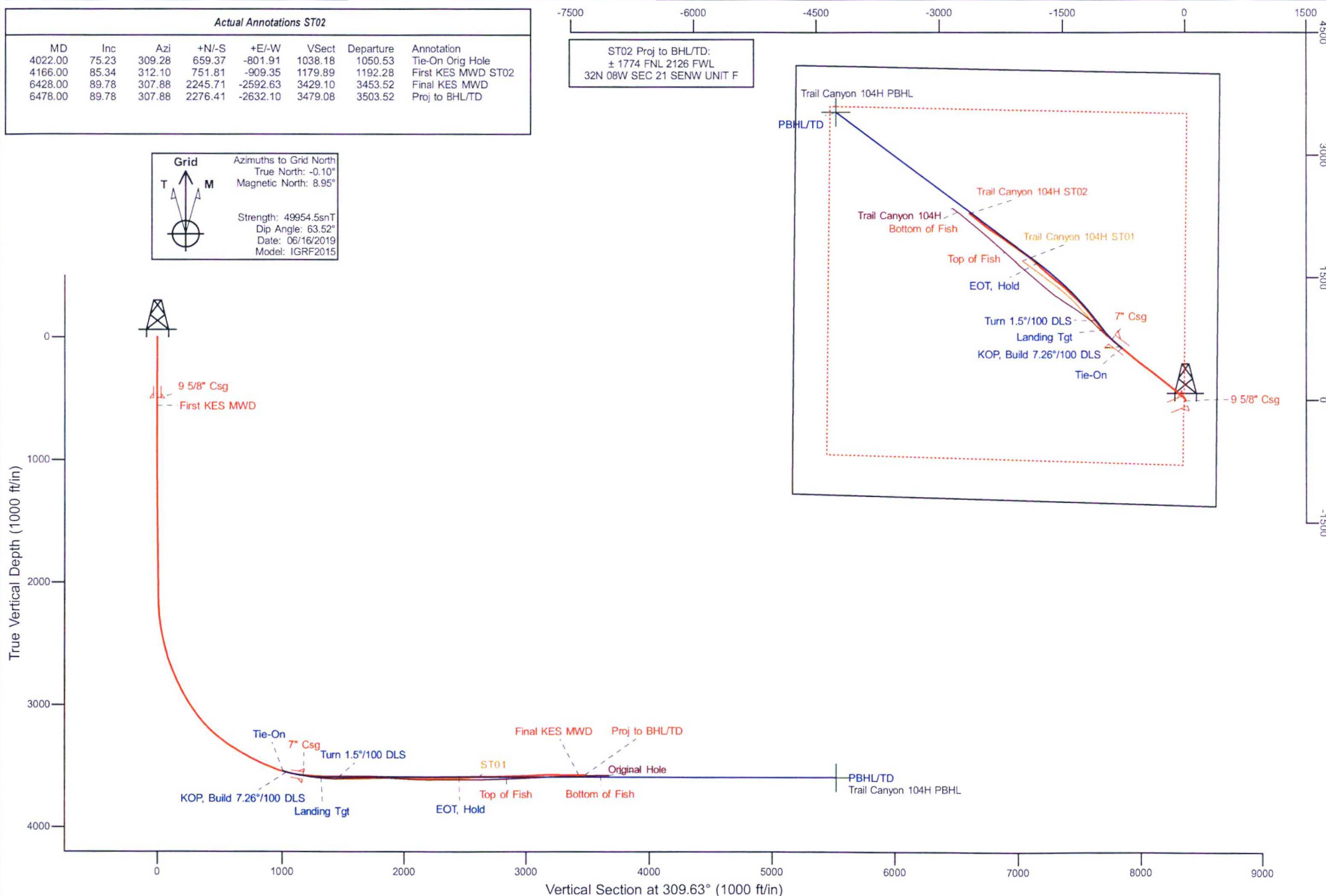
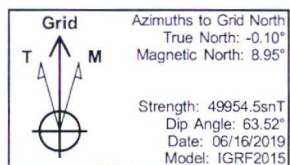
20 June, 2019



Well: Trail Canyon 104H		Field: San Juan County, NM (NAD27)		Site: 32N - 08W SEC 21		Rig: Aztec 777	Plan: ST02 Rev0	
Borehole: ST02	Plan Date: 06-20-2019	Datum: US State Plane 1927	KB: 6923ft	Latitude: 36.9655860	Longitude: -107.6724360	Model: IGRF2015	Date: 16-Jun-19	DEC: 9.05°
VSec: 309.63deg	Grid Conv: 0.10	Zone: New Mexico West 3003	GL: 6906.00ft	Northing: 2170780.62	Easting: 547005.66	DIP: 63.52°	FS: 49955	North Ref: Grid

Actual Annotations ST02

MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
4022.00	75.23	309.28	659.37	-801.91	1038.18	1050.53	Tie-On Orig Hole
4166.00	85.34	312.10	751.81	-909.35	1179.89	1192.28	First KES MWD ST02
6428.00	89.78	307.88	2245.71	-2592.63	3429.10	3453.52	Final KES MWD
6478.00	89.78	307.88	2276.41	-2632.10	3479.08	3503.52	Proj to BHL/TD



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well Trail Canyon 104H
Project:	San Juan County, NM (NAD27)	TVD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Site:	32N - 08W SEC 21	MD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Well:	Trail Canyon 104H	North Reference:	Grid
Wellbore:	ST02	Survey Calculation Method:	Minimum Curvature
Design:	KES060113-1 ST02	Database:	EDM 5000.1 Single User Db

Project	San Juan County, NM (NAD27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site	32N - 08W SEC 21				
Site Position:		Northing:	2,170,780.62 usft	Latitude:	36.9655860
From:	Map	Easting:	547,005.66 usft	Longitude:	-107.6724360
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.10 °

Well	Trail Canyon 104H, 32N 08W SEC 21 SESE: Lot P 1294 FSL 399 FEL					
Well Position	+N/-S	0.00 ft	Northing:	2,170,780.62 usft	Latitude:	36.9655860
	+E/-W	0.00 ft	Easting:	547,005.66 usft	Longitude:	-107.6724360
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	6,906.00 ft

Wellbore	ST02				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	06/16/19	9.05	63.52	49,955

Design	KES060113-1 ST02				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	4,022.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	309.58	

Survey Program	Date	06/20/19			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
559.00	4,022.00	Original Hole KES MWD (Original Hole)	MWD	MWD - Standard	
4,166.00	6,478.00	ST02 KES MWD (ST02)	MWD	MWD - Standard	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,022.00	75.23	309.28	3,554.68	659.37	-801.91	2,171,439.98	546,203.75	36.9674008	-107.6751772
Tie-On Orig Hole									
4,166.00	85.34	312.10	3,578.96	751.81	-909.35	2,171,532.43	546,096.31	36.9676552	-107.6755444
First KES MWD ST02									
4,198.00	85.56	315.96	3,581.50	773.98	-932.28	2,171,554.60	546,073.38	36.9677162	-107.6756228
4,229.00	86.09	317.37	3,583.75	796.47	-953.49	2,171,577.08	546,052.17	36.9677781	-107.6756953
4,260.00	87.36	319.92	3,585.53	819.70	-973.94	2,171,600.31	546,031.72	36.9678420	-107.6757651
4,292.00	87.10	319.92	3,587.07	844.15	-994.52	2,171,624.77	546,011.14	36.9679092	-107.6758354
4,323.00	87.45	319.39	3,588.55	867.75	-1,014.56	2,171,648.37	545,991.10	36.9679741	-107.6759039
4,355.00	88.55	318.95	3,589.66	891.95	-1,035.47	2,171,672.57	545,970.19	36.9680407	-107.6759753
4,386.00	89.96	320.09	3,590.07	915.53	-1,055.60	2,171,696.14	545,950.06	36.9681056	-107.6760441

Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well Trail Canyon 104H
Project:	San Juan County, NM (NAD27)	TVD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Site:	32N - 08W SEC 21	MD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Well:	Trail Canyon 104H	North Reference:	Grid
Wellbore:	ST02	Survey Calculation Method:	Minimum Curvature
Design:	KES060113-1 ST02	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,418.00	90.35	320.45	3,589.98	940.14	-1,076.05	2,171,720.75	545,929.61	36.9681733	-107.6761140
4,449.00	89.78	320.80	3,589.94	964.10	-1,095.72	2,171,744.72	545,909.94	36.9682392	-107.6761811
4,480.00	89.74	320.27	3,590.07	988.03	-1,115.42	2,171,768.65	545,890.24	36.9683050	-107.6762485
4,543.00	89.91	321.15	3,590.27	1,036.79	-1,155.31	2,171,817.41	545,850.35	36.9684391	-107.6763847
4,606.00	91.01	322.64	3,589.76	1,086.36	-1,194.19	2,171,866.98	545,811.47	36.9685754	-107.6765175
4,669.00	89.96	320.36	3,589.23	1,135.66	-1,233.40	2,171,916.27	545,772.26	36.9687110	-107.6766515
4,731.00	88.73	316.76	3,589.94	1,182.13	-1,274.43	2,171,962.74	545,731.24	36.9688388	-107.6767916
4,794.00	87.50	312.89	3,592.01	1,226.50	-1,319.07	2,172,007.12	545,686.59	36.9689609	-107.6769442
4,857.00	88.99	312.27	3,593.94	1,269.11	-1,365.44	2,172,049.72	545,640.22	36.9690782	-107.6771027
4,920.00	90.22	314.73	3,594.37	1,312.47	-1,411.13	2,172,093.09	545,594.53	36.9691975	-107.6772589
4,982.00	90.35	312.98	3,594.06	1,355.42	-1,455.84	2,172,136.04	545,549.82	36.9693157	-107.6774117
5,045.00	89.56	308.85	3,594.11	1,396.68	-1,503.44	2,172,177.29	545,502.22	36.9694292	-107.6775744
5,108.00	89.30	308.85	3,594.74	1,436.19	-1,552.50	2,172,216.81	545,453.16	36.9695380	-107.6777421
5,171.00	90.57	310.08	3,594.81	1,476.23	-1,601.13	2,172,256.85	545,404.53	36.9696482	-107.6779083
5,234.00	90.22	311.04	3,594.38	1,517.20	-1,648.99	2,172,297.81	545,356.67	36.9697609	-107.6780719
5,297.00	90.87	312.01	3,593.78	1,558.96	-1,696.16	2,172,339.58	545,309.50	36.9698758	-107.6782332
5,360.00	91.45	311.83	3,592.50	1,601.04	-1,743.02	2,172,381.66	545,262.64	36.9699916	-107.6783934
5,422.00	92.51	314.12	3,590.36	1,643.28	-1,788.36	2,172,423.89	545,217.31	36.9701078	-107.6785483
5,485.00	89.21	310.94	3,589.41	1,685.85	-1,834.76	2,172,466.46	545,170.90	36.9702250	-107.6787069
5,548.00	90.75	309.37	3,589.44	1,726.47	-1,882.91	2,172,507.09	545,122.75	36.9703368	-107.6788715
5,611.00	89.96	305.68	3,589.05	1,764.84	-1,932.87	2,172,545.45	545,072.79	36.9704424	-107.6790423
5,674.00	90.88	305.86	3,588.58	1,801.66	-1,983.98	2,172,582.28	545,021.68	36.9705438	-107.6792171
5,736.00	90.04	305.68	3,588.09	1,837.90	-2,034.28	2,172,618.51	544,971.38	36.9706435	-107.6793891
5,799.00	91.67	304.89	3,587.15	1,874.29	-2,085.70	2,172,654.90	544,919.96	36.9707437	-107.6795649
5,862.00	90.92	304.98	3,585.72	1,910.35	-2,137.34	2,172,690.97	544,868.33	36.9708430	-107.6797414
5,925.00	91.36	306.47	3,584.47	1,947.13	-2,188.47	2,172,727.74	544,817.19	36.9709442	-107.6799163
5,988.00	91.54	304.98	3,582.88	1,983.90	-2,239.60	2,172,764.52	544,766.06	36.9710455	-107.6800911
6,051.00	93.47	304.89	3,580.12	2,019.94	-2,291.19	2,172,800.56	544,714.47	36.9711447	-107.6802675
6,114.00	92.24	303.66	3,576.98	2,055.38	-2,343.19	2,172,835.99	544,662.48	36.9712423	-107.6804453
6,176.00	91.71	304.71	3,574.85	2,090.19	-2,394.44	2,172,870.81	544,611.22	36.9713381	-107.6806206
6,239.00	89.08	308.41	3,574.41	2,127.71	-2,445.03	2,172,908.32	544,560.63	36.9714414	-107.6807935
6,302.00	89.03	310.08	3,575.45	2,167.56	-2,493.81	2,172,948.17	544,511.85	36.9715511	-107.6809603
6,365.00	90.09	307.70	3,575.94	2,207.11	-2,542.84	2,172,987.72	544,462.82	36.9716599	-107.6811279
6,428.00	89.78	307.88	3,576.01	2,245.71	-2,592.63	2,173,026.32	544,413.03	36.9717662	-107.6812981
Final KES MWD									
6,478.00	89.78	307.88	3,576.20	2,276.41	-2,632.10	2,173,057.02	544,373.57	36.9718507	-107.6814331
Proj to BHL/TD									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
501.00	9 5/8" Csg		9-5/8	12-1/4



Survey Report - Geographic



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well Trail Canyon 104H
Project:	San Juan County, NM (NAD27)	TVD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Site:	32N - 08W SEC 21	MD Reference:	KB 17 ft @ 6923.00ft (Aztec 777)
Well:	Trail Canyon 104H	North Reference:	Grid
Wellbore:	ST02	Survey Calculation Method:	Minimum Curvature
Design:	KES060113-1 ST02	Database:	EDM 5000.1 Single User Db

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,022.00	3,554.68	659.37	-801.91	Tie-On Orig Hole
4,166.00	3,578.96	751.81	-909.35	First KES MWD ST02
6,428.00	3,576.01	2,245.71	-2,592.63	Final KES MWD
6,478.00	3,576.20	2,276.41	-2,632.10	Proj to BHL/TD

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------