

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Adrienne Sandoval, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 11/29/2018

Well information;

Operator Trieb Federal, Well Name and Number LEOI Com # 1H

API# 30-045-35906, Section 33, Township 30 N/S, Range 10 E/W

Conditions of Approval: (See the below checked and handwritten conditions)

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
- ☒ Hold C-104 for directional survey & "As Drilled" Plat
- ☒ Hold C-104 for NSL, NSP, DHC
- ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ☐ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
 - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
 - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
 - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ☐ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ☐ Submit Gas Capture Plan form prior to spudding or initiating recompletion operations
- ☒ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ☒ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ☒ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

NMOC Approved by Signature

8/1/19

Date

30

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

NMOCD

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

JUL 28 2019

DISTRICT 111

5. Lease Serial No.

NMSF0077282

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.

TRIEB FEDERAL COM 601

1H

1a. Type of work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☒ Single Zone ☐ Multiple Zone

2. Name of Operator

HILCORP ENERGY COMPANY

3a. Address

1111 Travis Street Houston TX 77002

3b. Phone No. (include area code)

(713)209-2400

9. API Well No.

30-045-35906

10. Field and Pool, or Exploratory

BASIN MANCOS

4. Location of Well (Report location clearly and in accordance with any State requirements. *)

At surface ^H LOT 8 / 2492 FNL / 405 FEL / LAT 36.769118 / LONG -107.882183

At proposed prod. zone ^F LOT 6 / 1878 FNL / 2329 FWL / LAT 36.770742 / LONG -107.85499

11. Sec., T. R. M. or Blk. and Survey or Area

SEC 33 / T30N / R10W / NMP

14. Distance in miles and direction from nearest town or post office*

3 miles

12. County or Parish

SAN JUAN

13. State

NM

15. Distance from proposed* location to nearest property or lease line, ft.
(Also to nearest drig. unit line, if any) 167 feet

16. No of acres in lease
793.62

17. Spacing Unit dedicated to this well
476.76

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 649 feet

19. Proposed Depth
6078 feet / 13636 feet

20. BLM/BIA Bond No. in file
FED: NMB001486

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
6050 feet

22. Approximate date work will start*
04/01/2019

23. Estimated duration
45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.

2. A Drilling Plan.

3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).

4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).

5. Operator certification.

6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature

(Electronic Submission)

Name (Printed Typed)

Amanda Walker / Ph: (505)324-5122

Date

11/29/2018

Title

Operations/Regulatory Technician

Approved by (Signature)

Name (Printed Typed)

Date

7/19/19

Title

Office

FARMINGTON

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212 make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

DRILLING OPERATIONS
AUTHORITIES ARE SUBJECT TO
COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS"

LESSEE AND OPERATOR FROM
OBTAINING ANY OTHER AUTHORIZATION
REQUIRED FOR OPERATIONS ON
FEDERAL AND INDIAN LANDS

This action is subject to technical
and procedural review pursuant to
43 CFR 3165.3 and appeal
pursuant to 43 CFR 3165.4

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-045-35900	Pool Code 97232	Pool Name BASIN MANCOS
Property Code 325994	Property Name TRIEB FEDERAL 601 com	Well Number 1H
OGRIID No. 372171	Operator Name HILCORP ENERGY COMPANY	Elevation 6050'

10 Surface Location

U. or Lot No.	Section	Township	Range	Lot No.	Feet from the	North/South line	Feet from the	East/West line	County
H	33	30N	10W	8	2492	NORTH	405	EAST	SAN JUAN

11 Bottom Hole Location If Different From Surface

U. or Lot No.	Section	Township	Range	Lot No.	Feet from the	North/South line	Feet from the	East/West line	County
F	35	30N	10W	6	1878	NORTH	2329	WEST	SAN JUAN

Dedicated Acres 476.76	N/2 - Section 34 NW/4 - Section 35	Joint or Infill	Consolidation Code	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 an undivided 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 heretofore entered by the division.

Signature Amanda Walker Date 12/19/2018
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: NOVEMBER 27, 2018
Date of Survey: JULY 20, 2018

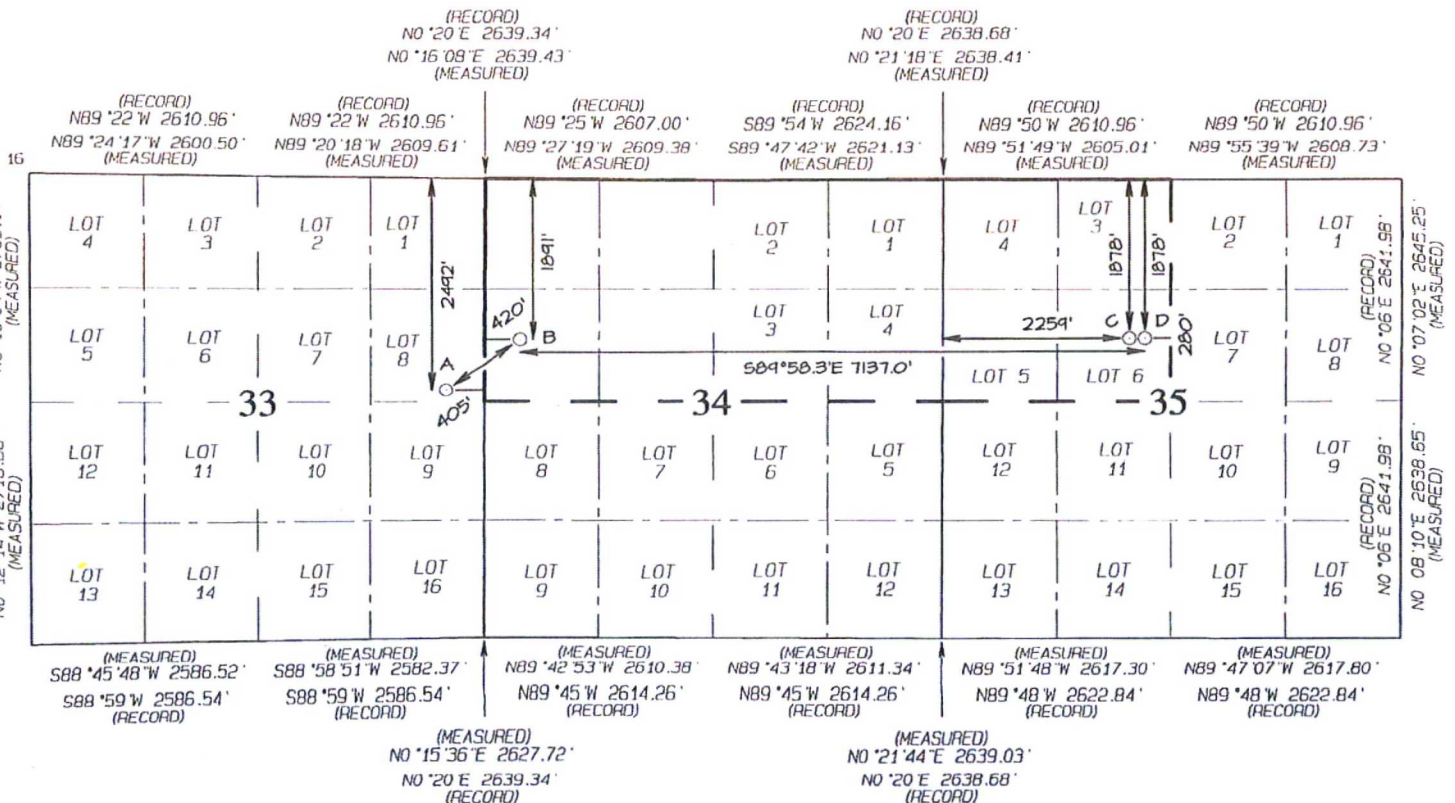
Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

A SURFACE LOCATION 2492' FNL 405' FEL SEC 33, T30N, R10W LAT: 36.769113°N LONG: 107.881563°W DATUM: NAD1927 LAT: 36.769118°N LONG: 107.882183°W DATUM: NAD1983	B FIRST TAKE POINT 1891' FNL 420' FWL SEC 34, T30N, R10W LAT: 36.770740°N LONG: 107.878739°W DATUM: NAD1927 LAT: 36.770745°N LONG: 107.879358°W DATUM: NAD1983	C LAST TAKE POINT 1878' FNL 2259' FWL SEC 35, T30N, R10W LAT: 36.770737°N LONG: 107.854609°W DATUM: NAD1927 LAT: 36.770742°N LONG: 107.855228°W DATUM: NAD1983	D BOTTOM HOLE LOCATION 1878' FNL 2329' FWL SEC 35, T30N, R10W LAT: 36.770737°N LONG: 107.854371°W DATUM: NAD1927 LAT: 36.770742°N LONG: 107.854990°W DATUM: NAD1983
--	--	--	---

A	N54°25'57"E 1017.39'	B	589°50.3'E 7067.4'	C	589°50.3'E 696.1'	D	
----------	-------------------------	----------	-----------------------	----------	----------------------	----------	--



Hilcorp Energy Company

Technical Plan

1. Location

TRIEB FEDERAL COM 601 1H

SHL: 2492' FNL, 405' FEL -- T 30N, R 10W, Sec 33

BHL: 1878' FNL, 2329' FWL -- T 30N, R 10W, Sec 35

GL: 6050'

2. Geological Markers

Anticipated formation tops with comments of any possible water, gas, or oil shows are indicated below:

<u>Formation</u>	<u>(TVD)</u>	<u>(MD)</u>	<u>Remarks</u>
San Jose	Surface	Surface	Wet
Ojo Alamo	1354'	1359'	Wet
Kirtland	1484'	1489'	Wet
Fruitland	2116'	2125'	Possible Gas/Water
Pictured Cliffs	2612'	2624'	Wet
Lewis Shale	3500'	3883'	
Massive Cliffhouse	3947'	3967'	Possible Gas/Water
Menefee	4358'	4380'	Possible Gas/Water
Point Lookout	4852'	4877'	Possible Gas/Water
Mancos	5282'	5311'	Oil/Gas
Mancos Lateral Target	6051'	6101'	Oil/Gas

3. Pressure Control Equipment

See Attached BOPE & Choke Manifold Schematic for a diagram of pressure control equipment.

- BOPE will be nipped up on top of wellhead after surface casing is set and cemented.
- Pressure control configuration will be designed to meet and exceed 5M standards.
- All equipment will have 5M pressure ratings.
- A rotating head will be rigged up on top of annular as seen in attached diagram.

4. Casing & Cement Program

A) The proposed casing program is outlined below:

Proposed Casing				
Casing	Hole Size	Casing Size	Weight/Grade	Depth
Surface	17-1/2"	13-3/8"	54.5#, J-55, BTC, New	0' - 400' (MD)
Intermediate	12-1/4"	9-5/8"	40.0#, P-110 IC, LTC, New	0' - 5,356' (MD)
Production	8-1/2"	5-1/2"	20.0#, P-110, BTC, New	0' - 13,636' (MD)

The production casing will be run from total MD to surface. If the 8-1/2" hole is not drilled to total MD, the production casing setting depth and length will be adjusted accordingly. A toe initiation sliding sleeve will be installed at the toe of the production casing.

B) The proposed cement program is shown below:

Cement Program						
Interval	Depth (MD)	Sacks	Slurry	Excess	Volume	Planned Cement Top
Surface	400'	503	Lead Cmt: Premium Cement 2% CaCl, 0.125 lb/sk Poley E flake 1.175 ft ³ /sk -- 5.14 gal/sk, 15.8 ppg	100%	591 ft ³	Surface
Intermediate	4356'	911	Lead Cmt: Halcem Sytem 0.3% HR-5, 0.125 lb/sk Poly E flake, 1.974 ft ³ /sk -- 10.28 gal/sk, 12.3 ppg	30%	1799 ft ³	Surface
	5356'	328	Tail Cmt: Varicem Cement 0.1% HR-5, 0.125 lb/sk Poly E flake, 1.295 ft ³ /sk -- 5.69 gal/sk, 13.5 ppg	30%	424 ft ³	4356'
Production	13636'	1890	Tail Cmt: Bondcem 0.3% Super CBL, 0.1% HR -601, 6.08 gal/sk FW. 13.3 ppg, 1.356 ft ³ /sk	10%	2580 ft ³	4000'

Actual cement volumes will be determined and may be adjusted onsite based on well conditions. For the intermediate hole, a 2-stage cement job may be performed if hole conditions indicate during operations. Stage tool will be placed appropriately as conditions indicate.

C) The proposed centralizer program is shown below:

Centralizer Program	
Interval	Centralizers
Surface	1 per joint on bottom 3 joints
Intermediate	1 above intermediate shoe joint with collar clamp 1 every 3 rd joint to surface
Production	1 per joint in horizontal section of production interval 1 every 3 rd joint in vertical section of production interval

To allow adequate time for cement to achieve a minimum of 500 psi compressive strength, a minimum of 8 hours wait on cement time for each hole section will be observed. The wellhead will not be installed, casing will not be tested, and the prior casing shoe will not be drilled out until adequate wait on cement time is achieved.

5. Drilling Fluids

A) The proposed drilling fluid program is outlined below:

Mud Program					
Interval	Mud Type	Weight (ppg)	Fluid Loss (cc)	Invert Ratio (Diesel/Brine)	Depth (MD)
Surface	Water / Gel System	8.3 - 9.2	NC		0-400'
Intermediate	LSND / Gel system	8.4 - 9	<6		400 – 5356'
Production	Oil Based Mud	10 - 12	6-8	70/30 – 75/25	5356– TD'

Oil based mud will be an Invert Mud. Base fluid will be diesel. Brine fluid will be CaCl or KCl.

LCM may be added to the mud system if hole conditions indicate.

- ✓ B) Closed loop equipment will be utilized for solids control. Cuttings from surface, intermediate, and production hole will be hauled to an approved disposal site.



Hilcorp Energy Company

Trieb Federal Com 601 1H

6. Abnormal Pressures & Hazards

- No over-pressured intervals expected.
- Estimated Reservoir Pressure = 1875 psi. (Based on a pore pressure gradient of 0.31 psi/ft from layer pressure tests of Mancos formation in offset well)
- There is some offset Fruitland Coal, Mesa Verde, and Picture Cliffs production within the area which could result in these respective formations being under pressured.
- No hydrogen sulfide gas is expected based on nearby well production.

7. Testing, Logging, Coring

- Mud Logs: Mud loggers will be rigged up from KOP to production hole TD.
- MWD: Directional tools from KOP to production hole TD.
- LWD: Gamma Ray will be utilized in production hole for well placement.
- Cased Hole Logs: A Temp Survey or CBL will be ran on the intermediate hole if cement is not circulated to surface during intermediate cement job.

8. Directional Plan

The planned wellbore directional plan and plot is attached.

The planned directional plan is built off geological targets from offset wells. The production hole will be landed and drilled within target formation horizontally utilizing LWD equipment to help steer the wellbore. On site adjustments will be made to the directional plan as formation and hole indicates.



Hilcorp Energy Company

Trieb Federal Com 601 1H

9. Completion

a) Pressure Test

- Pressure test 5-1/2" production casing to allowable frac pressure. Hold test for 30 minutes. Cycle pressure to activate toe sleeve

b) Stimulation

- Stimulate with approximately 10,000,000 pounds of proppant in 200,000 bbls of water; the number of stages and amount of proppant will be adjusted based on real-time pumping conditions during the stimulation
- Stages will be perforated using wireline and isolated using frac plugs
- Plugs will be drilled out and stimulation fluid will be flowed back

c) Running Tubing

- Production tubing will be run and landed at the top of the horizontal section of the well



Hilcorp Energy Corp.

San Juan, NM NAD27

Trieb Fed Pad

Trieb Federal Com 601 1H

OH

Plan #2

Anticollision Report

09 November, 2018



Scientific Drilling

www.scientificdrilling.com



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
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 15,000.00 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	11/9/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	13,636.27	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
Offset Well - Wellbore - Design						
Trieb Fed Pad						
Grenier A3 - OH - OH	9,656.23	6,007.40	367.96	132.27	1.561	CC, ES, SF
Grenier A8 - OH - OH	12,760.83	6,160.67	423.18	91.93	1.278	Level 3, CC, ES, SF
Trieb Federal Com 601 2H - OH - Plan #2	500.00	500.00	15.09	11.86	4.677	CC
Trieb Federal Com 601 2H - OH - Plan #2	1,000.00	1,001.40	16.97	10.09	2.466	ES
Trieb Federal Com 601 2H - OH - Plan #2	13,636.27	13,882.67	1,128.07	659.51	2.408	SF
Trieb Federal Com 602 1H - OH - Plan #2	500.00	500.00	75.00	71.78	23.247	CC, ES
Trieb Federal Com 602 1H - OH - Plan #2	13,636.27	13,604.82	1,409.99	942.67	3.017	SF
Trieb Federal Com 602 2H - OH - Plan #2	500.00	500.00	49.91	46.68	15.470	CC, ES
Trieb Federal Com 602 2H - OH - Plan #2	13,636.27	14,001.38	2,712.14	2,243.03	5.781	SF
Trieb Federal Com 603 1H - OH - Plan #2	500.00	500.00	29.36	26.14	9.101	CC, ES
Trieb Federal Com 603 1H - OH - Plan #2	800.00	797.83	37.49	32.08	6.932	SF
Trieb Federal Com 603 2H - OH - Plan #2	500.00	500.00	28.85	25.63	8.943	CC, ES
Trieb Federal Com 603 2H - OH - Plan #2	600.00	598.92	32.20	28.25	8.160	SF
Trieb Federal Com 603 3H - OH - Plan #2	500.00	500.00	25.11	21.88	7.782	CC
Trieb Federal Com 603 3H - OH - Plan #2	600.00	599.22	25.48	21.52	6.440	ES
Trieb Federal Com 603 3H - OH - Plan #2	900.00	896.67	32.53	26.33	5.243	SF
Trieb Federal Com 603 4H - OH - Plan #2	500.00	500.00	52.00	48.77	16.117	CC, ES
Trieb Federal Com 603 4H - OH - Plan #2	700.00	695.86	64.43	59.75	13.784	SF
Trieb Federal Strat Test 600 #1 - OH - Plan #1	500.00	500.00	24.80	21.58	7.688	CC, ES
Trieb Federal Strat Test 600 #1 - OH - Plan #1	700.00	699.84	29.88	25.22	6.411	SF

Offset Design												Trieb Fed Pad - Grenier A3 - OH - OH		Offset Site Error: 0.00 usft	
Survey Program: 7120-UNKNOWN												Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
0.00	0.00	0.00	0.00	0.00	0.00	76.45	960.28	3,984.12	4,098.65						
100.00	100.00	40.00	40.00	0.18	0.80	76.45	960.28	3,984.12	4,098.21	4,097.23	0.98	4,184.261			
200.00	200.00	140.00	140.00	0.54	2.80	76.45	960.28	3,984.12	4,098.21	4,094.87	3.34	1,227.780			
300.00	300.00	240.00	240.00	0.90	4.80	76.45	960.28	3,984.12	4,098.21	4,092.51	5.70	719.442			
400.00	400.00	340.00	340.00	1.25	6.80	76.45	960.28	3,984.12	4,098.21	4,090.16	8.05	508.788			
500.00	500.00	440.00	440.00	1.61	8.80	76.45	960.28	3,984.12	4,098.21	4,087.80	10.41	393.555			
600.00	599.98	539.98	539.98	1.97	10.80	64.12	960.28	3,984.12	4,097.45	4,084.68	12.77	320.846			
700.00	699.84	639.84	639.84	2.33	12.80	64.23	960.28	3,984.12	4,095.17	4,080.04	15.13	270.732			

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Grenier A3 - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 7120-UNKNOWN													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)						
800.00	799.45	739.45	739.45	2.70	14.79	64.41	960.28	3.984.12	4,091.38	4,073.90	17.48	234.064		
900.00	898.83	838.83	838.83	3.06	16.78	64.57	960.28	3.984.12	4,086.58	4,066.74	19.83	206.048		
1,000.00	998.21	938.21	938.21	3.43	18.76	64.71	960.28	3.984.12	4,081.77	4,059.58	22.19	183.952		
1,100.00	1,097.58	1,037.58	1,037.58	3.80	20.75	64.85	960.28	3.984.12	4,076.99	4,052.44	24.55	166.079		
1,200.00	1,196.96	1,136.96	1,136.96	4.18	22.74	64.99	960.28	3.984.12	4,072.23	4,045.32	26.91	151.329		
1,300.00	1,296.33	1,236.33	1,236.33	4.56	24.73	65.13	960.28	3.984.12	4,067.50	4,038.22	29.27	138.952		
1,400.00	1,395.71	1,335.71	1,335.71	4.94	26.71	65.27	960.28	3.984.12	4,062.79	4,031.15	31.64	128.420		
1,500.00	1,495.08	1,435.08	1,435.08	5.32	28.70	65.42	960.28	3.984.12	4,058.11	4,024.11	34.00	119.350		
1,600.00	1,594.46	1,534.46	1,534.46	5.70	30.69	65.56	960.28	3.984.12	4,053.45	4,017.08	36.37	111.457		
1,700.00	1,693.83	1,633.83	1,633.83	6.08	32.68	65.70	960.28	3.984.12	4,048.82	4,010.09	38.73	104.528		
1,800.00	1,793.21	1,733.21	1,733.21	6.46	34.66	65.85	960.28	3.984.12	4,044.21	4,003.11	41.10	98.396		
1,900.00	1,892.58	1,832.58	1,832.58	6.85	36.65	65.99	960.28	3.984.12	4,039.63	3,996.17	43.47	92.931		
2,000.00	1,991.96	1,931.96	1,931.96	7.23	38.64	66.13	960.28	3.984.12	4,035.08	3,989.24	45.84	88.030		
2,100.00	2,091.33	2,031.33	2,031.33	7.62	40.63	66.28	960.28	3.984.12	4,030.55	3,982.35	48.21	83.611		
2,200.00	2,190.71	2,130.71	2,130.71	8.00	42.61	66.42	960.28	3.984.12	4,026.05	3,975.47	50.57	79.606		
2,300.00	2,290.08	2,230.08	2,230.08	8.38	44.60	66.57	960.28	3.984.12	4,021.57	3,968.63	52.94	75.959		
2,400.00	2,389.46	2,329.46	2,329.46	8.77	46.59	66.71	960.28	3.984.12	4,017.12	3,961.81	55.31	72.625		
2,500.00	2,488.83	2,428.83	2,428.83	9.15	48.58	66.86	960.28	3.984.12	4,012.70	3,955.01	57.68	69.565		
2,600.00	2,588.20	2,528.20	2,528.20	9.54	50.56	67.00	960.28	3.984.12	4,008.30	3,948.25	60.05	66.746		
2,700.00	2,687.58	2,627.58	2,627.58	9.92	52.55	67.15	960.28	3.984.12	4,003.93	3,941.50	62.42	64.142		
2,800.00	2,786.95	2,726.95	2,726.95	10.31	54.54	67.30	960.28	3.984.12	3,999.58	3,934.79	64.79	61.728		
2,900.00	2,886.33	2,826.33	2,826.33	10.70	56.53	67.44	960.28	3.984.12	3,995.26	3,928.10	67.16	59.485		
3,000.00	2,985.70	2,925.70	2,925.70	11.08	58.51	67.59	960.28	3.984.12	3,990.97	3,921.44	69.53	57.396		
3,100.00	3,085.08	3,025.08	3,025.08	11.47	60.50	67.74	960.28	3.984.12	3,986.70	3,914.80	71.91	55.444		
3,200.00	3,184.45	3,124.45	3,124.45	11.85	62.49	67.89	960.28	3.984.12	3,982.47	3,908.19	74.28	53.617		
3,300.00	3,283.83	3,223.83	3,223.83	12.24	64.48	68.04	960.28	3.984.12	3,978.25	3,901.61	76.65	51.903		
3,400.00	3,383.20	3,323.20	3,323.20	12.62	66.46	68.18	960.28	3.984.12	3,974.07	3,895.05	79.02	50.293		
3,500.00	3,482.58	3,422.58	3,422.58	13.01	68.45	68.33	960.28	3.984.12	3,969.91	3,888.52	81.39	48.776		
3,600.00	3,581.95	3,521.95	3,521.95	13.40	70.44	68.48	960.28	3.984.12	3,965.78	3,882.02	83.76	47.346		
3,700.00	3,681.33	3,621.33	3,621.33	13.78	72.43	68.63	960.28	3.984.12	3,961.67	3,875.54	86.13	45.995		
3,800.00	3,780.70	3,720.70	3,720.70	14.17	74.41	68.78	960.28	3.984.12	3,957.60	3,869.09	88.50	44.716		
3,900.00	3,880.08	3,820.08	3,820.08	14.55	76.40	68.93	960.28	3.984.12	3,953.55	3,862.67	90.88	43.505		
4,000.00	3,979.45	3,919.45	3,919.45	14.94	78.39	69.08	960.28	3.984.12	3,949.52	3,856.28	93.25	42.355		
4,100.00	4,078.82	4,018.82	4,018.82	15.33	80.38	69.23	960.28	3.984.12	3,945.53	3,849.91	95.62	41.262		
4,200.00	4,178.20	4,118.20	4,118.20	15.71	82.36	69.38	960.28	3.984.12	3,941.56	3,843.57	97.99	40.223		
4,300.00	4,277.57	4,217.57	4,217.57	16.10	84.35	69.53	960.28	3.984.12	3,937.62	3,837.26	100.37	39.233		
4,400.00	4,376.95	4,316.95	4,316.95	16.49	86.34	69.69	960.28	3.984.12	3,933.71	3,830.97	102.74	38.289		
4,500.00	4,476.32	4,416.32	4,416.32	16.87	88.33	69.84	960.28	3.984.12	3,929.83	3,824.72	105.11	37.388		
4,600.00	4,575.70	4,515.70	4,515.70	17.26	90.31	69.99	960.28	3.984.12	3,925.97	3,818.49	107.48	36.527		
4,700.00	4,675.07	4,615.07	4,615.07	17.65	92.30	70.14	960.28	3.984.12	3,922.14	3,812.29	109.86	35.703		
4,800.00	4,774.45	4,714.45	4,714.45	18.03	94.29	70.29	960.28	3.984.12	3,918.34	3,806.12	112.23	34.914		
4,900.00	4,873.82	4,813.82	4,813.82	18.42	96.28	70.45	960.28	3.984.12	3,914.57	3,799.97	114.60	34.158		
5,000.00	4,973.20	4,913.20	4,913.20	18.80	98.26	70.60	960.28	3.984.12	3,910.83	3,793.86	116.97	33.433		
5,100.00	5,072.57	5,012.57	5,012.57	19.19	100.25	70.75	960.28	3.984.12	3,907.11	3,787.77	119.35	32.738		
5,200.00	5,171.95	5,111.95	5,111.95	19.58	102.24	70.91	960.28	3.984.12	3,903.43	3,781.71	121.72	32.069		
5,300.00	5,271.32	5,211.32	5,211.32	19.96	104.23	71.06	960.28	3.984.12	3,899.77	3,775.68	124.09	31.426		
5,400.00	5,370.69	5,310.69	5,310.69	20.35	106.21	71.21	960.28	3.984.12	3,896.11	3,769.64	126.47	30.808		
5,500.00	5,469.49	5,409.49	5,409.49	20.74	108.19	71.36	960.28	3.984.12	3,892.45	3,763.55	128.84	30.155		
5,600.00	5,568.90	5,508.90	5,508.90	21.13	110.17	71.51	960.28	3.984.12	3,888.79	3,757.46	131.21	29.437		
5,700.00	5,668.31	5,608.31	5,608.31	21.52	112.15	71.66	960.28	3.984.12	3,885.13	3,751.37	133.58	28.719		
5,800.00	5,767.72	5,707.72	5,707.72	21.91	114.13	71.81	960.28	3.984.12	3,881.47	3,745.28	135.95	28.001		
5,900.00	5,867.13	5,807.13	5,807.13	22.30	116.11	71.96	960.28	3.984.12	3,877.81	3,739.19	138.32	27.283		

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

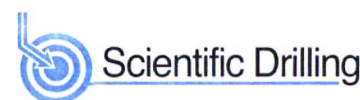
Offset Design Trieb Fed Pad - Grenier A3 - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 7120-UNKNOWN													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,000.00	5,891.65	5,831.65	5,831.65	22.93	116.63	-1.35	960.28	3,984.12	3,636.86	3,498.09	138.78	26.207		
6,100.00	5,950.17	5,890.17	5,890.17	23.68	117.80	-4.22	960.28	3,984.12	3,555.90	3,415.78	140.12	25.378		
6,200.00	5,996.95	5,936.95	5,936.95	24.69	118.74	-8.39	960.28	3,984.12	3,467.72	3,326.55	141.17	24.563		
6,300.00	6,031.08	5,971.08	5,971.08	25.98	119.42	-16.02	960.28	3,984.12	3,374.04	3,232.11	141.92	23.773		
6,400.00	6,051.90	5,991.90	5,991.90	27.55	119.84	-34.94	960.28	3,984.12	3,276.70	3,134.33	142.36	23.017		
6,500.00	6,059.00	5,999.00	5,999.00	29.33	119.98	-88.69	960.28	3,984.12	3,177.60	3,035.11	142.49	22.301		
6,600.00	6,059.27	5,999.27	5,999.27	31.29	119.99	-88.73	960.28	3,984.12	3,078.29	2,935.83	142.46	21.608		
6,700.00	6,059.53	5,999.53	5,999.53	33.41	119.99	-88.77	960.28	3,984.12	2,979.03	2,836.59	142.45	20.913		
6,800.00	6,059.80	5,999.80	5,999.80	35.66	120.00	-88.82	960.28	3,984.12	2,879.83	2,737.39	142.44	20.218		
6,900.00	6,060.07	6,000.07	6,000.07	38.01	120.00	-88.86	960.28	3,984.12	2,780.68	2,638.23	142.44	19.522		
7,000.00	6,060.33	6,000.33	6,000.33	40.45	120.01	-88.90	960.28	3,984.12	2,681.59	2,539.13	142.46	18.824		
7,100.00	6,060.60	6,000.60	6,000.60	42.97	120.01	-88.94	960.28	3,984.12	2,582.57	2,440.08	142.49	18.124		
7,200.00	6,060.87	6,000.87	6,000.87	45.54	120.02	-88.98	960.28	3,984.12	2,483.63	2,341.09	142.55	17.423		
7,300.00	6,061.13	6,001.13	6,001.13	48.17	120.02	-89.02	960.28	3,984.12	2,384.78	2,242.16	142.63	16.721		
7,400.00	6,061.40	6,001.40	6,001.40	50.84	120.03	-89.06	960.28	3,984.12	2,286.03	2,143.30	142.74	16.016		
7,500.00	6,061.66	6,001.66	6,001.66	53.55	120.03	-89.11	960.28	3,984.12	2,187.40	2,044.51	142.88	15.309		
7,600.00	6,061.93	6,001.93	6,001.93	56.28	120.04	-89.15	960.28	3,984.12	2,088.89	1,945.81	143.08	14.599		
7,700.00	6,062.20	6,002.20	6,002.20	59.05	120.04	-89.19	960.28	3,984.12	1,990.53	1,847.20	143.33	13.887		
7,800.00	6,062.46	6,002.46	6,002.46	61.83	120.05	-89.23	960.28	3,984.12	1,892.34	1,748.69	143.66	13.172		
7,900.00	6,062.73	6,002.73	6,002.73	64.64	120.05	-89.27	960.28	3,984.12	1,794.36	1,650.29	144.07	12.454		
8,000.00	6,063.00	6,003.00	6,003.00	67.46	120.06	-89.31	960.28	3,984.12	1,696.61	1,552.01	144.60	11.733		
8,100.00	6,063.26	6,003.26	6,003.26	70.30	120.07	-89.35	960.28	3,984.12	1,599.14	1,453.87	145.26	11.009		
8,200.00	6,063.53	6,003.53	6,003.53	73.16	120.07	-89.40	960.28	3,984.12	1,502.00	1,355.90	146.10	10.281		
8,300.00	6,063.79	6,003.79	6,003.79	76.02	120.08	-89.44	960.28	3,984.12	1,405.26	1,258.10	147.15	9.550		
8,400.00	6,064.06	6,004.06	6,004.06	78.90	120.08	-89.48	960.28	3,984.12	1,309.01	1,160.53	148.48	8.816		
8,500.00	6,064.33	6,004.33	6,004.33	81.79	120.09	-89.52	960.28	3,984.12	1,213.37	1,063.22	150.14	8.081		
8,600.00	6,064.59	6,004.59	6,004.59	84.68	120.09	-89.56	960.28	3,984.12	1,118.49	966.25	152.24	7.347		
8,700.00	6,064.86	6,004.86	6,004.86	87.59	120.10	-89.60	960.28	3,984.12	1,024.58	869.70	154.89	6.615		
8,800.00	6,065.13	6,005.13	6,005.13	90.50	120.10	-89.65	960.28	3,984.12	931.95	773.71	158.23	5.890		
8,900.00	6,065.39	6,005.39	6,005.39	93.41	120.11	-89.69	960.28	3,984.12	841.00	678.52	162.48	5.176		
9,000.00	6,065.66	6,005.66	6,005.66	96.33	120.11	-89.73	960.28	3,984.12	752.35	584.47	167.88	4.481		
9,100.00	6,065.92	6,005.92	6,005.92	99.26	120.12	-89.77	960.28	3,984.12	666.92	492.16	174.77	3.816		
9,200.00	6,066.19	6,006.19	6,006.19	102.20	120.12	-89.81	960.28	3,984.12	586.13	402.62	183.51	3.194		
9,300.00	6,066.46	6,006.46	6,006.46	105.13	120.13	-89.85	960.28	3,984.12	512.15	317.75	194.40	2.635		
9,400.00	6,066.72	6,006.72	6,006.72	108.07	120.13	-89.89	960.28	3,984.12	448.39	241.06	207.33	2.163		
9,500.00	6,066.99	6,006.99	6,006.99	111.02	120.14	-89.94	960.28	3,984.12	399.76	178.76	221.00	1.809		
9,600.00	6,067.25	6,007.25	6,007.25	113.97	120.15	-89.98	960.28	3,984.12	372.23	140.10	232.13	1.604		
9,656.23	6,067.40	6,007.40	6,007.40	115.63	120.15	-90.00	960.28	3,984.12	367.96	132.27	235.69	1.561 CC, ES, SF		
9,700.00	6,067.52	6,007.52	6,007.52	116.92	120.15	-90.02	960.28	3,984.12	370.56	133.85	236.70	1.565		
9,800.00	6,067.79	6,007.79	6,007.79	119.87	120.16	-90.06	960.28	3,984.12	395.05	161.45	233.60	1.691		
9,900.00	6,068.05	6,008.05	6,008.05	122.83	120.16	-90.10	960.28	3,984.12	441.38	215.76	225.63	1.956		
10,000.00	6,068.32	6,008.32	6,008.32	125.79	120.17	-90.14	960.28	3,984.12	503.56	287.30	216.26	2.329		
10,100.00	6,068.59	6,008.59	6,008.59	128.75	120.17	-90.18	960.28	3,984.12	576.48	369.03	207.45	2.779		
10,200.00	6,068.85	6,008.85	6,008.85	131.71	120.18	-90.23	960.28	3,984.12	656.57	456.70	199.87	3.285		
10,300.00	6,069.12	6,009.12	6,009.12	134.68	120.18	-90.27	960.28	3,984.12	741.51	547.96	193.55	3.831		
10,400.00	6,069.38	6,009.38	6,009.38	137.65	120.19	-90.31	960.28	3,984.12	829.81	641.47	188.33	4.406		
10,500.00	6,069.65	6,009.65	6,009.65	140.62	120.19	-90.35	960.28	3,984.12	920.51	736.48	184.02	5.002		
10,600.00	6,069.92	6,009.92	6,009.92	143.59	120.20	-90.39	960.28	3,984.12	1,012.96	832.52	180.44	5.614		
10,700.00	6,070.18	6,010.18	6,010.18	146.56	120.20	-90.43	960.28	3,984.12	1,106.73	929.30	177.43	6.238		
10,800.00	6,070.45	6,010.45	6,010.45	149.54	120.21	-90.47	960.28	3,984.12	1,201.50	1,026.61	174.88	6.870		
10,900.00	6,070.72	6,010.72	6,010.72	152.52	120.21	-90.52	960.28	3,984.12	1,297.05	1,124.34	172.71	7.510		
11,000.00	6,070.98	6,010.98	6,010.98	155.49	120.22	-90.56	960.28	3,984.12	1,393.23	1,222.39	170.84	8.155		

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Grenier A3 - OH - OH											Offset Site Error:	0.00 usft
Survey Program: 7120-UNKNOWN											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance					Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	
11,100.00	6,071.25	6,011.25	6,011.25	158.47	120.22	-90.60	960.28	3,984.12	1,489.92	1,320.69	169.23	8.804
11,200.00	6,071.51	6,011.51	6,011.51	161.45	120.23	-90.64	960.28	3,984.12	1,587.01	1,419.19	167.82	9.457
11,300.00	6,071.78	6,011.78	6,011.78	164.43	120.24	-90.68	960.28	3,984.12	1,684.44	1,517.86	166.58	10.112
11,400.00	6,072.05	6,012.05	6,012.05	167.42	120.24	-90.72	960.28	3,984.12	1,782.16	1,616.68	165.49	10.769
11,500.00	6,072.31	6,012.31	6,012.31	170.40	120.25	-90.76	960.28	3,984.12	1,880.12	1,715.60	164.52	11.428
11,600.00	6,072.58	6,012.58	6,012.58	173.38	120.25	-90.81	960.28	3,984.12	1,978.28	1,814.63	163.66	12.088
11,700.00	6,072.85	6,012.85	6,012.85	176.37	120.26	-90.85	960.28	3,984.12	2,076.62	1,913.74	162.88	12.749
11,800.00	6,073.11	6,013.11	6,013.11	179.36	120.26	-90.89	960.28	3,984.12	2,175.11	2,012.92	162.19	13.411
11,900.00	6,073.38	6,013.38	6,013.38	182.34	120.27	-90.93	960.28	3,984.12	2,273.73	2,112.17	161.56	14.073
12,000.00	6,073.64	6,013.64	6,013.64	185.33	120.27	-90.97	960.28	3,984.12	2,372.47	2,211.47	161.00	14.736
12,100.00	6,073.91	6,013.91	6,013.91	188.32	120.28	-91.01	960.28	3,984.12	2,471.31	2,310.82	160.49	15.399
12,200.00	6,074.18	6,014.18	6,014.18	191.31	120.28	-91.05	960.28	3,984.12	2,570.23	2,410.21	160.02	16.062
12,300.00	6,074.44	6,014.44	6,014.44	194.30	120.29	-91.10	960.28	3,984.12	2,669.24	2,509.65	159.60	16.725
12,400.00	6,074.71	6,014.71	6,014.71	197.29	120.29	-91.14	960.28	3,984.12	2,768.32	2,609.11	159.21	17.388
12,500.00	6,074.98	6,014.98	6,014.98	200.28	120.30	-91.18	960.28	3,984.12	2,867.47	2,708.61	158.85	18.051
12,600.00	6,075.24	6,015.24	6,015.24	203.27	120.30	-91.22	960.28	3,984.12	2,966.67	2,808.14	158.53	18.714
12,700.00	6,075.51	6,015.51	6,015.51	206.26	120.31	-91.26	960.28	3,984.12	3,065.92	2,907.69	158.23	19.376
12,800.00	6,075.77	6,015.77	6,015.77	209.26	120.32	-91.30	960.28	3,984.12	3,165.22	3,007.26	157.96	20.038
12,900.00	6,076.04	6,016.04	6,016.04	212.25	120.32	-91.34	960.28	3,984.12	3,264.56	3,106.85	157.71	20.700
13,000.00	6,076.31	6,016.31	6,016.31	215.24	120.33	-91.39	960.28	3,984.12	3,363.94	3,206.47	157.48	21.362
13,100.00	6,076.57	6,016.57	6,016.57	218.24	120.33	-91.43	960.28	3,984.12	3,463.36	3,306.10	157.26	22.023
13,200.00	6,076.84	6,016.84	6,016.84	221.23	120.34	-91.47	960.28	3,984.12	3,562.81	3,405.74	157.07	22.683
13,300.00	6,077.10	6,017.10	6,017.10	224.23	120.34	-91.51	960.28	3,984.12	3,662.29	3,505.40	156.89	23.344
13,400.00	6,077.37	6,017.37	6,017.37	227.22	120.35	-91.55	960.28	3,984.12	3,761.79	3,605.07	156.72	24.003
13,500.00	6,077.64	6,017.64	6,017.64	230.22	120.35	-91.59	960.28	3,984.12	3,861.33	3,704.76	156.57	24.662
13,600.00	6,077.90	6,017.90	6,017.90	233.21	120.36	-91.63	960.28	3,984.12	3,960.88	3,804.46	156.43	25.321
13,636.27	6,078.00	6,018.00	6,018.00	234.30	120.36	-91.65	960.28	3,984.12	3,996.99	3,840.62	156.38	25.560



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Grenier A8 - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 7225-UNKNOWN												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	85.00	85.00	0.00	1.70	81.85	1,015.49	7,088.70	7,161.07	7,159.37	1.70	4,211.903	
100.00	100.00	185.00	185.00	0.18	3.70	81.85	1,015.49	7,088.70	7,161.07	7,157.19	3.88	1,845.907	
200.00	200.00	285.00	285.00	0.54	5.70	81.85	1,015.49	7,088.70	7,161.07	7,154.83	6.24	1,147.993	
300.00	300.00	385.00	385.00	0.90	7.70	81.85	1,015.49	7,088.70	7,161.07	7,152.47	8.60	833.034	
400.00	400.00	485.00	485.00	1.25	9.70	81.85	1,015.49	7,088.70	7,161.07	7,150.11	10.95	653.690	
500.00	500.00	585.00	585.00	1.61	11.70	81.85	1,015.49	7,088.70	7,161.07	7,147.75	13.31	537.888	
600.00	599.98	684.98	684.98	1.97	13.70	69.51	1,015.49	7,088.70	7,160.46	7,144.79	15.67	456.933	
700.00	699.84	784.84	784.84	2.33	15.70	69.59	1,015.49	7,088.70	7,158.63	7,140.60	18.03	397.129	
800.00	799.45	884.45	884.45	2.70	17.69	69.71	1,015.49	7,088.70	7,155.58	7,135.20	20.38	351.120	
900.00	898.83	983.83	983.83	3.06	19.68	69.81	1,015.49	7,088.70	7,151.73	7,128.99	22.73	314.596	
1,000.00	998.21	1,083.21	1,083.21	3.43	21.66	69.89	1,015.49	7,088.70	7,147.86	7,122.77	25.09	284.886	
1,100.00	1,097.58	1,182.58	1,182.58	3.80	23.65	69.97	1,015.49	7,088.70	7,144.01	7,116.56	27.45	260.252	
1,200.00	1,196.96	1,281.96	1,281.96	4.18	25.64	70.06	1,015.49	7,088.70	7,140.17	7,110.36	29.81	239.502	
1,300.00	1,296.33	1,381.33	1,381.33	4.56	27.63	70.14	1,015.49	7,088.70	7,136.35	7,104.17	32.18	221.788	
1,400.00	1,395.71	1,480.71	1,480.71	4.94	29.61	70.22	1,015.49	7,088.70	7,132.54	7,098.00	34.54	206.491	
1,500.00	1,495.08	1,580.08	1,580.08	5.32	31.60	70.31	1,015.49	7,088.70	7,128.75	7,091.84	36.91	193.151	
1,600.00	1,594.46	1,679.46	1,679.46	5.70	33.59	70.39	1,015.49	7,088.70	7,124.97	7,085.70	39.27	181.414	
1,700.00	1,693.83	1,778.83	1,778.83	6.08	35.58	70.48	1,015.49	7,088.70	7,121.21	7,079.57	41.64	171.009	
1,800.00	1,793.21	1,878.21	1,878.21	6.46	37.56	70.56	1,015.49	7,088.70	7,117.47	7,073.46	44.01	161.722	
1,900.00	1,892.58	1,977.58	1,977.58	6.85	39.55	70.65	1,015.49	7,088.70	7,113.74	7,067.36	46.38	153.382	
2,000.00	1,991.96	2,076.96	2,076.96	7.23	41.54	70.73	1,015.49	7,088.70	7,110.03	7,061.28	48.75	145.852	
2,100.00	2,091.33	2,176.33	2,176.33	7.62	43.53	70.81	1,015.49	7,088.70	7,106.33	7,055.21	51.12	139.019	
2,200.00	2,190.71	2,275.71	2,275.71	8.00	45.51	70.90	1,015.49	7,088.70	7,102.65	7,049.16	53.49	132.791	
2,300.00	2,290.08	2,375.08	2,375.08	8.38	47.50	70.98	1,015.49	7,088.70	7,098.98	7,043.12	55.86	127.091	
2,400.00	2,389.46	2,474.46	2,474.46	8.77	49.49	71.07	1,015.49	7,088.70	7,095.33	7,037.10	58.23	121.855	
2,500.00	2,488.83	2,573.83	2,573.83	9.15	51.48	71.15	1,015.49	7,088.70	7,091.69	7,031.10	60.60	117.028	
2,600.00	2,588.20	2,673.20	2,673.20	9.54	53.46	71.24	1,015.49	7,088.70	7,088.07	7,025.11	62.97	112.565	
2,700.00	2,687.58	2,772.58	2,772.58	9.92	55.45	71.32	1,015.49	7,088.70	7,084.47	7,019.13	65.34	108.425	
2,800.00	2,786.95	2,871.95	2,871.95	10.31	57.44	71.41	1,015.49	7,088.70	7,080.88	7,013.17	67.71	104.576	
2,900.00	2,886.33	2,971.33	2,971.33	10.70	59.43	71.49	1,015.49	7,088.70	7,077.31	7,007.23	70.08	100.986	
3,000.00	2,985.70	3,070.70	3,070.70	11.08	61.41	71.58	1,015.49	7,088.70	7,073.75	7,001.30	72.45	97.632	
3,100.00	3,085.08	3,170.08	3,170.08	11.47	63.40	71.66	1,015.49	7,088.70	7,070.21	6,995.39	74.82	94.491	
3,200.00	3,184.45	3,269.45	3,269.45	11.85	65.39	71.75	1,015.49	7,088.70	7,066.69	6,989.49	77.20	91.542	
3,300.00	3,283.83	3,368.83	3,368.83	12.24	67.38	71.83	1,015.49	7,088.70	7,063.18	6,983.61	79.57	88.770	
3,400.00	3,383.20	3,468.20	3,468.20	12.62	69.36	71.92	1,015.49	7,088.70	7,059.69	6,977.75	81.94	86.158	
3,500.00	3,482.58	3,567.58	3,567.58	13.01	71.35	72.01	1,015.49	7,088.70	7,056.21	6,971.90	84.31	83.693	
3,600.00	3,581.95	3,666.95	3,666.95	13.40	73.34	72.09	1,015.49	7,088.70	7,052.75	6,966.07	86.68	81.363	
3,700.00	3,681.33	3,766.33	3,766.33	13.78	75.33	72.18	1,015.49	7,088.70	7,049.31	6,960.25	89.05	79.157	
3,800.00	3,780.70	3,865.70	3,865.70	14.17	77.31	72.26	1,015.49	7,088.70	7,045.88	6,954.45	91.43	77.066	
3,900.00	3,880.08	3,965.08	3,965.08	14.55	79.30	72.35	1,015.49	7,088.70	7,042.46	6,948.66	93.80	75.080	
4,000.00	3,979.45	4,064.45	4,064.45	14.94	81.29	72.44	1,015.49	7,088.70	7,039.07	6,942.90	96.17	73.193	
4,100.00	4,078.82	4,163.82	4,163.82	15.33	83.28	72.52	1,015.49	7,088.70	7,035.69	6,937.14	98.54	71.397	
4,200.00	4,178.20	4,263.20	4,263.20	15.71	85.26	72.61	1,015.49	7,088.70	7,032.32	6,931.41	100.92	69.685	
4,300.00	4,277.57	4,362.57	4,362.57	16.10	87.25	72.69	1,015.49	7,088.70	7,028.97	6,925.68	103.29	68.052	
4,400.00	4,376.95	4,461.95	4,461.95	16.49	89.24	72.78	1,015.49	7,088.70	7,025.64	6,919.98	105.66	66.492	
4,500.00	4,476.32	4,561.32	4,561.32	16.87	91.23	72.87	1,015.49	7,088.70	7,022.32	6,914.29	108.03	65.001	
4,600.00	4,575.70	4,660.70	4,660.70	17.26	93.21	72.95	1,015.49	7,088.70	7,019.02	6,908.62	110.41	63.575	
4,700.00	4,675.07	4,760.07	4,760.07	17.65	95.20	73.04	1,015.49	7,088.70	7,015.74	6,902.96	112.78	62.208	
4,800.00	4,774.45	4,859.45	4,859.45	18.03	97.19	73.13	1,015.49	7,088.70	7,012.47	6,897.32	115.15	60.898	
4,900.00	4,873.82	4,958.82	4,958.82	18.42	99.18	73.21	1,015.49	7,088.70	7,009.22	6,891.70	117.52	59.641	
5,000.00	4,973.20	5,058.20	5,058.20	18.80	101.16	73.30	1,015.49	7,088.70	7,005.99	6,886.09	119.90	58.433	
5,100.00	5,072.57	5,157.57	5,157.57	19.19	103.15	73.39	1,015.49	7,088.70	7,002.77	6,880.50	122.27	57.273	

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Grenier A8 - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 7225-UNKNOWN												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore +N/-S (usft)	Centre +E/-W (usft)					
5,200.00	5,171.95	5,256.95	5,256.95	19.58	105.14	73.48	1,015.49	7,088.70	6,999.57	6,874.92	124.64	56.157	
5,300.00	5,271.32	5,356.32	5,356.32	19.96	107.13	73.56	1,015.49	7,088.70	6,996.38	6,869.36	127.02	55.083	
5,400.00	5,370.69	5,455.69	5,455.69	20.35	109.11	69.10	1,015.49	7,088.70	6,993.18	6,863.79	129.39	54.048	
5,500.00	5,469.49	5,554.49	5,554.49	20.74	111.09	28.49	1,015.49	7,088.70	6,982.17	6,850.42	131.75	52.997	
5,600.00	5,565.90	5,650.90	5,650.90	21.13	113.02	15.52	1,015.49	7,088.70	6,957.48	6,823.44	134.04	51.905	
5,700.00	5,658.06	5,743.06	5,743.06	21.53	114.86	9.80	1,015.49	7,088.70	6,919.61	6,783.38	136.23	50.793	
5,800.00	5,744.16	5,829.16	5,829.16	21.93	116.58	6.52	1,015.49	7,088.70	6,869.28	6,731.01	138.27	49.681	
5,900.00	5,822.53	5,907.53	5,907.53	22.38	118.15	4.23	1,015.49	7,088.70	6,807.46	6,667.35	140.11	48.585	
6,000.00	5,891.65	5,976.65	5,976.65	22.93	119.53	2.30	1,015.49	7,088.70	6,735.36	6,593.63	141.73	47.522	
6,100.00	5,950.17	6,035.17	6,035.17	23.68	120.70	0.28	1,015.49	7,088.70	6,654.38	6,511.29	143.09	46.506	
6,200.00	5,996.95	6,081.95	6,081.95	24.69	121.64	-2.41	1,015.49	7,088.70	6,566.09	6,421.93	144.16	45.549	
6,300.00	6,031.08	6,116.08	6,116.08	25.98	122.32	-7.18	1,015.49	7,088.70	6,472.21	6,327.29	144.92	44.660	
6,400.00	6,051.90	6,136.90	6,136.90	27.55	122.74	-20.14	1,015.49	7,088.70	6,374.58	6,229.21	145.37	43.850	
6,500.00	6,059.00	6,144.00	6,144.00	29.33	122.88	-87.74	1,015.49	7,088.70	6,275.09	6,129.58	145.51	43.125	
6,600.00	6,059.27	6,144.27	6,144.27	31.29	122.89	-87.78	1,015.49	7,088.70	6,175.32	6,029.83	145.49	42.444	
6,700.00	6,059.53	6,144.53	6,144.53	33.41	122.89	-87.82	1,015.49	7,088.70	6,075.56	5,930.08	145.48	41.762	
6,800.00	6,059.80	6,144.80	6,144.80	35.66	122.90	-87.85	1,015.49	7,088.70	5,975.81	5,830.34	145.47	41.080	
6,900.00	6,060.07	6,145.07	6,145.07	38.01	122.90	-87.89	1,015.49	7,088.70	5,876.06	5,730.60	145.46	40.397	
7,000.00	6,060.33	6,145.33	6,145.33	40.45	122.91	-87.92	1,015.49	7,088.70	5,776.33	5,630.87	145.45	39.712	
7,100.00	6,060.60	6,145.60	6,145.60	42.97	122.91	-87.96	1,015.49	7,088.70	5,676.60	5,531.15	145.45	39.027	
7,200.00	6,060.87	6,145.87	6,145.87	45.54	122.92	-88.00	1,015.49	7,088.70	5,576.88	5,431.43	145.45	38.341	
7,300.00	6,061.13	6,146.13	6,146.13	48.17	122.92	-88.03	1,015.49	7,088.70	5,477.18	5,331.72	145.46	37.655	
7,400.00	6,061.40	6,146.40	6,146.40	50.84	122.93	-88.07	1,015.49	7,088.70	5,377.48	5,232.02	145.47	36.967	
7,500.00	6,061.66	6,146.66	6,146.66	53.55	122.93	-88.10	1,015.49	7,088.70	5,277.80	5,132.32	145.48	36.278	
7,600.00	6,061.93	6,146.93	6,146.93	56.28	122.94	-88.14	1,015.49	7,088.70	5,178.13	5,032.63	145.50	35.588	
7,700.00	6,062.20	6,147.20	6,147.20	59.05	122.94	-88.18	1,015.49	7,088.70	5,078.47	4,932.94	145.53	34.897	
7,800.00	6,062.46	6,147.46	6,147.46	61.83	122.95	-88.21	1,015.49	7,088.70	4,978.82	4,833.27	145.56	34.205	
7,900.00	6,062.73	6,147.73	6,147.73	64.64	122.95	-88.25	1,015.49	7,088.70	4,879.19	4,733.60	145.59	33.512	
8,000.00	6,063.00	6,148.00	6,148.00	67.46	122.96	-88.28	1,015.49	7,088.70	4,779.58	4,633.94	145.64	32.818	
8,100.00	6,063.26	6,148.26	6,148.26	70.30	122.97	-88.32	1,015.49	7,088.70	4,679.98	4,534.29	145.69	32.122	
8,200.00	6,063.53	6,148.53	6,148.53	73.16	122.97	-88.36	1,015.49	7,088.70	4,580.40	4,434.64	145.76	31.425	
8,300.00	6,063.79	6,148.79	6,148.79	76.02	122.98	-88.39	1,015.49	7,088.70	4,480.84	4,335.01	145.83	30.727	
8,400.00	6,064.06	6,149.06	6,149.06	78.90	122.98	-88.43	1,015.49	7,088.70	4,381.29	4,235.38	145.91	30.027	
8,500.00	6,064.33	6,149.33	6,149.33	81.79	122.99	-88.46	1,015.49	7,088.70	4,281.77	4,135.76	146.01	29.325	
8,600.00	6,064.59	6,149.59	6,149.59	84.68	122.99	-88.50	1,015.49	7,088.70	4,182.28	4,036.16	146.12	28.622	
8,700.00	6,064.86	6,149.86	6,149.86	87.59	123.00	-88.54	1,015.49	7,088.70	4,082.80	3,936.56	146.25	27.917	
8,800.00	6,065.13	6,150.13	6,150.13	90.50	123.00	-88.57	1,015.49	7,088.70	3,983.35	3,836.97	146.39	27.211	
8,900.00	6,065.39	6,150.39	6,150.39	93.41	123.01	-88.61	1,015.49	7,088.70	3,883.93	3,737.38	146.55	26.502	
9,000.00	6,065.66	6,150.66	6,150.66	96.33	123.01	-88.64	1,015.49	7,088.70	3,784.55	3,637.81	146.73	25.792	
9,100.00	6,065.92	6,150.92	6,150.92	99.26	123.02	-88.68	1,015.49	7,088.70	3,685.19	3,538.25	146.94	25.080	
9,200.00	6,066.19	6,151.19	6,151.19	102.20	123.02	-88.72	1,015.49	7,088.70	3,585.87	3,438.70	147.17	24.365	
9,300.00	6,066.46	6,151.46	6,151.46	105.13	123.03	-88.75	1,015.49	7,088.70	3,486.59	3,339.16	147.43	23.648	
9,400.00	6,066.72	6,151.72	6,151.72	108.07	123.03	-88.79	1,015.49	7,088.70	3,387.35	3,239.62	147.73	22.929	
9,500.00	6,066.99	6,151.99	6,151.99	111.02	123.04	-88.82	1,015.49	7,088.70	3,288.16	3,140.10	148.06	22.208	
9,600.00	6,067.25	6,152.25	6,152.25	113.97	123.05	-88.86	1,015.49	7,088.70	3,189.02	3,040.58	148.43	21.484	
9,700.00	6,067.52	6,152.52	6,152.52	116.92	123.05	-88.90	1,015.49	7,088.70	3,089.93	2,941.08	148.85	20.758	
9,800.00	6,067.79	6,152.79	6,152.79	119.87	123.06	-88.93	1,015.49	7,088.70	2,990.90	2,841.58	149.32	20.030	
9,900.00	6,068.05	6,153.05	6,153.05	122.83	123.06	-88.97	1,015.49	7,088.70	2,891.94	2,742.09	149.85	19.298	
10,000.00	6,068.32	6,153.32	6,153.32	125.79	123.07	-89.00	1,015.49	7,088.70	2,793.06	2,642.61	150.45	18.565	
10,100.00	6,068.59	6,153.59	6,153.59	128.75	123.07	-89.04	1,015.49	7,088.70	2,694.26	2,543.14	151.12	17.829	
10,200.00	6,068.85	6,153.85	6,153.85	131.71	123.08	-89.08	1,015.49	7,088.70	2,595.55	2,443.67	151.87	17.090	
10,300.00	6,069.12	6,154.12	6,154.12	134.68	123.08	-89.11	1,015.49	7,088.70	2,496.94	2,344.22	152.72	16.350	

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



Scientific Drilling, Intl
Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Grenier A8 - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 7225-UNKNOWN													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,400.00	6,069.38	6,154.38	6,154.38	137.65	123.09	-89.15	1,015.49	7,088.70	2,398.44	2,244.77	153.68	15.607	
10,500.00	6,069.65	6,154.65	6,154.65	140.62	123.09	-89.19	1,015.49	7,088.70	2,300.08	2,145.32	154.76	14.863	
10,600.00	6,069.92	6,154.92	6,154.92	143.59	123.10	-89.22	1,015.49	7,088.70	2,201.87	2,045.89	155.97	14.117	
10,700.00	6,070.18	6,155.18	6,155.18	146.56	123.10	-89.26	1,015.49	7,088.70	2,103.82	1,946.47	157.35	13.370	
10,800.00	6,070.45	6,155.45	6,155.45	149.54	123.11	-89.29	1,015.49	7,088.70	2,005.96	1,847.05	158.91	12.623	
10,900.00	6,070.72	6,155.72	6,155.72	152.52	123.11	-89.33	1,015.49	7,088.70	1,908.33	1,747.65	160.69	11.876	
11,000.00	6,070.98	6,155.98	6,155.98	155.49	123.12	-89.37	1,015.49	7,088.70	1,810.96	1,648.25	162.70	11.130	
11,100.00	6,071.25	6,156.25	6,156.25	158.47	123.12	-89.40	1,015.49	7,088.70	1,713.88	1,548.88	165.00	10.387	
11,200.00	6,071.51	6,156.51	6,156.51	161.45	123.13	-89.44	1,015.49	7,088.70	1,617.17	1,449.53	167.64	9.647	
11,300.00	6,071.78	6,156.78	6,156.78	164.43	123.14	-89.47	1,015.49	7,088.70	1,520.88	1,350.22	170.66	8.912	
11,400.00	6,072.05	6,157.05	6,157.05	167.42	123.14	-89.51	1,015.49	7,088.70	1,425.10	1,250.94	174.16	8.183	
11,500.00	6,072.31	6,157.31	6,157.31	170.40	123.15	-89.55	1,015.49	7,088.70	1,329.94	1,151.74	178.21	7.463	
11,600.00	6,072.58	6,157.58	6,157.58	173.38	123.15	-89.58	1,015.49	7,088.70	1,235.55	1,052.62	182.93	6.754	
11,700.00	6,072.85	6,157.85	6,157.85	176.37	123.16	-89.62	1,015.49	7,088.70	1,142.11	953.65	188.47	6.060	
11,800.00	6,073.11	6,158.11	6,158.11	179.36	123.16	-89.65	1,015.49	7,088.70	1,049.88	854.88	195.00	5.384	
11,900.00	6,073.38	6,158.38	6,158.38	182.34	123.17	-89.69	1,015.49	7,088.70	959.22	756.44	202.77	4.731	
12,000.00	6,073.64	6,158.64	6,158.64	185.33	123.17	-89.73	1,015.49	7,088.70	870.59	658.53	212.06	4.105	
12,100.00	6,073.91	6,158.91	6,158.91	188.32	123.18	-89.76	1,015.49	7,088.70	784.71	561.48	223.23	3.515	
12,200.00	6,074.18	6,159.18	6,159.18	191.31	123.18	-89.80	1,015.49	7,088.70	702.57	465.92	236.65	2.969	
12,300.00	6,074.44	6,159.44	6,159.44	194.30	123.19	-89.83	1,015.49	7,088.70	625.65	372.97	252.68	2.476	
12,400.00	6,074.71	6,159.71	6,159.71	197.29	123.19	-89.87	1,015.49	7,088.70	556.12	284.76	271.36	2.049	
12,500.00	6,074.98	6,159.98	6,159.98	200.28	123.20	-89.91	1,015.49	7,088.70	497.10	205.19	291.91	1.703	
12,600.00	6,075.24	6,160.24	6,160.24	203.27	123.20	-89.94	1,015.49	7,088.70	452.71	140.85	311.86	1.452 Level 3	
12,700.00	6,075.51	6,160.51	6,160.51	206.26	123.21	-89.98	1,015.49	7,088.70	427.53	100.77	326.75	1.308 Level 3	
12,760.83	6,075.67	6,160.67	6,160.67	208.08	123.21	-90.00	1,015.49	7,088.70	423.18	91.93	331.25	1.278 Level 3, CC, ES, SF	
12,800.00	6,075.77	6,160.77	6,160.77	209.26	123.22	-90.01	1,015.49	7,088.70	424.99	93.04	331.94	1.280 Level 3	
12,900.00	6,076.04	6,161.04	6,161.04	212.25	123.22	-90.05	1,015.49	7,088.70	445.48	119.19	326.28	1.365 Level 3	
13,000.00	6,076.31	6,161.31	6,161.31	215.24	123.23	-90.09	1,015.49	7,088.70	486.09	173.02	313.07	1.553	
13,100.00	6,076.57	6,161.57	6,161.57	218.24	123.23	-90.12	1,015.49	7,088.70	542.33	245.47	296.86	1.827	
13,200.00	6,076.84	6,161.84	6,161.84	221.23	123.24	-90.16	1,015.49	7,088.70	609.88	329.06	280.81	2.172	
13,300.00	6,077.10	6,162.10	6,162.10	224.23	123.24	-90.19	1,015.49	7,088.70	685.41	419.04	266.37	2.573	
13,400.00	6,077.37	6,162.37	6,162.37	227.22	123.25	-90.23	1,015.49	7,088.70	766.56	512.66	253.90	3.019	
13,500.00	6,077.64	6,162.64	6,162.64	230.22	123.25	-90.27	1,015.49	7,088.70	851.74	608.42	243.32	3.501	
13,600.00	6,077.90	6,162.90	6,162.90	233.21	123.26	-90.30	1,015.49	7,088.70	939.83	705.47	234.36	4.010	
13,636.27	6,078.00	6,163.00	6,163.00	234.30	123.26	-90.32	1,015.49	7,088.70	972.35	740.89	231.47	4.201	

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601'1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 601 2H - OH - Plan #2														Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)							
0.00	0.00	0.00	0.00	0.00	0.00	-125.37	-8.73	-12.31	15.09	15.09	0.00	N/A			
100.00	100.00	100.00	100.00	0.18	0.18	-125.37	-8.73	-12.31	15.09	14.73	0.36	42.097			
200.00	200.00	200.00	200.00	0.54	0.54	-125.37	-8.73	-12.31	15.09	14.02	1.08	14.032			
300.00	300.00	300.00	300.00	0.90	0.90	-125.37	-8.73	-12.31	15.09	13.30	1.79	8.419			
400.00	400.00	400.00	400.00	1.25	1.25	-125.37	-8.73	-12.31	15.09	12.58	2.51	6.014			
500.00	500.00	500.00	500.00	1.61	1.61	-125.37	-8.73	-12.31	15.09	11.86	3.23	4.677 CC			
600.00	599.98	600.34	600.32	1.97	1.97	-137.10	-6.98	-12.16	15.25	11.30	3.95	3.859			
700.00	699.84	700.68	700.51	2.33	2.34	-135.30	-1.73	-11.73	15.76	11.07	4.69	3.361			
800.00	799.45	801.01	800.45	2.70	2.70	-132.56	7.01	-11.00	16.63	11.20	5.43	3.064			
900.00	898.83	901.30	899.99	3.06	3.07	-126.34	19.23	-9.99	17.22	11.06	6.16	2.795			
995.52	993.76	996.93	994.44	3.41	3.43	-110.87	34.11	-8.75	16.97	10.12	6.85	2.478			
1,000.00	998.21	1,001.40	998.84	3.43	3.44	-109.89	34.88	-8.69	16.97	10.09	6.88	2.466 ES			
1,100.00	1,097.58	1,101.04	1,096.64	3.80	3.84	-83.60	53.87	-7.12	18.61	10.96	7.65	2.432			
1,200.00	1,196.96	1,200.00	1,193.06	4.18	4.25	-58.28	76.07	-5.28	25.32	16.81	8.51	2.975			
1,300.00	1,296.33	1,298.06	1,287.78	4.56	4.67	-41.90	101.33	-3.18	37.54	28.20	9.34	4.020			
1,400.00	1,395.71	1,394.99	1,380.51	4.94	5.12	-32.33	129.46	-0.85	54.33	44.22	10.11	5.372			
1,500.00	1,495.08	1,491.80	1,472.24	5.32	5.59	-26.56	160.26	1.70	74.65	63.81	10.84	6.886			
1,600.00	1,594.46	1,589.41	1,564.62	5.70	6.08	-23.17	191.70	4.31	95.78	84.23	11.55	8.295			
1,700.00	1,693.83	1,687.03	1,657.01	6.08	6.58	-21.01	223.13	6.91	117.11	104.85	12.26	9.555			
1,800.00	1,793.21	1,784.65	1,749.39	6.46	7.09	-19.51	254.57	9.52	138.55	125.58	12.97	10.680			
1,900.00	1,892.58	1,882.27	1,841.77	6.85	7.61	-18.41	286.00	12.13	160.06	146.36	13.69	11.688			
2,000.00	1,991.96	1,979.89	1,934.16	7.23	8.13	-17.58	317.44	14.73	181.61	167.19	14.42	12.592			
2,100.00	2,091.33	2,077.51	2,026.54	7.62	8.65	-16.92	348.87	17.34	203.19	188.04	15.15	13.408			
2,200.00	2,190.71	2,175.13	2,118.92	8.00	9.18	-16.39	380.31	19.94	224.79	208.90	15.89	14.147			
2,300.00	2,290.08	2,272.75	2,211.31	8.38	9.71	-15.95	411.74	22.55	246.41	229.78	16.63	14.817			
2,400.00	2,389.46	2,370.37	2,303.69	8.77	10.24	-15.58	443.18	25.16	268.04	250.66	17.37	15.429			
2,500.00	2,488.83	2,467.99	2,396.07	9.15	10.77	-15.27	474.62	27.76	289.67	271.56	18.12	15.988			
2,600.00	2,588.20	2,565.61	2,488.45	9.54	11.31	-15.00	506.05	30.37	311.32	292.45	18.87	16.502			
2,700.00	2,687.58	2,663.23	2,580.84	9.92	11.85	-14.76	537.49	32.97	332.97	313.35	19.62	16.974			
2,800.00	2,786.95	2,760.85	2,673.22	10.31	12.39	-14.56	568.92	35.58	354.62	334.25	20.37	17.411			
2,900.00	2,886.33	2,858.47	2,765.60	10.70	12.93	-14.38	600.36	38.18	376.28	355.16	21.12	17.815			
3,000.00	2,985.70	2,956.09	2,857.99	11.08	13.47	-14.21	631.79	40.79	397.94	376.06	21.88	18.190			
3,100.00	3,085.08	3,053.71	2,950.37	11.47	14.01	-14.07	663.23	43.40	419.60	396.97	22.63	18.539			
3,200.00	3,184.45	3,151.33	3,042.75	11.85	14.56	-13.94	694.67	46.00	441.27	417.88	23.39	18.864			
3,300.00	3,283.83	3,248.95	3,135.14	12.24	15.10	-13.82	726.10	48.61	462.94	438.79	24.15	19.169			
3,400.00	3,383.20	3,346.57	3,227.52	12.62	15.65	-13.71	757.54	51.21	484.61	459.70	24.91	19.454			
3,500.00	3,482.58	3,444.19	3,319.90	13.01	16.19	-13.61	788.97	53.82	506.28	480.61	25.67	19.721			
3,600.00	3,581.95	3,541.81	3,412.29	13.40	16.74	-13.52	820.41	56.43	527.95	501.52	26.43	19.973			
3,700.00	3,681.33	3,639.43	3,504.67	13.78	17.29	-13.44	851.84	59.03	549.63	522.43	27.20	20.210			
3,800.00	3,780.70	3,737.05	3,597.05	14.17	17.83	-13.36	883.28	61.64	571.30	543.34	27.96	20.433			
3,900.00	3,880.08	3,834.67	3,689.44	14.55	18.38	-13.29	914.72	64.24	592.98	564.26	28.72	20.644			
4,000.00	3,979.45	3,932.29	3,781.82	14.94	18.93	-13.22	946.15	66.85	614.66	585.17	29.49	20.844			
4,100.00	4,078.82	4,029.91	3,874.20	15.33	19.48	-13.16	977.59	69.46	636.33	606.08	30.25	21.033			
4,200.00	4,178.20	4,127.53	3,966.59	15.71	20.02	-13.10	1,009.02	72.06	658.01	626.99	31.02	21.213			
4,300.00	4,277.57	4,225.15	4,058.97	16.10	20.57	-13.04	1,040.46	74.67	679.69	647.91	31.79	21.383			
4,400.00	4,376.95	4,322.77	4,151.35	16.49	21.12	-12.99	1,071.89	77.27	701.37	668.82	32.55	21.546			
4,500.00	4,476.32	4,420.39	4,243.74	16.87	21.67	-12.95	1,103.33	79.88	723.05	689.73	33.32	21.700			
4,600.00	4,575.70	4,518.01	4,336.12	17.26	22.22	-12.90	1,134.77	82.48	744.73	710.64	34.09	21.848			
4,700.00	4,675.07	4,615.63	4,428.50	17.65	22.77	-12.86	1,166.20	85.09	766.41	731.56	34.86	21.988			
4,800.00	4,774.45	4,713.25	4,520.88	18.03	23.32	-12.82	1,197.64	87.70	788.09	752.47	35.62	22.123			
4,900.00	4,873.82	4,810.87	4,613.27	18.42	23.87	-12.78	1,229.07	90.30	809.77	773.38	36.39	22.251			
5,000.00	4,973.20	4,908.49	4,705.65	18.80	24.42	-12.74	1,260.51	92.91	831.46	794.30	37.16	22.374			

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 601 2H - OH - Plan #2												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.00	5,072.57	5,006.11	4,798.03	19.19	24.97	-12.71	1,291.94	95.51	853.14	815.21	37.93	22.492	
5,200.00	5,171.95	5,103.73	4,890.42	19.58	25.52	-12.68	1,323.38	98.12	874.82	836.12	38.70	22.605	
5,300.00	5,271.32	5,201.35	4,982.80	19.96	26.07	-12.65	1,354.82	100.73	896.50	857.03	39.47	22.714	
5,400.00	5,370.69	5,298.97	5,075.18	20.35	26.62	-17.05	1,386.25	103.33	918.19	877.95	40.24	22.818	
5,500.00	5,469.49	5,396.23	5,167.23	20.74	27.17	-56.37	1,417.57	105.93	939.86	898.83	41.03	22.908	
5,600.00	5,565.90	5,491.52	5,257.40	21.13	27.71	-68.74	1,448.26	108.47	961.54	919.69	41.85	22.976	
5,700.00	5,658.06	5,582.98	5,343.96	21.53	28.23	-74.38	1,477.71	110.91	983.65	940.93	42.72	23.025	
5,800.00	5,744.16	5,674.54	5,430.57	21.93	28.74	-77.94	1,507.18	114.14	1,006.95	963.21	43.73	23.024	
5,900.00	5,822.53	5,781.72	5,530.84	22.38	29.34	-80.74	1,541.29	129.96	1,030.95	985.90	45.05	22.884	
6,000.00	5,891.65	5,900.58	5,638.01	22.93	29.99	-83.02	1,577.73	165.74	1,054.74	1,008.14	46.60	22.634	
6,100.00	5,950.17	6,034.20	5,749.93	23.68	30.68	-85.05	1,615.75	227.64	1,077.35	1,029.00	48.35	22.281	
6,200.00	5,996.95	6,185.72	5,861.16	24.69	31.43	-86.89	1,653.52	322.91	1,097.55	1,047.24	50.31	21.817	
6,300.00	6,031.08	6,357.06	5,960.91	25.98	32.30	-88.48	1,687.34	457.53	1,113.79	1,061.18	52.61	21.170	
6,400.00	6,051.90	6,546.72	6,032.64	27.55	33.47	-89.60	1,711.59	630.82	1,124.42	1,068.79	55.63	20.212	
6,500.00	6,059.00	6,746.40	6,059.00	29.33	35.28	-90.00	1,720.39	827.90	1,128.07	1,068.42	59.65	18.911	
6,600.00	6,059.27	6,846.40	6,059.27	31.29	36.53	-90.00	1,720.39	927.90	1,128.07	1,064.54	63.53	17.757	
6,700.00	6,059.53	6,946.40	6,059.54	33.41	38.03	-90.00	1,720.39	1,027.90	1,128.07	1,060.37	67.70	16.663	
6,800.00	6,059.80	7,046.40	6,059.80	35.66	39.76	-90.00	1,720.39	1,127.90	1,128.07	1,055.94	72.13	15.639	
6,900.00	6,060.07	7,146.40	6,060.07	38.01	41.68	-90.00	1,720.39	1,227.90	1,128.07	1,051.29	76.78	14.692	
7,000.00	6,060.33	7,246.40	6,060.33	40.45	43.77	-90.00	1,720.39	1,327.90	1,128.07	1,046.46	81.61	13.822	
7,100.00	6,060.60	7,346.40	6,060.60	42.97	45.99	-90.00	1,720.39	1,427.90	1,128.07	1,041.48	86.59	13.028	
7,200.00	6,060.87	7,446.40	6,060.87	45.54	48.31	-90.00	1,720.39	1,527.89	1,128.07	1,036.38	91.70	12.302	
7,300.00	6,061.13	7,546.40	6,061.13	48.17	50.72	-90.00	1,720.39	1,627.89	1,128.07	1,031.17	96.90	11.641	
7,400.00	6,061.40	7,646.40	6,061.40	50.84	53.21	-90.00	1,720.39	1,727.89	1,128.07	1,025.87	102.20	11.038	
7,500.00	6,061.66	7,746.40	6,061.66	53.55	55.75	-90.00	1,720.39	1,827.89	1,128.07	1,020.49	107.58	10.486	
7,600.00	6,061.93	7,846.40	6,061.93	56.28	58.34	-90.00	1,720.39	1,927.89	1,128.07	1,015.05	113.02	9.981	
7,700.00	6,062.20	7,946.40	6,062.20	59.05	60.98	-90.00	1,720.39	2,027.89	1,128.07	1,009.56	118.52	9.518	
7,800.00	6,062.46	8,046.40	6,062.46	61.83	63.65	-90.00	1,720.39	2,127.89	1,128.07	1,004.01	124.06	9.093	
7,900.00	6,062.73	8,146.40	6,062.73	64.64	66.35	-90.00	1,720.39	2,227.89	1,128.07	998.42	129.65	8.701	
8,000.00	6,063.00	8,246.40	6,062.99	67.46	69.08	-90.00	1,720.39	2,327.89	1,128.07	992.80	135.27	8.339	
8,100.00	6,063.26	8,346.40	6,063.26	70.30	71.84	-90.00	1,720.39	2,427.89	1,128.07	987.14	140.93	8.004	
8,200.00	6,063.53	8,446.40	6,063.53	73.16	74.61	-90.00	1,720.39	2,527.89	1,128.07	981.45	146.62	7.694	
8,300.00	6,063.79	8,546.40	6,063.79	76.02	77.41	-90.00	1,720.39	2,627.89	1,128.07	975.74	152.33	7.405	
8,400.00	6,064.06	8,646.40	6,064.06	78.90	80.22	-90.00	1,720.39	2,727.89	1,128.07	970.01	158.07	7.137	
8,500.00	6,064.33	8,746.40	6,064.32	81.79	83.05	-90.00	1,720.39	2,827.89	1,128.07	964.25	163.82	6.886	
8,600.00	6,064.59	8,846.40	6,064.59	84.68	85.89	-90.00	1,720.39	2,927.89	1,128.07	958.47	169.60	6.651	
8,700.00	6,064.86	8,946.40	6,064.86	87.59	88.74	-90.00	1,720.39	3,027.89	1,128.07	952.68	175.39	6.432	
8,800.00	6,065.13	9,046.40	6,065.12	90.50	91.60	-90.00	1,720.39	3,127.89	1,128.07	946.88	181.20	6.226	
8,900.00	6,065.39	9,146.40	6,065.39	93.41	94.47	-90.00	1,720.39	3,227.89	1,128.07	941.06	187.02	6.032	
9,000.00	6,065.66	9,246.40	6,065.65	96.33	97.35	-90.00	1,720.39	3,327.89	1,128.07	935.22	192.85	5.850	
9,100.00	6,065.92	9,346.40	6,065.92	99.26	100.24	-90.00	1,720.39	3,427.89	1,128.07	929.38	198.69	5.677	
9,200.00	6,066.19	9,446.40	6,066.19	102.20	103.14	-90.00	1,720.39	3,527.89	1,128.07	923.53	204.55	5.515	
9,300.00	6,066.46	9,546.40	6,066.45	105.13	106.04	-90.00	1,720.39	3,627.89	1,128.07	917.66	210.41	5.361	
9,400.00	6,066.72	9,646.40	6,066.72	108.07	108.95	-90.00	1,720.39	3,727.89	1,128.07	911.79	216.28	5.216	
9,500.00	6,066.99	9,746.40	6,066.98	111.02	111.86	-90.00	1,720.39	3,827.89	1,128.07	905.91	222.16	5.078	
9,600.00	6,067.25	9,846.40	6,067.25	113.97	114.78	-90.00	1,720.39	3,927.89	1,128.07	900.02	228.05	4.947	
9,700.00	6,067.52	9,946.40	6,067.52	116.92	117.70	-90.00	1,720.39	4,027.89	1,128.07	894.13	233.94	4.822	
9,800.00	6,067.79	10,046.40	6,067.78	119.87	120.63	-90.00	1,720.39	4,127.89	1,128.07	888.23	239.85	4.703	
9,900.00	6,068.05	10,146.40	6,068.05	122.83	123.56	-90.00	1,720.39	4,227.89	1,128.07	882.32	245.75	4.590	
10,000.00	6,068.32	10,246.40	6,068.31	125.79	126.50	-90.00	1,720.39	4,327.88	1,128.07	876.41	251.66	4.482	
10,100.00	6,068.59	10,346.40	6,068.58	128.75	129.44	-90.00	1,720.39	4,427.88	1,128.07	870.49	257.58	4.379	
10,200.00	6,068.85	10,446.40	6,068.85	131.71	132.38	-90.00	1,720.39	4,527.88	1,128.07	864.57	263.50	4.281	

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

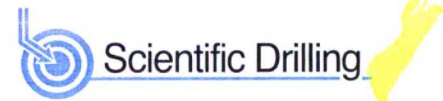
Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 601 2H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
10,300.00	6,069.12	10,546.40	6,069.11	134.68	135.33	-90.00	1,720.39	4,627.88	1,128.07	858.64	269.43	4.187		
10,400.00	6,069.38	10,646.40	6,069.38	137.65	138.28	-90.00	1,720.39	4,727.88	1,128.07	852.71	275.36	4.097		
10,500.00	6,069.65	10,746.40	6,069.64	140.62	141.23	-90.00	1,720.39	4,827.88	1,128.07	846.78	281.30	4.010		
10,600.00	6,069.92	10,846.40	6,069.91	143.59	144.18	-90.00	1,720.39	4,927.88	1,128.07	840.84	287.23	3.927		
10,700.00	6,070.18	10,946.40	6,070.18	146.56	147.14	-90.00	1,720.39	5,027.88	1,128.07	834.90	293.18	3.848		
10,800.00	6,070.45	11,046.40	6,070.44	149.54	150.10	-90.00	1,720.39	5,127.88	1,128.07	828.95	299.12	3.771		
10,900.00	6,070.72	11,146.40	6,070.71	152.52	153.06	-90.00	1,720.39	5,227.88	1,128.07	823.00	305.07	3.698		
11,000.00	6,070.98	11,246.40	6,070.97	155.49	156.02	-90.00	1,720.39	5,327.88	1,128.07	817.05	311.02	3.627		
11,100.00	6,071.25	11,346.40	6,071.24	158.47	158.99	-90.00	1,720.39	5,427.88	1,128.07	811.10	316.97	3.559		
11,200.00	6,071.51	11,446.40	6,071.51	161.45	161.95	-90.00	1,720.39	5,527.88	1,128.07	805.14	322.93	3.493		
11,300.00	6,071.78	11,546.40	6,071.77	164.43	164.92	-90.00	1,720.39	5,627.88	1,128.07	799.18	328.89	3.430		
11,400.00	6,072.05	11,646.40	6,072.04	167.42	167.89	-90.00	1,720.39	5,727.88	1,128.07	793.22	334.85	3.369		
11,500.00	6,072.31	11,746.40	6,072.30	170.40	170.86	-90.00	1,720.39	5,827.88	1,128.07	787.26	340.81	3.310		
11,600.00	6,072.58	11,846.40	6,072.57	173.38	173.83	-90.00	1,720.39	5,927.88	1,128.07	781.29	346.78	3.253		
11,700.00	6,072.85	11,946.40	6,072.84	176.37	176.81	-90.00	1,720.39	6,027.88	1,128.07	775.33	352.74	3.198		
11,800.00	6,073.11	12,046.40	6,073.10	179.36	179.78	-90.00	1,720.39	6,127.88	1,128.07	769.36	358.71	3.145		
11,900.00	6,073.38	12,146.40	6,073.37	182.34	182.76	-90.00	1,720.39	6,227.88	1,128.07	763.39	364.68	3.093		
12,000.00	6,073.64	12,246.40	6,073.63	185.33	185.74	-90.00	1,720.39	6,327.88	1,128.07	757.42	370.65	3.043		
12,100.00	6,073.91	12,346.40	6,073.90	188.32	188.72	-90.00	1,720.39	6,427.88	1,128.07	751.44	376.63	2.995		
12,200.00	6,074.18	12,446.40	6,074.17	191.31	191.70	-90.00	1,720.39	6,527.88	1,128.07	745.47	382.60	2.948		
12,300.00	6,074.44	12,546.40	6,074.43	194.30	194.68	-90.00	1,720.39	6,627.88	1,128.07	739.49	388.58	2.903		
12,400.00	6,074.71	12,646.40	6,074.70	197.29	197.66	-90.00	1,720.39	6,727.88	1,128.07	733.51	394.56	2.859		
12,500.00	6,074.98	12,746.40	6,074.96	200.28	200.64	-90.00	1,720.39	6,827.88	1,128.07	727.53	400.54	2.816		
12,600.00	6,075.24	12,846.40	6,075.23	203.27	203.62	-90.00	1,720.39	6,927.88	1,128.07	721.55	406.52	2.775		
12,700.00	6,075.51	12,946.40	6,075.50	206.26	206.61	-90.00	1,720.39	7,027.88	1,128.07	715.57	412.50	2.735		
12,800.00	6,075.77	13,046.40	6,075.76	209.26	209.59	-90.00	1,720.39	7,127.88	1,128.07	709.59	418.48	2.696		
12,900.00	6,076.04	13,146.40	6,076.03	212.25	212.58	-90.00	1,720.39	7,227.87	1,128.07	703.60	424.47	2.658		
13,000.00	6,076.31	13,246.40	6,076.29	215.24	215.56	-90.00	1,720.39	7,327.87	1,128.07	697.62	430.45	2.621		
13,100.00	6,076.57	13,346.40	6,076.56	218.24	218.55	-90.00	1,720.39	7,427.87	1,128.07	691.63	436.44	2.585		
13,200.00	6,076.84	13,446.40	6,076.83	221.23	221.54	-90.00	1,720.39	7,527.87	1,128.07	685.64	442.43	2.550		
13,300.00	6,077.10	13,546.40	6,077.09	224.23	224.53	-90.00	1,720.39	7,627.87	1,128.07	679.66	448.41	2.516		
13,400.00	6,077.37	13,646.40	6,077.36	227.22	227.51	-90.00	1,720.39	7,727.87	1,128.07	673.67	454.40	2.483		
13,500.00	6,077.64	13,746.40	6,077.62	230.22	230.50	-90.00	1,720.39	7,827.87	1,128.07	667.68	460.39	2.450		
13,600.00	6,077.90	13,846.41	6,077.89	233.21	233.49	-90.00	1,720.39	7,927.88	1,128.07	661.69	466.38	2.419		
13,619.42	6,077.96	13,865.83	6,077.94	233.80	234.08	-90.00	1,720.39	7,947.30	1,128.07	660.52	467.55	2.413		
13,636.27	6,078.00	13,882.67	6,077.99	234.30	234.58	-90.00	1,720.39	7,964.15	1,128.07	659.51	468.56	2.408 SF		



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 602 1H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	144.15	-60.79	43.93	75.00					
100.00	100.00	100.00	100.00	0.18	0.18	144.15	-60.79	43.93	75.00	74.64	0.36	209.227		
200.00	200.00	200.00	200.00	0.54	0.54	144.15	-60.79	43.93	75.00	73.93	1.08	69.742		
300.00	300.00	300.00	300.00	0.90	0.90	144.15	-60.79	43.93	75.00	73.21	1.79	41.845		
400.00	400.00	400.00	400.00	1.25	1.25	144.15	-60.79	43.93	75.00	72.49	2.51	29.890		
500.00	500.00	500.00	500.00	1.61	1.61	144.15	-60.79	43.93	75.00	71.78	3.23	23.247 CC, ES		
600.00	599.98	597.58	597.56	1.97	1.95	133.21	-62.42	44.23	77.73	73.79	3.94	19.741		
700.00	699.84	694.49	694.35	2.33	2.27	136.90	-67.28	45.13	86.16	81.50	4.67	18.465		
800.00	799.45	790.10	789.61	2.70	2.60	141.60	-75.22	46.59	100.82	95.41	5.41	18.628		
900.00	898.83	884.05	882.90	3.06	2.93	146.10	-86.07	48.59	121.19	115.03	6.16	19.683		
1,000.00	998.21	979.82	977.71	3.43	3.29	149.56	-99.41	51.05	144.53	137.69	6.84	21.121		
1,100.00	1,097.58	1,076.70	1,073.59	3.80	3.66	152.09	-113.02	53.56	168.37	160.86	7.51	22.417		
1,200.00	1,196.96	1,173.59	1,169.48	4.18	4.03	154.00	-126.64	56.07	192.45	184.26	8.19	23.492		
1,300.00	1,296.33	1,270.47	1,265.37	4.56	4.41	155.48	-140.26	58.58	216.69	207.81	8.88	24.410		
1,400.00	1,395.71	1,367.36	1,361.26	4.94	4.80	156.66	-153.87	61.09	241.03	231.46	9.57	25.195		
1,500.00	1,495.08	1,464.24	1,457.15	5.32	5.18	157.63	-167.49	63.60	265.45	255.19	10.26	25.872		
1,600.00	1,594.46	1,561.12	1,553.04	5.70	5.57	158.43	-181.11	66.10	289.93	278.97	10.96	26.461		
1,700.00	1,693.83	1,658.01	1,648.93	6.08	5.96	159.11	-194.72	68.61	314.46	302.80	11.66	26.978		
1,800.00	1,793.21	1,754.89	1,744.82	6.46	6.35	159.69	-208.34	71.12	339.02	326.66	12.36	27.433		
1,900.00	1,892.58	1,851.77	1,840.71	6.85	6.75	160.19	-221.96	73.63	363.61	350.55	13.06	27.838		
2,000.00	1,991.96	1,948.66	1,936.60	7.23	7.14	160.63	-235.57	76.14	388.22	374.45	13.77	28.200		
2,100.00	2,091.33	2,045.54	2,032.49	7.62	7.53	161.02	-249.19	78.65	412.85	398.38	14.47	28.525		
2,200.00	2,190.71	2,142.42	2,128.38	8.00	7.93	161.36	-262.80	81.16	437.50	422.32	15.18	28.818		
2,300.00	2,290.08	2,239.31	2,224.26	8.38	8.33	161.66	-276.42	83.67	462.16	446.27	15.89	29.085		
2,400.00	2,389.46	2,336.19	2,320.15	8.77	8.72	161.94	-290.04	86.18	486.83	470.23	16.60	29.327		
2,500.00	2,488.83	2,433.08	2,416.04	9.15	9.12	162.19	-303.65	88.69	511.51	494.20	17.31	29.549		
2,600.00	2,588.20	2,529.96	2,511.93	9.54	9.52	162.41	-317.27	91.20	536.20	518.18	18.02	29.753		
2,700.00	2,687.58	2,626.84	2,607.82	9.92	9.92	162.62	-330.89	93.71	560.90	542.17	18.73	29.940		
2,800.00	2,786.95	2,723.73	2,703.71	10.31	10.32	162.81	-344.50	96.22	585.60	566.16	19.45	30.114		
2,900.00	2,886.33	2,820.61	2,799.60	10.70	10.72	162.98	-358.12	98.73	610.31	590.15	20.16	30.274		
3,000.00	2,985.70	2,917.49	2,895.49	11.08	11.11	163.14	-371.74	101.24	635.02	614.15	20.87	30.423		
3,100.00	3,085.08	3,014.38	2,991.38	11.47	11.51	163.29	-385.35	103.75	659.74	638.15	21.59	30.562		
3,200.00	3,184.45	3,111.26	3,087.27	11.85	11.91	163.43	-398.97	106.26	684.46	662.16	22.30	30.692		
3,300.00	3,283.83	3,208.14	3,183.16	12.24	12.31	163.55	-412.59	108.77	709.19	686.17	23.02	30.813		
3,400.00	3,383.20	3,305.03	3,279.05	12.62	12.71	163.67	-426.20	111.28	733.91	710.18	23.73	30.927		
3,500.00	3,482.58	3,401.91	3,374.94	13.01	13.11	163.78	-439.82	113.79	758.64	734.20	24.45	31.034		
3,600.00	3,581.95	3,498.80	3,470.82	13.40	13.51	163.89	-453.44	116.30	783.38	758.22	25.16	31.135		
3,700.00	3,681.33	3,595.68	3,566.71	13.78	13.91	163.98	-467.05	118.81	808.11	782.24	25.88	31.230		
3,800.00	3,780.70	3,692.56	3,662.60	14.17	14.31	164.08	-480.67	121.32	832.85	806.26	26.59	31.319		
3,900.00	3,880.08	3,789.45	3,758.49	14.55	14.71	164.16	-494.29	123.82	857.59	830.28	27.31	31.404		
4,000.00	3,979.45	3,886.33	3,854.38	14.94	15.12	164.25	-507.90	126.33	882.33	854.30	28.02	31.484		
4,100.00	4,078.82	3,983.21	3,950.27	15.33	15.52	164.32	-521.52	128.84	907.07	878.33	28.74	31.560		
4,200.00	4,178.20	4,080.10	4,046.16	15.71	15.92	164.40	-535.14	131.35	931.82	902.36	29.46	31.633		
4,300.00	4,277.57	4,176.98	4,142.05	16.10	16.32	164.47	-548.75	133.86	956.56	926.39	30.17	31.701		
4,400.00	4,376.95	4,273.86	4,237.94	16.49	16.72	164.53	-562.37	136.37	981.31	950.42	30.89	31.767		
4,500.00	4,476.32	4,370.75	4,333.83	16.87	17.12	164.59	-575.98	138.88	1,006.05	974.45	31.61	31.829		
4,600.00	4,575.70	4,467.63	4,429.72	17.26	17.52	164.65	-589.60	141.39	1,030.80	998.48	32.32	31.889		
4,700.00	4,675.07	4,564.52	4,525.61	17.65	17.92	164.71	-603.22	143.90	1,055.55	1,022.51	33.04	31.946		
4,800.00	4,774.45	4,661.40	4,621.49	18.03	18.32	164.77	-616.83	146.41	1,080.30	1,046.54	33.76	32.000		
4,900.00	4,873.82	4,758.28	4,717.38	18.42	18.72	164.82	-630.45	148.92	1,105.06	1,070.58	34.48	32.052		
5,000.00	4,973.20	4,855.17	4,813.27	18.80	19.13	164.87	-644.07	151.43	1,129.81	1,094.61	35.19	32.102		
5,100.00	5,072.57	4,952.05	4,909.16	19.19	19.53	164.91	-657.68	153.94	1,154.56	1,118.65	35.91	32.150		

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 602 1H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore +N/-S (usft)	Centre +E/-W (usft)						
5,200.00	5,171.95	5,048.93	5,005.05	19.58	19.93	164.96	-671.30	156.45	1,179.32	1,142.69	36.63	32.196		
5,300.00	5,271.32	5,145.82	5,100.94	19.96	20.33	165.00	-684.92	158.96	1,204.07	1,166.72	37.35	32.240		
5,400.00	5,370.69	5,242.70	5,196.83	20.35	20.73	160.36	-698.53	161.47	1,228.82	1,190.76	38.07	32.282		
5,500.00	5,469.49	5,339.23	5,292.36	20.74	21.13	118.14	-712.10	163.97	1,253.15	1,214.37	38.79	32.308		
5,600.00	5,565.90	5,433.35	5,385.51	21.13	21.52	104.29	-725.33	166.62	1,276.67	1,237.16	39.51	32.312		
5,700.00	5,658.06	5,526.31	5,476.88	21.53	21.91	98.05	-738.29	177.30	1,299.50	1,259.24	40.26	32.278		
5,800.00	5,744.16	5,623.01	5,569.63	21.93	22.32	94.52	-751.45	200.98	1,321.39	1,280.30	41.09	32.157		
5,900.00	5,822.53	5,724.10	5,662.29	22.38	22.74	92.30	-764.58	238.99	1,341.92	1,299.86	42.06	31.907		
6,000.00	5,891.65	5,830.27	5,752.88	22.93	23.19	90.87	-777.40	292.65	1,360.67	1,317.44	43.23	31.473		
6,100.00	5,950.17	5,942.12	5,838.73	23.68	23.70	89.98	-789.54	363.13	1,377.20	1,332.47	44.73	30.787		
6,200.00	5,996.95	6,060.07	5,916.33	24.69	24.34	89.51	-800.50	451.10	1,391.06	1,344.35	46.71	29.781		
6,300.00	6,031.08	6,184.25	5,981.43	25.98	25.29	89.37	-809.66	556.27	1,401.82	1,352.50	49.32	28.424		
6,400.00	6,051.90	6,314.31	6,029.29	27.55	26.73	89.50	-816.36	676.82	1,409.05	1,356.39	52.66	26.758		
6,500.00	6,059.00	6,449.29	6,055.31	29.33	28.76	89.85	-819.96	809.02	1,412.40	1,355.69	56.71	24.905		
6,600.00	6,059.27	6,568.84	6,059.13	31.29	30.91	89.99	-820.41	928.45	1,412.72	1,351.73	60.99	23.162		
6,700.00	6,059.53	6,668.84	6,059.40	33.41	32.91	89.99	-820.37	1,028.45	1,412.68	1,347.45	65.24	21.655		
6,800.00	6,059.80	6,768.84	6,059.67	35.66	35.06	89.99	-820.33	1,128.45	1,412.65	1,342.91	69.74	20.256		
6,900.00	6,060.07	6,868.84	6,059.93	38.01	37.34	89.99	-820.29	1,228.45	1,412.61	1,338.15	74.46	18.972		
7,000.00	6,060.33	6,968.84	6,060.20	40.45	39.72	89.99	-820.25	1,328.45	1,412.57	1,333.22	79.35	17.802		
7,100.00	6,060.60	7,068.84	6,060.47	42.97	42.18	89.99	-820.21	1,428.45	1,412.53	1,328.14	84.39	16.738		
7,200.00	6,060.87	7,168.84	6,060.74	45.54	44.72	89.99	-820.17	1,528.45	1,412.49	1,322.94	89.55	15.773		
7,300.00	6,061.13	7,268.84	6,061.01	48.17	47.31	89.99	-820.14	1,628.45	1,412.45	1,317.63	94.82	14.896		
7,400.00	6,061.40	7,368.84	6,061.28	50.84	49.94	89.99	-820.10	1,728.44	1,412.41	1,312.24	100.17	14.101		
7,500.00	6,061.66	7,468.84	6,061.54	53.55	52.62	90.00	-820.06	1,828.44	1,412.37	1,306.78	105.59	13.376		
7,600.00	6,061.93	7,568.84	6,061.81	56.28	55.34	90.00	-820.02	1,928.44	1,412.33	1,301.26	111.07	12.715		
7,700.00	6,062.20	7,668.84	6,062.08	59.05	58.08	90.00	-819.98	2,028.44	1,412.29	1,295.68	116.61	12.111		
7,800.00	6,062.46	7,768.84	6,062.35	61.83	60.85	90.00	-819.94	2,128.44	1,412.26	1,290.06	122.19	11.558		
7,900.00	6,062.73	7,868.84	6,062.62	64.64	63.64	90.00	-819.90	2,228.44	1,412.22	1,284.40	127.82	11.049		
8,000.00	6,063.00	7,968.84	6,062.88	67.46	66.45	90.00	-819.86	2,328.44	1,412.18	1,278.70	133.47	10.580		
8,100.00	6,063.26	8,068.84	6,063.15	70.30	69.28	90.00	-819.82	2,428.44	1,412.14	1,272.98	139.16	10.147		
8,200.00	6,063.53	8,168.84	6,063.42	73.16	72.12	90.00	-819.78	2,528.44	1,412.10	1,267.22	144.88	9.747		
8,300.00	6,063.79	8,268.84	6,063.69	76.02	74.98	90.00	-819.75	2,628.44	1,412.06	1,261.44	150.62	9.375		
8,400.00	6,064.06	8,368.84	6,063.96	78.90	77.85	90.00	-819.71	2,728.44	1,412.02	1,255.64	156.38	9.030		
8,500.00	6,064.33	8,468.84	6,064.23	81.79	80.73	90.00	-819.67	2,828.44	1,411.98	1,249.83	162.16	8.708		
8,600.00	6,064.59	8,568.84	6,064.49	84.68	83.61	90.00	-819.63	2,928.44	1,411.94	1,243.99	167.95	8.407		
8,700.00	6,064.86	8,668.84	6,064.76	87.59	86.51	90.00	-819.59	3,028.44	1,411.90	1,238.14	173.77	8.125		
8,800.00	6,065.13	8,768.84	6,065.03	90.50	89.41	90.00	-819.55	3,128.44	1,411.87	1,232.27	179.59	7.862		
8,900.00	6,065.39	8,868.84	6,065.30	93.41	92.33	90.00	-819.51	3,228.44	1,411.83	1,226.40	185.43	7.614		
9,000.00	6,065.66	8,968.84	6,065.57	96.33	95.24	90.00	-819.47	3,328.44	1,411.79	1,220.51	191.28	7.381		
9,100.00	6,065.92	9,068.84	6,065.83	99.26	98.17	90.00	-819.43	3,428.44	1,411.75	1,214.61	197.14	7.161		
9,200.00	6,066.19	9,168.84	6,066.10	102.20	101.09	90.00	-819.39	3,528.44	1,411.71	1,208.70	203.01	6.954		
9,300.00	6,066.46	9,268.84	6,066.37	105.13	104.03	90.00	-819.36	3,628.44	1,411.67	1,202.78	208.89	6.758		
9,400.00	6,066.72	9,368.84	6,066.64	108.07	106.96	90.00	-819.32	3,728.44	1,411.63	1,196.86	214.77	6.573		
9,500.00	6,066.99	9,468.84	6,066.91	111.02	109.91	90.00	-819.28	3,828.44	1,411.59	1,190.93	220.67	6.397		
9,600.00	6,067.25	9,568.84	6,067.18	113.97	112.85	90.00	-819.24	3,928.44	1,411.55	1,184.99	226.57	6.230		
9,700.00	6,067.52	9,668.84	6,067.44	116.92	115.80	90.00	-819.20	4,028.44	1,411.51	1,179.04	232.47	6.072		
9,800.00	6,067.79	9,768.84	6,067.71	119.87	118.75	90.00	-819.16	4,128.44	1,411.48	1,173.09	238.39	5.921		
9,900.00	6,068.05	9,868.84	6,067.98	122.83	121.71	90.00	-819.12	4,228.44	1,411.44	1,167.13	244.30	5.777		
10,000.00	6,068.32	9,968.84	6,068.25	125.79	124.66	90.00	-819.08	4,328.44	1,411.40	1,161.17	250.23	5.640		
10,100.00	6,068.59	10,068.84	6,068.52	128.75	127.62	90.00	-819.04	4,428.43	1,411.36	1,155.20	256.15	5.510		
10,200.00	6,068.85	10,168.84	6,068.78	131.71	130.58	90.00	-819.00	4,528.43	1,411.32	1,149.23	262.09	5.385		
10,300.00	6,069.12	10,268.84	6,069.05	134.68	133.55	90.00	-818.97	4,628.43	1,411.28	1,143.26	268.02	5.266		

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

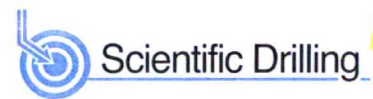
Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 602 1H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,400.00	6,069.38	10,368.84	6,069.32	137.65	136.51	90.00	-818.93	4,728.43	1,411.24	1,137.28	273.96	5.151		
10,500.00	6,069.65	10,468.84	6,069.59	140.62	139.48	90.00	-818.89	4,828.43	1,411.20	1,131.30	279.90	5.042		
10,600.00	6,069.92	10,568.84	6,069.86	143.59	142.45	90.00	-818.85	4,928.43	1,411.16	1,125.31	285.85	4.937		
10,700.00	6,070.18	10,668.84	6,070.13	146.56	145.42	90.00	-818.81	5,028.43	1,411.12	1,119.33	291.80	4.836		
10,800.00	6,070.45	10,768.84	6,070.39	149.54	148.40	90.00	-818.77	5,128.43	1,411.09	1,113.33	297.75	4.739		
10,900.00	6,070.72	10,868.84	6,070.66	152.52	151.37	90.00	-818.73	5,228.43	1,411.05	1,107.34	303.71	4.646		
11,000.00	6,070.98	10,968.84	6,070.93	155.49	154.35	90.00	-818.69	5,328.43	1,411.01	1,101.34	309.66	4.557		
11,100.00	6,071.25	11,068.84	6,071.20	158.47	157.33	90.00	-818.65	5,428.43	1,410.97	1,095.34	315.62	4.470		
11,200.00	6,071.51	11,168.84	6,071.47	161.45	160.31	90.00	-818.61	5,528.43	1,410.93	1,089.34	321.59	4.387		
11,300.00	6,071.78	11,268.84	6,071.74	164.43	163.29	90.00	-818.58	5,628.43	1,410.89	1,083.34	327.55	4.307		
11,400.00	6,072.05	11,368.84	6,072.00	167.42	166.27	90.00	-818.54	5,728.43	1,410.85	1,077.33	333.52	4.230		
11,500.00	6,072.31	11,468.84	6,072.27	170.40	169.25	90.00	-818.50	5,828.43	1,410.81	1,071.33	339.49	4.156		
11,600.00	6,072.58	11,568.84	6,072.54	173.38	172.23	90.00	-818.46	5,928.43	1,410.77	1,065.32	345.46	4.084		
11,700.00	6,072.85	11,668.84	6,072.81	176.37	175.22	90.00	-818.42	6,028.43	1,410.73	1,059.31	351.43	4.014		
11,800.00	6,073.11	11,768.84	6,073.08	179.36	178.20	90.00	-818.38	6,128.43	1,410.70	1,053.29	357.40	3.947		
11,900.00	6,073.38	11,868.84	6,073.34	182.34	181.19	90.00	-818.34	6,228.43	1,410.66	1,047.28	363.38	3.882		
12,000.00	6,073.64	11,968.84	6,073.61	185.33	184.17	90.00	-818.30	6,328.43	1,410.62	1,041.26	369.36	3.819		
12,100.00	6,073.91	12,068.84	6,073.88	188.32	187.16	90.00	-818.26	6,428.43	1,410.58	1,035.24	375.33	3.758		
12,200.00	6,074.18	12,168.84	6,074.15	191.31	190.15	90.00	-818.22	6,528.43	1,410.54	1,029.23	381.31	3.699		
12,300.00	6,074.44	12,268.84	6,074.42	194.30	193.14	90.00	-818.19	6,628.43	1,410.50	1,023.21	387.30	3.642		
12,400.00	6,074.71	12,368.84	6,074.69	197.29	196.13	90.00	-818.15	6,728.43	1,410.46	1,017.18	393.28	3.586		
12,500.00	6,074.98	12,468.84	6,074.95	200.28	199.12	90.00	-818.11	6,828.43	1,410.42	1,011.16	399.26	3.533		
12,600.00	6,075.24	12,568.84	6,075.22	203.27	202.11	90.00	-818.07	6,928.43	1,410.38	1,005.14	405.25	3.480		
12,700.00	6,075.51	12,668.84	6,075.49	206.26	205.10	90.00	-818.03	7,028.43	1,410.34	999.11	411.23	3.430		
12,800.00	6,075.77	12,768.84	6,075.76	209.26	208.09	90.00	-817.99	7,128.42	1,410.31	993.09	417.22	3.380		
12,900.00	6,076.04	12,868.84	6,076.03	212.25	211.09	90.00	-817.95	7,228.42	1,410.27	987.06	423.21	3.332		
13,000.00	6,076.31	12,968.84	6,076.29	215.24	214.08	90.00	-817.91	7,328.42	1,410.23	981.03	429.19	3.286		
13,100.00	6,076.57	13,068.84	6,076.56	218.24	217.07	90.00	-817.87	7,428.42	1,410.19	975.00	435.18	3.240		
13,200.00	6,076.84	13,168.84	6,076.83	221.23	220.07	90.00	-817.83	7,528.42	1,410.15	968.97	441.18	3.196		
13,300.00	6,077.10	13,268.84	6,077.10	224.23	223.06	90.00	-817.80	7,628.42	1,410.11	962.94	447.17	3.153		
13,400.00	6,077.37	13,368.84	6,077.37	227.22	226.06	90.00	-817.76	7,728.42	1,410.07	956.91	453.16	3.112		
13,500.00	6,077.64	13,468.84	6,077.64	230.22	229.05	90.00	-817.72	7,828.42	1,410.03	950.88	459.15	3.071		
13,600.00	6,077.90	13,568.84	6,077.90	233.21	232.05	90.00	-817.68	7,928.42	1,410.00	944.86	465.14	3.031		
13,636.27	6,078.00	13,604.82	6,078.00	234.30	233.13	90.00	-817.67	7,964.40	1,409.99	942.67	467.31	3.017 SF		



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference				Offset				Semi Major Axis				Distance		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	144.06	-40.41	29.29	49.91					
100.00	100.00	100.00	100.00	0.18	0.18	144.06	-40.41	29.29	49.91	49.55	0.36	139.226		
200.00	200.00	200.00	200.00	0.54	0.54	144.06	-40.41	29.29	49.91	48.83	1.08	46.409		
300.00	300.00	300.00	300.00	0.90	0.90	144.06	-40.41	29.29	49.91	48.12	1.79	27.845		
400.00	400.00	400.00	400.00	1.25	1.25	144.06	-40.41	29.29	49.91	47.40	2.51	19.889		
500.00	500.00	500.00	500.00	1.61	1.61	144.06	-40.41	29.29	49.91	46.68	3.23	15.470 CC, ES		
600.00	599.98	598.45	598.43	1.97	1.95	134.08	-42.10	29.36	52.55	48.61	3.94	13.344		
700.00	699.84	696.21	696.06	2.33	2.28	139.90	-47.12	29.58	60.93	56.26	4.67	13.050		
800.00	799.45	792.61	792.10	2.70	2.61	146.56	-55.33	29.94	75.85	70.43	5.42	13.994		
900.00	898.83	887.27	886.09	3.06	2.94	152.18	-66.52	30.42	96.76	90.59	6.17	15.687		
1,000.00	998.21	980.40	978.15	3.43	3.29	156.05	-80.56	31.03	121.51	114.61	6.90	17.616		
1,100.00	1,097.58	1,071.84	1,068.05	3.80	3.65	158.73	-97.24	31.76	149.71	142.10	7.61	19.680		
1,200.00	1,196.96	1,161.46	1,155.60	4.18	4.02	160.62	-116.36	32.59	181.14	172.83	8.30	21.815		
1,300.00	1,296.33	1,249.15	1,240.64	4.56	4.40	161.99	-137.71	33.51	215.62	206.64	8.98	24.016		
1,400.00	1,395.71	1,334.81	1,323.04	4.94	4.80	162.99	-161.07	34.53	253.02	243.38	9.63	26.268		
1,500.00	1,495.08	1,418.35	1,402.71	5.32	5.20	163.75	-186.21	35.62	293.19	282.92	10.26	28.562		
1,600.00	1,594.46	1,500.00	1,479.82	5.70	5.62	164.32	-213.02	36.78	336.02	325.14	10.88	30.894		
1,700.00	1,693.83	1,578.90	1,553.57	6.08	6.05	164.76	-240.99	38.00	381.38	369.92	11.47	33.262		
1,800.00	1,793.21	1,658.78	1,627.47	6.46	6.50	165.12	-271.29	39.31	429.10	417.05	12.05	35.614		
1,900.00	1,892.58	1,746.27	1,708.17	6.85	7.02	165.43	-305.05	40.78	477.48	464.80	12.67	37.673		
2,000.00	1,991.96	1,833.76	1,788.88	7.23	7.54	165.68	-338.82	42.24	525.86	512.55	13.31	39.511		
2,100.00	2,091.33	1,921.26	1,869.58	7.62	8.07	165.90	-372.58	43.71	574.25	560.30	13.95	41.156		
2,200.00	2,190.71	2,008.75	1,950.28	8.00	8.61	166.08	-406.34	45.17	622.65	608.05	14.60	42.636		
2,300.00	2,290.08	2,096.24	2,030.98	8.38	9.16	166.23	-440.11	46.64	671.05	655.79	15.26	43.971		
2,400.00	2,389.46	2,183.74	2,111.69	8.77	9.71	166.36	-473.87	48.10	719.46	703.53	15.92	45.180		
2,500.00	2,488.83	2,271.23	2,192.39	9.15	10.26	166.48	-507.64	49.57	767.86	751.27	16.59	46.279		
2,600.00	2,588.20	2,358.72	2,273.09	9.54	10.81	166.58	-541.40	51.04	816.27	799.01	17.26	47.281		
2,700.00	2,687.58	2,446.22	2,353.79	9.92	11.37	166.67	-575.16	52.50	864.68	846.74	17.94	48.199		
2,800.00	2,786.95	2,533.71	2,434.50	10.31	11.93	166.75	-608.93	53.97	913.09	894.48	18.62	49.040		
2,900.00	2,886.33	2,621.20	2,515.20	10.70	12.49	166.83	-642.69	55.43	961.51	942.21	19.30	49.815		
3,000.00	2,985.70	2,708.69	2,595.90	11.08	13.06	166.89	-676.45	56.90	1,009.92	989.94	19.99	50.530		
3,100.00	3,085.08	2,796.19	2,676.60	11.47	13.62	166.95	-710.22	58.36	1,058.34	1,037.66	20.67	51.192		
3,200.00	3,184.45	2,883.68	2,757.31	11.85	14.19	167.01	-743.98	59.83	1,106.76	1,085.39	21.36	51.806		
3,300.00	3,283.83	2,971.17	2,838.01	12.24	14.76	167.06	-777.75	61.29	1,155.17	1,133.12	22.06	52.377		
3,400.00	3,383.20	3,058.67	2,918.71	12.62	15.33	167.11	-811.51	62.76	1,203.59	1,180.84	22.75	52.909		
3,500.00	3,482.58	3,146.16	2,999.41	13.01	15.90	167.15	-845.27	64.23	1,252.01	1,228.56	23.44	53.405		
3,600.00	3,581.95	3,233.65	3,080.12	13.40	16.47	167.19	-879.04	65.69	1,300.43	1,276.29	24.14	53.870		
3,700.00	3,681.33	3,321.15	3,160.82	13.78	17.04	167.22	-912.80	67.16	1,348.85	1,324.01	24.84	54.306		
3,800.00	3,780.70	3,408.64	3,241.52	14.17	17.61	167.26	-946.57	68.62	1,397.27	1,371.73	25.54	54.715		
3,900.00	3,880.08	3,496.13	3,322.22	14.55	18.19	167.29	-980.33	70.09	1,445.69	1,419.45	26.24	55.100		
4,000.00	3,979.45	3,583.62	3,402.93	14.94	18.76	167.32	-1,014.09	71.55	1,494.11	1,467.17	26.94	55.463		
4,100.00	4,078.82	3,671.12	3,483.63	15.33	19.33	167.35	-1,047.86	73.02	1,542.53	1,514.89	27.64	55.805		
4,200.00	4,178.20	3,758.61	3,564.33	15.71	19.91	167.37	-1,081.62	74.48	1,590.95	1,562.60	28.34	56.128		
4,300.00	4,277.57	3,846.10	3,645.03	16.10	20.48	167.40	-1,115.38	75.95	1,639.37	1,610.32	29.05	56.434		
4,400.00	4,376.95	3,933.60	3,725.74	16.49	21.06	167.42	-1,149.15	77.42	1,687.79	1,658.04	29.75	56.724		
4,500.00	4,476.32	4,021.09	3,806.44	16.87	21.64	167.44	-1,182.91	78.88	1,736.21	1,705.75	30.46	57.000		
4,600.00	4,575.70	4,108.58	3,887.14	17.26	22.21	167.46	-1,216.68	80.35	1,784.63	1,753.47	31.17	57.261		
4,700.00	4,675.07	4,196.08	3,967.84	17.65	22.79	167.48	-1,250.44	81.81	1,833.06	1,801.18	31.87	57.510		
4,800.00	4,774.45	4,283.57	4,048.55	18.03	23.36	167.50	-1,284.20	83.28	1,881.48	1,848.90	32.58	57.746		
4,900.00	4,873.82	4,371.06	4,129.25	18.42	23.94	167.52	-1,317.97	84.74	1,929.90	1,896.61	33.29	57.972		
5,000.00	4,973.20	4,458.55	4,209.95	18.80	24.52	167.54	-1,351.73	86.21	1,978.32	1,944.32	34.00	58.187		
5,100.00	5,072.57	4,546.05	4,290.65	19.19	25.10	167.55	-1,385.49	87.67	2,026.75	1,992.04	34.71	58.393		

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 602 2H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,171.95	4,633.54	4,371.36	19.58	25.67	167.57	-1,419.26	89.14	2,075.17	2,039.75	35.42	58.589		
5,300.00	5,271.32	4,721.03	4,452.06	19.96	26.25	167.58	-1,453.02	90.61	2,123.59	2,087.46	36.13	58.777		
5,400.00	5,370.69	4,808.53	4,532.76	20.35	26.83	162.76	-1,486.79	92.07	2,172.01	2,135.17	36.84	58.957		
5,500.00	5,469.49	4,895.64	4,613.12	20.74	27.41	117.97	-1,520.40	93.53	2,220.24	2,182.69	37.56	59.118		
5,600.00	5,565.90	4,980.89	4,691.75	21.13	27.97	101.40	-1,553.30	94.96	2,267.62	2,229.35	38.27	59.250		
5,700.00	5,658.06	5,062.62	4,767.13	21.53	28.51	92.67	-1,584.84	96.33	2,313.59	2,274.61	38.99	59.341		
5,800.00	5,744.16	5,139.23	4,837.80	21.93	29.02	86.93	-1,614.41	97.61	2,357.82	2,318.11	39.72	59.367		
5,900.00	5,822.53	5,209.24	4,902.37	22.38	29.48	82.71	-1,641.42	98.78	2,400.13	2,359.64	40.49	59.284		
6,000.00	5,891.65	5,271.28	4,959.59	22.93	29.89	79.36	-1,665.36	99.82	2,440.42	2,399.08	41.34	59.035		
6,100.00	5,950.17	5,324.14	5,008.35	23.68	30.24	76.55	-1,685.76	100.71	2,478.68	2,436.36	42.32	58.566		
6,200.00	5,996.95	5,366.79	5,047.70	24.69	30.52	74.07	-1,702.22	101.42	2,514.88	2,471.40	43.48	57.843		
6,300.00	6,031.08	5,398.41	5,076.86	25.98	30.73	71.80	-1,714.42	101.95	2,548.94	2,504.13	44.82	56.876		
6,400.00	6,051.90	5,418.38	5,095.28	27.55	30.86	69.65	-1,722.13	102.29	2,580.72	2,534.40	46.32	55.720		
6,500.00	6,059.00	5,426.31	5,102.59	29.33	30.92	67.62	-1,725.19	102.42	2,609.95	2,562.03	47.92	54.460		
6,600.00	6,059.27	5,428.23	5,104.36	31.29	30.93	67.66	-1,725.93	102.45	2,639.60	2,589.98	49.62	53.196		
6,700.00	6,059.53	5,430.15	5,106.14	33.41	30.94	67.70	-1,726.67	102.48	2,672.65	2,621.25	51.40	51.997		
6,800.00	6,059.80	5,432.07	5,107.91	35.66	30.95	67.75	-1,727.41	102.52	2,708.99	2,655.77	53.23	50.896		
6,900.00	6,060.07	5,434.99	5,109.68	38.01	30.96	67.80	-1,728.15	102.56	2,747.32	2,688.46	55.11	49.847		
7,000.00	6,060.33	5,437.91	5,111.45	40.45	30.97	67.85	-1,728.89	102.60	2,786.65	2,721.13	57.04	48.847		
7,100.00	6,060.60	5,440.83	5,113.22	42.97	30.98	67.90	-1,729.63	102.64	2,826.98	2,754.82	59.04	47.896		
7,200.00	6,060.87	5,443.75	5,115.00	45.54	30.99	67.95	-1,730.37	102.68	2,868.31	2,788.51	61.11	46.996		
7,300.00	6,061.13	5,446.67	5,116.77	48.17	31.00	68.00	-1,731.11	102.72	2,910.64	2,822.20	63.26	46.146		
7,400.00	6,061.40	5,449.59	5,118.54	50.84	31.01	68.05	-1,731.85	102.76	2,953.97	2,855.89	65.46	45.346		
7,500.00	6,061.66	5,452.51	5,120.31	53.55	31.02	68.10	-1,732.59	102.80	2,998.30	2,889.58	67.71	44.596		
7,600.00	6,061.93	5,455.43	5,122.08	56.28	31.03	68.15	-1,733.33	102.84	3,043.63	2,923.27	70.01	43.896		
7,700.00	6,062.20	5,458.35	5,123.85	59.05	31.04	68.20	-1,734.07	102.88	3,089.96	2,956.96	72.36	43.246		
7,800.00	6,062.46	5,461.27	5,125.62	61.83	31.05	68.25	-1,734.81	102.92	3,137.29	2,990.65	74.76	42.646		
7,900.00	6,062.73	5,464.19	5,127.39	64.64	31.06	68.30	-1,735.55	102.96	3,185.62	3,024.34	77.21	42.096		
8,000.00	6,063.00	5,467.11	5,129.16	67.46	31.07	68.35	-1,736.29	103.00	3,234.95	3,058.03	79.71	41.596		
8,100.00	6,063.26	5,470.03	5,130.93	70.30	31.08	68.40	-1,737.03	103.04	3,285.28	3,091.72	82.26	41.146		
8,200.00	6,063.53	5,472.95	5,132.70	73.16	31.09	68.45	-1,737.77	103.08	3,336.61	3,125.41	84.86	40.746		
8,300.00	6,063.79	5,475.87	5,134.47	76.02	31.10	68.50	-1,738.51	103.12	3,388.94	3,159.10	87.51	40.396		
8,400.00	6,064.06	5,478.79	5,136.24	78.90	31.11	68.55	-1,739.25	103.16	3,442.27	3,192.79	90.21	40.096		
8,500.00	6,064.33	5,481.71	5,138.01	81.79	31.12	68.60	-1,740.00	103.20	3,496.60	3,226.48	92.96	39.846		
8,600.00	6,064.59	5,484.63	5,139.78	84.68	31.13	68.65	-1,740.74	103.24	3,551.93	3,260.17	95.76	39.596		
8,700.00	6,064.86	5,487.55	5,141.55	87.59	31.14	68.70	-1,741.48	103.28	3,608.26	3,293.86	98.61	39.396		
8,800.00	6,065.13	5,490.47	5,143.32	90.50	31.15	68.75	-1,742.22	103.32	3,665.59	3,327.55	101.51	39.196		
8,900.00	6,065.39	5,493.39	5,145.09	93.41	31.16	68.80	-1,742.96	103.36	3,723.92	3,361.24	104.46	38.996		
9,000.00	6,065.66	5,496.31	5,146.86	96.33	31.17	68.85	-1,743.70	103.40	3,783.25	3,394.93	107.46	38.796		
9,100.00	6,065.92	5,499.23	5,148.63	99.26	31.18	68.90	-1,744.44	103.44	3,843.58	3,428.62	110.51	38.596		
9,200.00	6,066.19	5,502.15	5,150.40	102.20	31.19	68.95	-1,745.18	103.48	3,904.91	3,462.31	113.61	38.396		
9,300.00	6,066.46	5,505.07	5,152.17	105.13	31.20	69.00	-1,745.92	103.52	3,967.24	3,496.00	116.76	38.196		
9,400.00	6,066.72	5,507.99	5,153.94	108.07	31.21	69.05	-1,746.66	103.56	4,030.57	3,529.69	119.96	37.996		
9,500.00	6,066.99	5,510.91	5,155.71	111.02	31.22	69.10	-1,747.40	103.60	4,094.90	3,563.38	123.21	37.796		
9,600.00	6,067.25	5,513.83	5,157.48	113.97	31.23	69.15	-1,748.14	103.64	4,160.23	3,597.07	126.51	37.596		
9,700.00	6,067.52	5,516.75	5,159.25	116.92	31.24	69.20	-1,748.88	103.68	4,226.56	3,630.76	129.86	37.396		
9,800.00	6,067.79	5,519.67	5,161.02	119.87	31.25	69.25	-1,749.62	103.72	4,293.89	3,664.45	133.26	37.196		
9,900.00	6,068.05	5,522.59	5,162.79	122.83	31.26	69.30	-1,750.36	103.76	4,362.22	3,698.14	136.71	36.996		
10,000.00	6,068.32	5,525.51	5,164.56	125.79	31.27	69.35	-1,751.10	103.80	4,431.55	3,731.83	140.21	36.796		
10,100.00	6,068.59	5,528.43	5,166.33	128.75	31.28	69.40	-1,751.84	103.84	4,501.88	3,765.52	143.76	36.596		
10,200.00	6,068.85	5,531.35	5,168.10	131.71	31.29	69.45	-1,752.58	103.88	4,573.21	3,799.21	147.36	36.396		
10,300.00	6,069.12	5,534.27	5,169.87	134.68	31.30	69.50	-1,753.32	103.92	4,645.54	3,832.90	151.01	36.196		

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 602 2H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,400.00	6,069.38	10,776.89	6,069.41	137.65	139.87	90.00	-2,121.75	4,729.52	2,714.07	2,437.82	276.25	9.825		
10,500.00	6,069.65	10,876.89	6,069.68	140.62	142.80	90.00	-2,121.69	4,829.52	2,714.01	2,431.83	282.18	9.618		
10,600.00	6,069.92	10,976.89	6,069.94	143.59	145.74	90.00	-2,121.63	4,929.52	2,713.95	2,425.83	288.12	9.420		
10,700.00	6,070.18	11,076.89	6,070.21	146.56	148.68	90.00	-2,121.57	5,029.52	2,713.89	2,419.83	294.06	9.229		
10,800.00	6,070.45	11,176.89	6,070.48	149.54	151.63	90.00	-2,121.51	5,129.52	2,713.83	2,413.83	300.00	9.046		
10,900.00	6,070.72	11,276.89	6,070.74	152.52	154.57	90.00	-2,121.45	5,229.52	2,713.77	2,407.82	305.95	8.870		
11,000.00	6,070.98	11,376.89	6,071.01	155.49	157.52	90.00	-2,121.39	5,329.52	2,713.71	2,401.81	311.90	8.701		
11,100.00	6,071.25	11,476.89	6,071.27	158.47	160.47	90.00	-2,121.33	5,429.52	2,713.65	2,395.80	317.85	8.537		
11,200.00	6,071.51	11,576.89	6,071.54	161.45	163.42	90.00	-2,121.27	5,529.52	2,713.59	2,389.78	323.81	8.380		
11,300.00	6,071.78	11,676.89	6,071.81	164.43	166.38	90.00	-2,121.21	5,629.52	2,713.53	2,383.76	329.76	8.229		
11,400.00	6,072.05	11,776.89	6,072.07	167.42	169.34	90.00	-2,121.15	5,729.52	2,713.47	2,377.74	335.72	8.082		
11,500.00	6,072.31	11,876.89	6,072.34	170.40	172.30	90.00	-2,121.09	5,829.52	2,713.41	2,371.72	341.68	7.941		
11,600.00	6,072.58	11,976.89	6,072.61	173.38	175.26	90.00	-2,121.03	5,929.52	2,713.34	2,365.70	347.65	7.805		
11,700.00	6,072.85	12,076.89	6,072.87	176.37	178.22	90.00	-2,120.97	6,029.52	2,713.28	2,359.67	353.61	7.673		
11,800.00	6,073.11	12,176.89	6,073.14	179.36	181.19	90.00	-2,120.91	6,129.52	2,713.22	2,353.64	359.58	7.546		
11,900.00	6,073.38	12,276.89	6,073.41	182.34	184.15	90.00	-2,120.85	6,229.52	2,713.16	2,347.61	365.55	7.422		
12,000.00	6,073.64	12,376.89	6,073.67	185.33	187.12	90.00	-2,120.79	6,329.52	2,713.10	2,341.58	371.52	7.303		
12,100.00	6,073.91	12,476.89	6,073.94	188.32	190.09	90.00	-2,120.73	6,429.52	2,713.04	2,335.55	377.49	7.187		
12,200.00	6,074.18	12,576.89	6,074.20	191.31	193.06	90.00	-2,120.67	6,529.52	2,712.98	2,329.51	383.47	7.075		
12,300.00	6,074.44	12,676.89	6,074.47	194.30	196.03	90.00	-2,120.61	6,629.52	2,712.92	2,323.48	389.44	6.966		
12,400.00	6,074.71	12,776.89	6,074.74	197.29	199.00	90.00	-2,120.54	6,729.52	2,712.86	2,317.44	395.42	6.861		
12,500.00	6,074.98	12,876.89	6,075.00	200.28	201.98	90.00	-2,120.48	6,829.52	2,712.80	2,311.40	401.40	6.758		
12,600.00	6,075.24	12,976.89	6,075.27	203.27	204.95	90.00	-2,120.42	6,929.52	2,712.74	2,305.36	407.38	6.659		
12,700.00	6,075.51	13,076.89	6,075.54	206.26	207.93	90.00	-2,120.36	7,029.52	2,712.68	2,299.32	413.36	6.563		
12,800.00	6,075.77	13,176.89	6,075.80	209.26	210.90	90.00	-2,120.30	7,129.51	2,712.62	2,293.28	419.34	6.469		
12,900.00	6,076.04	13,276.89	6,076.07	212.25	213.88	90.00	-2,120.24	7,229.51	2,712.56	2,287.23	425.33	6.378		
13,000.00	6,076.31	13,376.89	6,076.34	215.24	216.86	90.00	-2,120.18	7,329.51	2,712.50	2,281.19	431.31	6.289		
13,100.00	6,076.57	13,476.89	6,076.60	218.24	219.84	90.00	-2,120.12	7,429.51	2,712.44	2,275.14	437.30	6.203		
13,200.00	6,076.84	13,576.89	6,076.87	221.23	222.82	90.00	-2,120.06	7,529.51	2,712.38	2,269.10	443.28	6.119		
13,300.00	6,077.10	13,676.89	6,077.14	224.23	225.80	90.00	-2,120.00	7,629.51	2,712.32	2,263.05	449.27	6.037		
13,400.00	6,077.37	13,776.89	6,077.40	227.22	228.79	90.00	-2,119.94	7,729.51	2,712.26	2,257.00	455.26	5.958		
13,500.00	6,077.64	13,876.89	6,077.67	230.22	231.77	90.00	-2,119.88	7,829.51	2,712.20	2,250.95	461.25	5.880		
13,600.00	6,077.90	13,976.71	6,077.93	233.21	234.75	90.00	-2,119.82	7,929.33	2,712.14	2,244.91	467.23	5.805		
13,626.13	6,077.97	14,001.38	6,078.00	234.00	235.48	90.00	-2,119.81	7,954.01	2,712.13	2,243.37	468.76	5.786		
13,636.27	6,078.00	14,001.38	6,078.00	234.30	235.48	90.00	-2,119.81	7,954.01	2,712.14	2,243.03	469.11	5.781 SF		

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-66.62	11.65	-26.95	29.36					
100.00	100.00	100.00	100.00	0.18	0.18	-66.62	11.65	-26.95	29.36	29.00	0.36	81.909		
200.00	200.00	200.00	200.00	0.54	0.54	-66.62	11.65	-26.95	29.36	28.29	1.08	27.303		
300.00	300.00	300.00	300.00	0.90	0.90	-66.62	11.65	-26.95	29.36	27.57	1.79	16.382		
400.00	400.00	400.00	400.00	1.25	1.25	-66.62	11.65	-26.95	29.36	26.85	2.51	11.701		
500.00	500.00	500.00	500.00	1.61	1.61	-66.62	11.65	-26.95	29.36	26.14	3.23	9.101 CC, ES		
600.00	599.98	599.27	599.25	1.97	1.97	-79.87	13.25	-27.58	30.25	26.30	3.95	7.660		
700.00	699.84	698.48	698.33	2.33	2.33	-82.26	18.05	-29.47	32.97	28.29	4.68	7.041		
800.00	799.45	797.83	797.31	2.70	2.69	-85.65	25.89	-32.55	37.49	32.08	5.41	6.932 SF		
900.00	898.83	897.64	896.69	3.06	3.05	-90.70	34.52	-35.94	42.56	36.44	6.12	6.950		
1,000.00	998.21	997.44	996.06	3.43	3.42	-94.75	43.15	-39.34	47.90	41.04	6.85	6.990		
1,100.00	1,097.58	1,097.25	1,095.44	3.80	3.78	-97.97	51.78	-42.73	53.42	45.84	7.59	7.041		
1,200.00	1,196.96	1,197.06	1,194.81	4.18	4.16	-100.59	60.41	-46.13	59.09	50.76	8.33	7.094		
1,300.00	1,296.33	1,296.86	1,294.19	4.56	4.53	-102.74	69.03	-49.52	64.85	55.78	9.07	7.147		
1,400.00	1,395.71	1,396.67	1,393.56	4.94	4.90	-104.54	77.66	-52.91	70.69	60.87	9.82	7.197		
1,500.00	1,495.08	1,496.48	1,492.94	5.32	5.27	-106.07	86.29	-56.31	76.59	66.02	10.57	7.245		
1,600.00	1,594.46	1,596.28	1,592.31	5.70	5.65	-107.38	94.92	-59.70	82.54	71.22	11.32	7.289		
1,700.00	1,693.83	1,696.09	1,691.69	6.08	6.02	-108.51	103.55	-63.09	88.53	76.45	12.08	7.331		
1,800.00	1,793.21	1,795.90	1,791.06	6.46	6.40	-109.49	112.18	-66.49	94.54	81.71	12.83	7.369		
1,900.00	1,892.58	1,895.70	1,890.44	6.85	6.77	-110.36	120.81	-69.88	100.58	86.99	13.58	7.404		
2,000.00	1,991.96	1,995.51	1,989.81	7.23	7.15	-111.13	129.44	-73.28	106.64	92.30	14.34	7.437		
2,100.00	2,091.33	2,095.32	2,089.19	7.62	7.53	-111.82	138.07	-76.67	112.71	97.62	15.09	7.468		
2,200.00	2,190.71	2,195.12	2,188.56	8.00	7.90	-112.43	146.70	-80.06	118.80	102.95	15.85	7.496		
2,300.00	2,290.08	2,294.93	2,287.94	8.38	8.28	-112.99	155.33	-83.46	124.91	108.30	16.60	7.523		
2,400.00	2,389.46	2,394.74	2,387.31	8.77	8.65	-113.49	163.96	-86.85	131.02	113.66	17.36	7.547		
2,500.00	2,488.83	2,494.54	2,486.69	9.15	9.03	-113.95	172.59	-90.25	137.14	119.03	18.12	7.570		
2,600.00	2,588.20	2,594.35	2,586.06	9.54	9.41	-114.37	181.22	-93.64	143.27	124.40	18.87	7.592		
2,700.00	2,687.58	2,694.16	2,685.43	9.92	9.78	-114.76	189.84	-97.03	149.41	129.78	19.63	7.612		
2,800.00	2,786.95	2,793.96	2,784.81	10.31	10.16	-115.12	198.47	-100.43	155.56	135.17	20.39	7.631		
2,900.00	2,886.33	2,893.77	2,884.18	10.70	10.54	-115.44	207.10	-103.82	161.70	140.56	21.14	7.648		
3,000.00	2,985.70	2,993.58	2,983.56	11.08	10.92	-115.75	215.73	-107.21	167.86	145.96	21.90	7.665		
3,100.00	3,085.08	3,093.38	3,082.93	11.47	11.29	-116.03	224.36	-110.61	174.02	151.36	22.66	7.681		
3,200.00	3,184.45	3,193.19	3,182.31	11.85	11.67	-116.29	232.99	-114.00	180.18	156.77	23.41	7.696		
3,300.00	3,283.83	3,293.00	3,281.68	12.24	12.05	-116.54	241.62	-117.40	186.35	162.18	24.17	7.710		
3,400.00	3,383.20	3,392.80	3,381.06	12.62	12.42	-116.77	250.25	-120.79	192.52	167.59	24.93	7.723		
3,500.00	3,482.58	3,492.61	3,480.43	13.01	12.80	-116.99	258.88	-124.18	198.69	173.00	25.68	7.736		
3,600.00	3,581.95	3,592.42	3,579.81	13.40	13.18	-117.19	267.51	-127.58	204.86	178.42	26.44	7.748		
3,700.00	3,681.33	3,692.22	3,679.18	13.78	13.56	-117.38	276.14	-130.97	211.04	183.84	27.20	7.759		
3,800.00	3,780.70	3,792.03	3,778.56	14.17	13.93	-117.56	284.77	-134.37	217.22	189.27	27.96	7.770		
3,900.00	3,880.08	3,891.84	3,877.93	14.55	14.31	-117.73	293.40	-137.76	223.40	194.69	28.71	7.780		
4,000.00	3,979.45	3,991.64	3,977.31	14.94	14.69	-117.89	302.03	-141.15	229.59	200.12	29.47	7.790		
4,100.00	4,078.82	4,091.45	4,076.68	15.33	15.06	-118.04	310.65	-144.55	235.77	205.54	30.23	7.800		
4,200.00	4,178.20	4,191.26	4,176.06	15.71	15.44	-118.19	319.28	-147.94	241.96	210.97	30.99	7.809		
4,300.00	4,277.57	4,291.06	4,275.43	16.10	15.82	-118.33	327.91	-151.34	248.15	216.40	31.74	7.817		
4,400.00	4,376.95	4,390.87	4,374.81	16.49	16.20	-118.46	336.54	-154.73	254.34	221.84	32.50	7.826		
4,500.00	4,476.32	4,490.68	4,474.18	16.87	16.57	-118.58	345.17	-158.12	260.53	227.27	33.26	7.833		
4,600.00	4,575.70	4,590.48	4,573.56	17.26	16.95	-118.70	353.80	-161.52	266.72	232.70	34.02	7.841		
4,700.00	4,675.07	4,690.29	4,672.93	17.65	17.33	-118.81	362.43	-164.91	272.91	238.14	34.77	7.848		
4,800.00	4,774.45	4,790.10	4,772.31	18.03	17.71	-118.92	371.06	-168.30	279.11	243.58	35.53	7.855		
4,900.00	4,873.82	4,889.90	4,871.68	18.42	18.08	-119.03	379.69	-171.70	285.30	249.01	36.29	7.862		
5,000.00	4,973.20	4,989.71	4,971.06	18.80	18.46	-119.13	388.32	-175.09	291.50	254.45	37.05	7.868		
5,100.00	5,072.57	5,089.52	5,070.43	19.19	18.84	-119.22	396.95	-178.49	297.69	259.89	37.80	7.875		

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 603 1H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
5,200.00	5,171.95	5,189.32	5,169.81	19.58	19.22	-119.31	405.58	-181.88	303.89	265.33	38.56	7.881		
5,300.00	5,271.32	5,289.13	5,269.18	19.96	19.59	-119.40	414.21	-185.27	310.09	270.77	39.32	7.886		
5,400.00	5,370.69	5,388.93	5,368.56	20.35	19.97	-124.04	422.83	-188.67	316.32	276.24	40.08	7.893		
5,500.00	5,469.49	5,457.76	5,436.88	20.74	20.24	-164.72	428.77	-194.20	334.46	294.01	40.45	8.269		
5,600.00	5,565.90	5,519.75	5,497.70	21.13	20.48	-177.57	434.04	-204.79	373.78	333.29	40.49	9.232		
5,700.00	5,658.06	5,571.86	5,547.98	21.53	20.69	176.59	438.40	-217.75	431.67	391.39	40.28	10.716		
5,800.00	5,744.16	5,612.64	5,586.59	21.93	20.86	172.48	441.75	-230.43	504.63	464.68	39.95	12.631		
5,900.00	5,822.53	5,650.00	5,621.27	22.38	21.01	168.40	444.75	-243.97	589.04	549.18	39.85	14.780		
6,000.00	5,891.65	5,650.00	5,621.27	22.93	21.01	158.98	444.75	-243.97	681.26	642.26	39.00	17.470		
6,100.00	5,950.17	5,671.82	5,641.19	23.68	21.11	142.48	446.48	-252.71	777.94	738.78	39.16	19.867		
6,200.00	5,996.95	5,674.66	5,643.76	24.69	21.12	90.26	446.70	-253.89	876.96	837.87	39.09	22.436		
6,300.00	6,031.08	5,671.24	5,640.67	25.98	21.11	41.39	446.43	-252.47	975.98	936.85	39.12	24.947		
6,400.00	6,051.90	5,650.00	5,621.27	27.55	21.01	24.48	444.75	-243.97	1,073.39	1,034.41	38.98	27.535		
6,500.00	6,059.00	5,650.00	5,621.27	29.33	21.01	18.74	444.75	-243.97	1,167.16	1,127.69	39.47	29.571		
6,600.00	6,059.27	5,650.00	5,621.27	31.29	21.01	18.74	444.75	-243.97	1,259.71	1,219.76	39.95	31.528		
6,700.00	6,059.53	5,623.20	5,596.46	33.41	20.90	18.04	442.60	-234.07	1,352.56	1,312.63	39.93	33.874		
6,800.00	6,059.80	5,600.00	5,574.70	35.66	20.81	17.48	440.72	-226.26	1,446.39	1,406.44	39.95	36.205		
6,900.00	6,060.07	5,600.00	5,574.70	38.01	20.81	17.48	440.72	-226.26	1,540.50	1,500.22	40.28	38.242		
7,000.00	6,060.33	5,600.00	5,574.70	40.45	20.81	17.48	440.72	-226.26	1,635.31	1,594.74	40.56	40.314		
7,100.00	6,060.60	5,582.22	5,557.86	42.97	20.73	17.07	439.26	-220.76	1,730.39	1,689.80	40.59	42.628		
7,200.00	6,060.87	5,573.90	5,549.92	45.54	20.70	16.89	438.57	-218.33	1,825.92	1,785.20	40.72	44.840		
7,300.00	6,061.13	5,550.00	5,527.01	48.17	20.60	16.40	436.58	-211.86	1,922.04	1,881.38	40.66	47.266		
7,400.00	6,061.40	5,550.00	5,527.01	50.84	20.60	16.40	436.58	-211.86	2,018.04	1,977.19	40.85	49.397		
7,500.00	6,061.66	5,550.00	5,527.01	53.55	20.60	16.40	436.58	-211.86	2,114.41	2,073.39	41.02	51.544		
7,600.00	6,061.93	5,550.00	5,527.01	56.28	20.60	16.40	436.58	-211.86	2,211.10	2,169.93	41.17	53.704		
7,700.00	6,062.20	5,550.00	5,527.01	59.05	20.60	16.40	436.58	-211.86	2,308.07	2,266.76	41.31	55.875		
7,800.00	6,062.46	5,550.00	5,527.01	61.83	20.60	16.40	436.58	-211.86	2,405.29	2,363.86	41.43	58.055		
7,900.00	6,062.73	5,529.60	5,507.28	64.64	20.52	16.00	434.87	-206.95	2,502.36	2,460.98	41.38	60.474		
8,000.00	6,063.00	5,524.75	5,502.57	67.46	20.50	15.91	434.46	-205.87	2,599.80	2,558.35	41.45	62.719		
8,100.00	6,063.26	5,520.18	5,498.13	70.30	20.48	15.83	434.08	-204.88	2,697.39	2,655.87	41.52	64.966		
8,200.00	6,063.53	5,500.00	5,478.43	73.16	20.40	15.47	432.37	-200.84	2,795.33	2,753.87	41.47	67.407		
8,300.00	6,063.79	5,500.00	5,478.43	76.02	20.40	15.47	432.37	-200.84	2,893.09	2,851.52	41.57	69.604		
8,400.00	6,064.06	5,500.00	5,478.43	78.90	20.40	15.47	432.37	-200.84	2,990.99	2,949.33	41.66	71.803		
8,500.00	6,064.33	5,500.00	5,478.43	81.79	20.40	15.47	432.37	-200.84	3,089.02	3,047.28	41.74	74.005		
8,600.00	6,064.59	5,500.00	5,478.43	84.68	20.40	15.47	432.37	-200.84	3,187.18	3,145.36	41.82	76.208		
8,700.00	6,064.86	5,500.00	5,478.43	87.59	20.40	15.47	432.37	-200.84	3,285.45	3,243.55	41.90	78.412		
8,800.00	6,065.13	5,500.00	5,478.43	90.50	20.40	15.47	432.37	-200.84	3,383.82	3,341.84	41.97	80.617		
8,900.00	6,065.39	5,500.00	5,478.43	93.41	20.40	15.47	432.37	-200.84	3,482.28	3,440.24	42.05	82.821		
9,000.00	6,065.66	5,500.00	5,478.43	96.33	20.40	15.47	432.37	-200.84	3,580.83	3,538.71	42.12	85.025		
9,100.00	6,065.92	5,500.00	5,478.43	99.26	20.40	15.47	432.37	-200.84	3,679.46	3,637.27	42.18	87.227		
9,200.00	6,066.19	5,500.00	5,478.43	102.20	20.40	15.47	432.37	-200.84	3,778.15	3,735.91	42.25	89.428		
9,300.00	6,066.46	5,500.00	5,478.43	105.13	20.40	15.47	432.37	-200.84	3,876.92	3,834.61	42.31	91.627		
9,400.00	6,066.72	5,478.20	5,457.03	108.07	20.32	15.11	430.51	-197.10	3,975.36	3,933.10	42.25	94.083		
9,500.00	6,066.99	5,475.90	5,454.77	111.02	20.31	15.07	430.32	-196.75	4,074.15	4,031.85	42.30	96.305		
9,600.00	6,067.25	5,473.69	5,452.59	113.97	20.30	15.04	430.13	-196.41	4,173.00	4,130.65	42.36	98.522		
9,700.00	6,067.52	5,471.57	5,450.51	116.92	20.29	15.00	429.95	-196.10	4,271.90	4,229.49	42.41	100.736		
9,800.00	6,067.79	5,450.00	5,429.20	119.87	20.21	14.67	428.10	-193.24	4,371.14	4,328.79	42.36	103.201		
9,900.00	6,068.05	5,450.00	5,429.20	122.83	20.21	14.67	428.10	-193.24	4,470.06	4,427.65	42.42	105.381		
10,000.00	6,068.32	5,450.00	5,429.20	125.79	20.21	14.67	428.10	-193.24	4,569.03	4,526.55	42.48	107.557		
10,100.00	6,068.59	5,450.00	5,429.20	128.75	20.21	14.67	428.10	-193.24	4,668.04	4,625.50	42.54	109.729		
10,200.00	6,068.85	5,450.00	5,429.20	131.71	20.21	14.67	428.10	-193.24	4,767.09	4,724.49	42.60	111.897		
10,300.00	6,069.12	5,450.00	5,429.20	134.68	20.21	14.67	428.10	-193.24	4,866.18	4,823.52	42.66	114.060		

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 603 1H - OH - Plan #2														Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
10,400.00	6,069.38	5,450.00	5,429.20	137.65	20.21	14.67	428.10	-193.24	4,965.31	4,922.58	42.72	116.219			
10,500.00	6,069.65	5,450.00	5,429.20	140.62	20.21	14.67	428.10	-193.24	5,064.47	5,021.68	42.78	118.373			
10,600.00	6,069.92	5,450.00	5,429.20	143.59	20.21	14.67	428.10	-193.24	5,163.66	5,120.82	42.84	120.522			
10,700.00	6,070.18	5,450.00	5,429.20	146.56	20.21	14.67	428.10	-193.24	5,262.89	5,219.98	42.90	122.665			
10,800.00	6,070.45	5,450.00	5,429.20	149.54	20.21	14.67	428.10	-193.24	5,362.14	5,319.17	42.96	124.803			
10,900.00	6,070.72	5,450.00	5,429.20	152.52	20.21	14.67	428.10	-193.24	5,461.42	5,418.39	43.03	126.935			
11,000.00	6,070.98	5,450.00	5,429.20	155.49	20.21	14.67	428.10	-193.24	5,560.72	5,517.64	43.09	129.062			
11,100.00	6,071.25	5,450.00	5,429.20	158.47	20.21	14.67	428.10	-193.24	5,660.05	5,616.91	43.15	131.182			
11,200.00	6,071.51	5,450.00	5,429.20	161.45	20.21	14.67	428.10	-193.24	5,759.41	5,716.20	43.21	133.297			
11,300.00	6,071.78	5,450.00	5,429.20	164.43	20.21	14.67	428.10	-193.24	5,858.78	5,815.52	43.27	135.405			
11,400.00	6,072.05	5,450.00	5,429.20	167.42	20.21	14.67	428.10	-193.24	5,958.18	5,914.85	43.33	137.507			
11,500.00	6,072.31	5,450.00	5,429.20	170.40	20.21	14.67	428.10	-193.24	6,057.60	6,014.20	43.39	139.603			
11,600.00	6,072.58	5,450.00	5,429.20	173.38	20.21	14.67	428.10	-193.24	6,157.03	6,113.58	43.45	141.692			
11,700.00	6,072.85	5,450.00	5,429.20	176.37	20.21	14.67	428.10	-193.24	6,256.48	6,212.97	43.52	143.774			
11,800.00	6,073.11	5,450.00	5,429.20	179.36	20.21	14.67	428.10	-193.24	6,355.95	6,312.38	43.58	145.849			
11,900.00	6,073.38	5,450.00	5,429.20	182.34	20.21	14.67	428.10	-193.24	6,455.44	6,411.80	43.64	147.918			
12,000.00	6,073.64	5,450.00	5,429.20	185.33	20.21	14.67	428.10	-193.24	6,554.94	6,511.24	43.71	149.979			
12,100.00	6,073.91	5,450.00	5,429.20	188.32	20.21	14.67	428.10	-193.24	6,654.46	6,610.69	43.77	152.034			
12,200.00	6,074.18	5,450.00	5,429.20	191.31	20.21	14.67	428.10	-193.24	6,753.99	6,710.16	43.83	154.081			
12,300.00	6,074.44	5,450.00	5,429.20	194.30	20.21	14.67	428.10	-193.24	6,853.54	6,809.64	43.90	156.121			
12,400.00	6,074.71	5,450.00	5,429.20	197.29	20.21	14.67	428.10	-193.24	6,953.10	6,909.13	43.96	158.154			
12,500.00	6,074.98	5,450.00	5,429.20	200.28	20.21	14.67	428.10	-193.24	7,052.67	7,008.64	44.03	160.179			
12,600.00	6,075.24	5,450.00	5,429.20	203.27	20.21	14.67	428.10	-193.24	7,152.25	7,108.15	44.10	162.197			
12,700.00	6,075.51	5,450.00	5,429.20	206.26	20.21	14.67	428.10	-193.24	7,251.84	7,207.68	44.16	164.207			
12,800.00	6,075.77	5,450.00	5,429.20	209.26	20.21	14.67	428.10	-193.24	7,351.45	7,307.22	44.23	166.210			
12,900.00	6,076.04	5,450.00	5,429.20	212.25	20.21	14.67	428.10	-193.24	7,451.06	7,406.77	44.30	168.204			
13,000.00	6,076.31	5,450.00	5,429.20	215.24	20.21	14.67	428.10	-193.24	7,550.69	7,506.32	44.37	170.191			
13,100.00	6,076.57	5,450.00	5,429.20	218.24	20.21	14.67	428.10	-193.24	7,650.33	7,605.89	44.43	172.171			
13,200.00	6,076.84	5,450.00	5,429.20	221.23	20.21	14.67	428.10	-193.24	7,749.97	7,705.47	44.50	174.142			
13,300.00	6,077.10	5,450.00	5,429.20	224.23	20.21	14.67	428.10	-193.24	7,849.62	7,805.05	44.57	176.105			
13,400.00	6,077.37	5,450.00	5,429.20	227.22	20.21	14.67	428.10	-193.24	7,949.29	7,904.64	44.64	178.061			
13,500.00	6,077.64	5,426.64	5,406.05	230.22	20.12	14.34	426.09	-190.88	8,048.54	8,003.92	44.62	180.375			
13,600.00	6,077.90	5,425.97	5,405.39	233.21	20.11	14.33	426.03	-190.82	8,148.20	8,103.51	44.69	182.326			
13,636.27	6,078.00	5,425.74	5,405.15	234.30	20.11	14.33	426.01	-190.80	8,184.34	8,139.63	44.72	183.032			

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 603 2H - OH - Plan #2														Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	175.35	-28.76	2.34	28.85						
100.00	100.00	100.00	100.00	0.18	0.18	175.35	-28.76	2.34	28.85	28.49	0.36	80.486			
200.00	200.00	200.00	200.00	0.54	0.54	175.35	-28.76	2.34	28.85	27.78	1.08	26.829			
300.00	300.00	300.00	300.00	0.90	0.90	175.35	-28.76	2.34	28.85	27.06	1.79	16.097			
400.00	400.00	400.00	400.00	1.25	1.25	175.35	-28.76	2.34	28.85	26.34	2.51	11.498			
500.00	500.00	500.00	500.00	1.61	1.61	175.35	-28.76	2.34	28.85	25.63	3.23	8.943 CC, ES			
600.00	599.98	598.92	598.90	1.97	1.95	164.69	-30.43	2.01	32.20	28.25	3.95	8.160 SF			
700.00	699.84	697.13	696.97	2.33	2.28	168.16	-35.41	1.05	42.33	37.64	4.69	9.032			
800.00	799.45	793.94	793.42	2.70	2.62	171.28	-43.55	-0.53	59.31	53.87	5.44	10.905			
900.00	898.83	888.97	887.78	3.06	2.95	173.44	-54.64	-2.68	81.99	75.81	6.18	13.260			
1,000.00	998.21	984.41	982.19	3.43	3.31	174.80	-68.36	-5.34	107.49	100.62	6.87	15.645			
1,100.00	1,097.58	1,081.01	1,077.70	3.80	3.68	175.65	-82.52	-8.09	133.31	125.78	7.53	17.701			
1,200.00	1,196.96	1,177.60	1,173.21	4.18	4.05	176.23	-96.68	-10.83	159.15	150.94	8.21	19.394			
1,300.00	1,296.33	1,274.19	1,268.72	4.56	4.43	176.64	-110.84	-13.58	185.00	176.12	8.89	20.819			
1,400.00	1,395.71	1,370.78	1,364.23	4.94	4.82	176.96	-125.01	-16.32	210.86	201.29	9.57	22.031			
1,500.00	1,495.08	1,467.38	1,459.74	5.32	5.21	177.20	-139.17	-19.07	236.73	226.46	10.26	23.071			
1,600.00	1,594.46	1,563.97	1,555.25	5.70	5.60	177.40	-153.33	-21.82	262.59	251.64	10.95	23.973			
1,700.00	1,693.83	1,660.56	1,650.76	6.08	5.99	177.56	-167.49	-24.56	288.46	276.81	11.65	24.762			
1,800.00	1,793.21	1,757.16	1,746.27	6.46	6.38	177.70	-181.66	-27.31	314.33	301.99	12.35	25.457			
1,900.00	1,892.58	1,853.75	1,841.78	6.85	6.78	177.81	-195.82	-30.05	340.21	327.16	13.05	26.073			
2,000.00	1,991.96	1,950.34	1,937.29	7.23	7.18	177.91	-209.98	-32.80	366.08	352.33	13.75	26.624			
2,100.00	2,091.33	2,046.94	2,032.80	7.62	7.58	177.99	-224.14	-35.55	391.95	377.50	14.45	27.119			
2,200.00	2,190.71	2,143.53	2,128.31	8.00	7.97	178.07	-238.31	-38.29	417.83	402.67	15.16	27.565			
2,300.00	2,290.08	2,240.12	2,223.81	8.38	8.37	178.13	-252.47	-41.04	443.70	427.84	15.86	27.970			
2,400.00	2,389.46	2,336.71	2,319.32	8.77	8.77	178.19	-266.63	-43.79	469.58	453.01	16.57	28.339			
2,500.00	2,488.83	2,433.31	2,414.83	9.15	9.17	178.25	-280.79	-46.53	495.46	478.18	17.28	28.676			
2,600.00	2,588.20	2,529.90	2,510.34	9.54	9.57	178.29	-294.96	-49.28	521.33	503.35	17.99	28.985			
2,700.00	2,687.58	2,626.49	2,605.85	9.92	9.97	178.34	-309.12	-52.02	547.21	528.52	18.69	29.271			
2,800.00	2,786.95	2,723.09	2,701.36	10.31	10.38	178.38	-323.28	-54.77	573.09	553.69	19.40	29.534			
2,900.00	2,886.33	2,819.68	2,796.87	10.70	10.78	178.41	-337.44	-57.52	598.97	578.85	20.11	29.778			
3,000.00	2,985.70	2,916.27	2,892.38	11.08	11.18	178.44	-351.61	-60.26	624.85	604.02	20.82	30.005			
3,100.00	3,085.08	3,012.87	2,987.89	11.47	11.58	178.47	-365.77	-63.01	650.72	629.19	21.54	30.216			
3,200.00	3,184.45	3,109.46	3,083.40	11.85	11.98	178.50	-379.93	-65.75	676.60	654.36	22.25	30.414			
3,300.00	3,283.83	3,206.05	3,178.91	12.24	12.39	178.53	-394.09	-68.50	702.48	679.52	22.96	30.598			
3,400.00	3,383.20	3,302.64	3,274.42	12.62	12.79	178.55	-408.26	-71.25	728.36	704.69	23.67	30.771			
3,500.00	3,482.58	3,399.24	3,369.93	13.01	13.19	178.57	-422.42	-73.99	754.24	729.86	24.38	30.934			
3,600.00	3,581.95	3,495.83	3,465.44	13.40	13.60	178.59	-436.58	-76.74	780.12	755.02	25.09	31.087			
3,700.00	3,681.33	3,592.42	3,560.95	13.78	14.00	178.61	-450.74	-79.48	806.00	780.19	25.81	31.232			
3,800.00	3,780.70	3,689.02	3,656.46	14.17	14.40	178.63	-464.91	-82.23	831.88	805.36	26.52	31.368			
3,900.00	3,880.08	3,785.61	3,751.97	14.55	14.81	178.65	-479.07	-84.98	857.75	830.52	27.23	31.497			
4,000.00	3,979.45	3,882.20	3,847.48	14.94	15.21	178.67	-493.23	-87.72	883.63	855.69	27.95	31.619			
4,100.00	4,078.82	3,978.80	3,942.99	15.33	15.61	178.68	-507.39	-90.47	909.51	880.85	28.66	31.735			
4,200.00	4,178.20	4,075.39	4,038.50	15.71	16.02	178.69	-521.55	-93.21	935.39	906.02	29.37	31.845			
4,300.00	4,277.57	4,171.98	4,134.01	16.10	16.42	178.71	-535.72	-95.96	961.27	931.18	30.09	31.950			
4,400.00	4,376.95	4,268.58	4,229.52	16.49	16.83	178.72	-549.88	-98.71	987.15	956.35	30.80	32.050			
4,500.00	4,476.32	4,365.17	4,325.03	16.87	17.23	178.73	-564.04	-101.45	1,013.03	981.52	31.51	32.145			
4,600.00	4,575.70	4,461.76	4,420.54	17.26	17.63	178.75	-578.20	-104.20	1,038.91	1,006.68	32.23	32.236			
4,700.00	4,675.07	4,558.35	4,516.05	17.65	18.04	178.76	-592.37	-106.95	1,064.79	1,031.85	32.94	32.322			
4,800.00	4,774.45	4,654.95	4,611.56	18.03	18.44	178.77	-606.53	-109.69	1,090.67	1,057.01	33.66	32.405			
4,900.00	4,873.82	4,751.54	4,707.07	18.42	18.85	178.78	-620.69	-112.44	1,116.55	1,082.18	34.37	32.484			
5,000.00	4,973.20	4,848.13	4,802.58	18.80	19.25	178.79	-634.85	-115.18	1,142.43	1,107.34	35.09	32.560			
5,100.00	5,072.57	4,944.73	4,898.09	19.19	19.66	178.80	-649.02	-117.93	1,168.31	1,132.51	35.80*	32.633			

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 603 2H - OH - Plan #2												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,171.95	5,041.32	4,993.60	19.58	20.06	178.80	-663.18	-120.68	1,194.19	1,157.67	36.52	32.703	
5,300.00	5,271.32	5,137.91	5,089.10	19.96	20.47	178.81	-677.34	-123.42	1,220.07	1,182.84	37.23	32.770	
5,400.00	5,370.69	5,234.50	5,184.61	20.35	20.87	174.13	-691.50	-126.17	1,245.95	1,208.01	37.95	32.835	
5,500.00	5,469.49	5,330.31	5,279.34	20.74	21.27	131.64	-705.55	-128.89	1,273.22	1,234.56	38.66	32.936	
5,600.00	5,565.90	5,422.70	5,370.70	21.13	21.66	117.23	-719.10	-131.52	1,302.80	1,263.45	39.35	33.107	
5,700.00	5,658.06	5,484.31	5,431.47	21.53	21.92	110.02	-728.11	-135.92	1,335.65	1,295.84	39.81	33.547	
5,800.00	5,744.16	5,534.80	5,480.85	21.93	22.13	105.18	-735.43	-143.44	1,372.99	1,332.78	40.20	34.150	
5,900.00	5,822.53	5,573.57	5,518.33	22.38	22.30	100.95	-740.99	-151.60	1,415.10	1,374.56	40.54	34.905	
6,000.00	5,891.65	5,600.00	5,543.61	22.93	22.41	96.54	-744.74	-158.33	1,461.93	1,421.08	40.86	35.782	
6,100.00	5,950.17	5,618.22	5,560.89	23.68	22.48	91.77	-747.30	-163.52	1,513.00	1,471.77	41.23	36.693	
6,200.00	5,996.95	5,626.74	5,568.92	24.69	22.52	86.47	-748.49	-166.10	1,567.45	1,525.76	41.69	37.594	
6,300.00	6,031.08	5,627.97	5,570.08	25.98	22.53	80.82	-748.66	-166.48	1,624.17	1,581.89	42.28	38.418	
6,400.00	6,051.90	5,623.20	5,565.59	27.55	22.51	75.07	-748.00	-165.02	1,681.91	1,638.93	42.98	39.130	
6,500.00	6,059.00	5,600.00	5,543.61	29.33	22.41	69.02	-744.74	-158.33	1,739.54	1,695.89	43.65	39.854	
6,600.00	6,059.27	5,600.00	5,543.61	31.29	22.41	69.02	-744.74	-158.33	1,798.20	1,753.56	44.64	40.281	
6,700.00	6,059.53	5,600.00	5,543.61	33.41	22.41	69.02	-744.74	-158.33	1,860.38	1,814.75	45.64	40.766	
6,800.00	6,059.80	5,583.17	5,527.54	35.66	22.34	68.38	-742.36	-153.94	1,925.55	1,879.11	46.44	41.463	
6,900.00	6,060.07	5,574.89	5,519.59	38.01	22.30	68.07	-741.18	-151.91	1,993.54	1,946.24	47.30	42.146	
7,000.00	6,060.33	5,567.32	5,512.32	40.45	22.27	67.79	-740.10	-150.15	2,064.04	2,015.91	48.13	42.886	
7,100.00	6,060.60	5,550.00	5,495.59	42.97	22.20	67.14	-737.62	-146.40	2,136.90	2,088.09	48.82	43.774	
7,200.00	6,060.87	5,550.00	5,495.59	45.54	22.20	67.14	-737.62	-146.40	2,211.68	2,162.05	49.63	44.567	
7,300.00	6,061.13	5,550.00	5,495.59	48.17	22.20	67.14	-737.62	-146.40	2,288.38	2,237.99	50.39	45.418	
7,400.00	6,061.40	5,550.00	5,495.59	50.84	22.20	67.14	-737.62	-146.40	2,366.82	2,315.72	51.09	46.322	
7,500.00	6,061.66	5,550.00	5,495.59	53.55	22.20	67.14	-737.62	-146.40	2,446.83	2,395.07	51.76	47.275	
7,600.00	6,061.93	5,550.00	5,495.59	56.28	22.20	67.14	-737.62	-146.40	2,528.27	2,475.89	52.37	48.272	
7,700.00	6,062.20	5,528.55	5,474.76	59.05	22.11	66.33	-734.53	-142.32	2,610.64	2,557.88	52.76	49.481	
7,800.00	6,062.46	5,524.45	5,470.77	61.83	22.09	66.17	-733.94	-141.61	2,694.38	2,641.12	53.26	50.585	
7,900.00	6,062.73	5,520.61	5,467.02	64.64	22.07	66.03	-733.38	-140.97	2,779.18	2,725.45	53.74	51.719	
8,000.00	6,063.00	5,500.00	5,446.87	67.46	21.98	65.26	-730.39	-137.88	2,865.17	2,811.14	54.02	53.034	
8,100.00	6,063.26	5,500.00	5,446.87	70.30	21.98	65.26	-730.39	-137.88	2,951.72	2,897.25	54.47	54.191	
8,200.00	6,063.53	5,500.00	5,446.87	73.16	21.98	65.26	-730.39	-137.88	3,039.10	2,984.22	54.88	55.373	
8,300.00	6,063.79	5,500.00	5,446.87	76.02	21.98	65.26	-730.39	-137.88	3,127.24	3,071.97	55.27	56.578	
8,400.00	6,064.06	5,500.00	5,446.87	78.90	21.98	65.26	-730.39	-137.88	3,216.07	3,160.43	55.64	57.804	
8,500.00	6,064.33	5,500.00	5,446.87	81.79	21.98	65.26	-730.39	-137.88	3,305.54	3,249.56	55.98	59.048	
8,600.00	6,064.59	5,500.00	5,446.87	84.68	21.98	65.26	-730.39	-137.88	3,395.60	3,339.29	56.30	60.309	
8,700.00	6,064.86	5,500.00	5,446.87	87.59	21.98	65.26	-730.39	-137.88	3,486.19	3,429.59	56.61	61.586	
8,800.00	6,065.13	5,500.00	5,446.87	90.50	21.98	65.26	-730.39	-137.88	3,577.29	3,520.40	56.89	62.878	
8,900.00	6,065.39	5,500.00	5,446.87	93.41	21.98	65.26	-730.39	-137.88	3,668.86	3,611.69	57.16	64.182	
9,000.00	6,065.66	5,500.00	5,446.87	96.33	21.98	65.26	-730.39	-137.88	3,760.85	3,703.43	57.42	65.498	
9,100.00	6,065.92	5,500.00	5,446.87	99.26	21.98	65.26	-730.39	-137.88	3,853.24	3,795.58	57.66	66.824	
9,200.00	6,066.19	5,500.00	5,446.87	102.20	21.98	65.26	-730.39	-137.88	3,946.00	3,888.11	57.89	68.161	
9,300.00	6,066.46	5,500.00	5,446.87	105.13	21.98	65.26	-730.39	-137.88	4,039.11	3,981.00	58.11	69.506	
9,400.00	6,066.72	5,500.00	5,446.87	108.07	21.98	65.26	-730.39	-137.88	4,132.54	4,074.22	58.32	70.860	
9,500.00	6,066.99	5,500.00	5,446.87	111.02	21.98	65.26	-730.39	-137.88	4,226.27	4,167.75	58.52	72.221	
9,600.00	6,067.25	5,500.00	5,446.87	113.97	21.98	65.26	-730.39	-137.88	4,320.29	4,261.58	58.71	73.589	
9,700.00	6,067.52	5,478.04	5,425.31	116.92	21.89	64.44	-727.19	-135.23	4,414.19	4,355.47	58.71	75.182	
9,800.00	6,067.79	5,476.57	5,423.86	119.87	21.89	64.38	-726.98	-135.07	4,508.66	4,449.78	58.88	76.579	
9,900.00	6,068.05	5,475.15	5,422.46	122.83	21.88	64.33	-726.77	-134.93	4,603.36	4,544.33	59.03	77.981	
10,000.00	6,068.32	5,473.79	5,421.12	125.79	21.87	64.28	-726.57	-134.79	4,698.28	4,639.09	59.18	79.387	
10,100.00	6,068.59	5,472.48	5,419.83	128.75	21.87	64.23	-726.38	-134.66	4,793.40	4,734.07	59.33	80.798	
10,200.00	6,068.85	5,450.00	5,397.67	131.71	21.77	63.40	-723.10	-132.81	4,889.06	4,829.77	59.29	82.457	
10,300.00	6,069.12	5,450.00	5,397.67	134.68	21.77	63.40	-723.10	-132.81	4,984.52	4,925.08	59.44	83.864	

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
10,400.00	6,069.38	5,450.00	5,397.67	137.65	21.77	63.40	-723.10	-132.81	5,080.15	5,020.57	59.58	85.273	
10,500.00	6,069.65	5,450.00	5,397.67	140.62	21.77	63.40	-723.10	-132.81	5,175.94	5,116.23	59.71	86.686	
10,600.00	6,069.92	5,450.00	5,397.67	143.59	21.77	63.40	-723.10	-132.81	5,271.89	5,212.06	59.84	88.101	
10,700.00	6,070.18	5,450.00	5,397.67	146.56	21.77	63.40	-723.10	-132.81	5,367.99	5,308.03	59.97	89.518	
10,800.00	6,070.45	5,450.00	5,397.67	149.54	21.77	63.40	-723.10	-132.81	5,464.23	5,404.15	60.09	90.938	
10,900.00	6,070.72	5,450.00	5,397.67	152.52	21.77	63.40	-723.10	-132.81	5,560.61	5,500.40	60.21	92.360	
11,000.00	6,070.98	5,450.00	5,397.67	155.49	21.77	63.40	-723.10	-132.81	5,657.11	5,596.79	60.32	93.784	
11,100.00	6,071.25	5,450.00	5,397.67	158.47	21.77	63.40	-723.10	-132.81	5,753.72	5,693.29	60.43	95.209	
11,200.00	6,071.51	5,450.00	5,397.67	161.45	21.77	63.40	-723.10	-132.81	5,850.46	5,789.91	60.54	96.635	
11,300.00	6,071.78	5,450.00	5,397.67	164.43	21.77	63.40	-723.10	-132.81	5,947.30	5,886.65	60.65	98.062	
11,400.00	6,072.05	5,450.00	5,397.67	167.42	21.77	63.40	-723.10	-132.81	6,044.24	5,983.49	60.75	99.490	
11,500.00	6,072.31	5,450.00	5,397.67	170.40	21.77	63.40	-723.10	-132.81	6,141.28	6,080.43	60.85	100.919	
11,600.00	6,072.58	5,450.00	5,397.67	173.38	21.77	63.40	-723.10	-132.81	6,238.41	6,177.46	60.95	102.349	
11,700.00	6,072.85	5,450.00	5,397.67	176.37	21.77	63.40	-723.10	-132.81	6,335.64	6,274.59	61.05	103.778	
11,800.00	6,073.11	5,450.00	5,397.67	179.36	21.77	63.40	-723.10	-132.81	6,432.95	6,371.80	61.14	105.208	
11,900.00	6,073.38	5,450.00	5,397.67	182.34	21.77	63.40	-723.10	-132.81	6,530.34	6,469.10	61.24	106.639	
12,000.00	6,073.64	5,450.00	5,397.67	185.33	21.77	63.40	-723.10	-132.81	6,627.80	6,566.47	61.33	108.069	
12,100.00	6,073.91	5,450.00	5,397.67	188.32	21.77	63.40	-723.10	-132.81	6,725.35	6,663.93	61.42	109.499	
12,200.00	6,074.18	5,450.00	5,397.67	191.31	21.77	63.40	-723.10	-132.81	6,822.96	6,761.45	61.51	110.928	
12,300.00	6,074.44	5,450.00	5,397.67	194.30	21.77	63.40	-723.10	-132.81	6,920.64	6,859.05	61.59	112.357	
12,400.00	6,074.71	5,450.00	5,397.67	197.29	21.77	63.40	-723.10	-132.81	7,018.39	6,956.71	61.68	113.786	
12,500.00	6,074.98	5,450.00	5,397.67	200.28	21.77	63.40	-723.10	-132.81	7,116.20	7,054.43	61.76	115.214	
12,600.00	6,075.24	5,450.00	5,397.67	203.27	21.77	63.40	-723.10	-132.81	7,214.07	7,152.22	61.85	116.642	
12,700.00	6,075.51	5,450.00	5,397.67	206.26	21.77	63.40	-723.10	-132.81	7,311.99	7,250.06	61.93	118.068	
12,800.00	6,075.77	5,450.00	5,397.67	209.26	21.77	63.40	-723.10	-132.81	7,409.98	7,347.96	62.01	119.494	
12,900.00	6,076.04	5,450.00	5,397.67	212.25	21.77	63.40	-723.10	-132.81	7,508.01	7,445.92	62.09	120.919	
13,000.00	6,076.31	5,450.00	5,397.67	215.24	21.77	63.40	-723.10	-132.81	7,606.10	7,543.93	62.17	122.343	
13,100.00	6,076.57	5,450.00	5,397.67	218.24	21.77	63.40	-723.10	-132.81	7,704.23	7,641.98	62.25	123.765	
13,200.00	6,076.84	5,450.00	5,397.67	221.23	21.77	63.40	-723.10	-132.81	7,802.42	7,740.09	62.33	125.186	
13,300.00	6,077.10	5,450.00	5,397.67	224.23	21.77	63.40	-723.10	-132.81	7,900.65	7,838.24	62.40	126.606	
13,400.00	6,077.37	5,450.00	5,397.67	227.22	21.77	63.40	-723.10	-132.81	7,998.92	7,936.44	62.48	128.025	
13,500.00	6,077.64	5,450.00	5,397.67	230.22	21.77	63.40	-723.10	-132.81	8,097.23	8,034.68	62.55	129.442	
13,600.00	6,077.90	5,450.00	5,397.67	233.21	21.77	63.40	-723.10	-132.81	8,195.59	8,132.96	62.63	130.858	
13,636.27	6,078.00	5,450.00	5,397.67	234.30	21.77	63.40	-723.10	-132.81	8,231.27	8,168.61	62.66	131.371	



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 603 3H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-35.70	20.39	-14.65	25.11					
100.00	100.00	100.00	100.00	0.18	0.18	-35.70	20.39	-14.65	25.11	24.75	0.36	70.040		
200.00	200.00	200.00	200.00	0.54	0.54	-35.70	20.39	-14.65	25.11	24.03	1.08	23.347		
300.00	300.00	300.00	300.00	0.90	0.90	-35.70	20.39	-14.65	25.11	23.31	1.79	14.008		
400.00	400.00	400.00	400.00	1.25	1.25	-35.70	20.39	-14.65	25.11	22.60	2.51	10.006		
500.00	500.00	500.00	500.00	1.61	1.61	-35.70	20.39	-14.65	25.11	21.88	3.23	7.782 CC		
600.00	599.98	599.22	599.21	1.97	1.97	-49.16	22.09	-14.89	25.48	21.52	3.96	6.440 ES		
700.00	699.84	698.43	698.27	2.33	2.33	-52.29	27.19	-15.63	26.66	21.95	4.70	5.667		
800.00	799.45	797.59	797.05	2.70	2.69	-56.89	35.67	-16.85	28.78	23.32	5.45	5.277		
900.00	898.83	896.67	895.41	3.06	3.05	-60.59	47.53	-18.56	32.53	26.33	6.20	5.243 SF		
1,000.00	998.21	995.53	993.06	3.43	3.42	-60.17	62.70	-20.74	38.94	31.97	6.97	5.585		
1,100.00	1,097.58	1,093.92	1,089.67	3.80	3.81	-57.28	81.11	-23.39	48.06	40.31	7.75	6.200		
1,200.00	1,196.96	1,191.62	1,184.92	4.18	4.21	-53.48	102.62	-26.49	60.08	51.55	8.53	7.040		
1,300.00	1,296.33	1,288.41	1,278.50	4.56	4.64	-49.67	127.09	-30.01	75.20	65.89	9.31	8.078		
1,400.00	1,395.71	1,384.09	1,370.12	4.94	5.08	-46.25	154.35	-33.94	93.50	83.44	10.07	9.287		
1,500.00	1,495.08	1,481.22	1,462.48	5.32	5.55	-43.44	184.12	-38.22	114.10	103.31	10.79	10.573		
1,600.00	1,594.46	1,578.93	1,555.37	5.70	6.03	-41.47	214.13	-42.54	134.95	123.44	11.51	11.723		
1,700.00	1,693.83	1,676.65	1,648.26	6.08	6.53	-40.03	244.14	-46.86	155.91	143.68	12.24	12.742		
1,800.00	1,793.21	1,774.36	1,741.15	6.46	7.03	-38.92	274.15	-51.19	176.94	163.98	12.97	13.647		
1,900.00	1,892.58	1,872.07	1,834.04	6.85	7.54	-38.06	304.17	-55.51	198.03	184.33	13.70	14.454		
2,000.00	1,991.96	1,969.79	1,926.93	7.23	8.06	-37.36	334.18	-59.83	219.14	204.71	14.44	15.177		
2,100.00	2,091.33	2,067.50	2,019.82	7.62	8.58	-36.78	364.19	-64.15	240.29	225.11	15.18	15.828		
2,200.00	2,190.71	2,165.21	2,112.71	8.00	9.10	-36.30	394.21	-68.47	261.45	245.52	15.93	16.416		
2,300.00	2,290.08	2,262.93	2,205.60	8.38	9.62	-35.89	424.22	-72.79	282.63	265.95	16.68	16.949		
2,400.00	2,389.46	2,360.64	2,298.48	8.77	10.15	-35.53	454.23	-77.11	303.82	286.39	17.43	17.434		
2,500.00	2,488.83	2,458.35	2,391.37	9.15	10.68	-35.22	484.24	-81.43	325.02	306.84	18.18	17.877		
2,600.00	2,588.20	2,556.07	2,484.26	9.54	11.21	-34.95	514.26	-85.75	346.22	327.29	18.94	18.284		
2,700.00	2,687.58	2,653.78	2,577.15	9.92	11.74	-34.71	544.27	-90.08	367.44	347.74	19.69	18.658		
2,800.00	2,786.95	2,751.49	2,670.04	10.31	12.27	-34.50	574.28	-94.40	388.66	368.20	20.45	19.002		
2,900.00	2,886.33	2,849.21	2,762.93	10.70	12.81	-34.31	604.30	-98.72	409.88	388.67	21.21	19.321		
3,000.00	2,985.70	2,946.92	2,855.82	11.08	13.34	-34.14	634.31	-103.04	431.11	409.13	21.98	19.617		
3,100.00	3,085.08	3,044.63	2,948.71	11.47	13.88	-33.98	664.32	-107.36	452.34	429.60	22.74	19.893		
3,200.00	3,184.45	3,142.35	3,041.60	11.85	14.42	-33.84	694.33	-111.68	473.57	450.07	23.50	20.149		
3,300.00	3,283.83	3,240.06	3,134.49	12.24	14.95	-33.71	724.35	-116.00	494.81	470.54	24.27	20.389		
3,400.00	3,383.20	3,337.77	3,227.38	12.62	15.49	-33.59	754.36	-120.32	516.05	491.01	25.04	20.613		
3,500.00	3,482.58	3,435.48	3,320.27	13.01	16.03	-33.48	784.37	-124.64	537.29	511.49	25.80	20.823		
3,600.00	3,581.95	3,533.20	3,413.16	13.40	16.57	-33.38	814.39	-128.97	558.53	531.96	26.57	21.021		
3,700.00	3,681.33	3,630.91	3,506.05	13.78	17.11	-33.29	844.40	-133.29	579.78	552.44	27.34	21.207		
3,800.00	3,780.70	3,728.62	3,598.94	14.17	17.65	-33.20	874.41	-137.61	601.02	572.91	28.11	21.383		
3,900.00	3,880.08	3,826.34	3,691.82	14.55	18.19	-33.12	904.42	-141.93	622.27	593.39	28.88	21.548		
4,000.00	3,979.45	3,924.05	3,784.71	14.94	18.73	-33.04	934.44	-146.25	643.51	613.87	29.65	21.705		
4,100.00	4,078.82	4,021.76	3,877.60	15.33	19.27	-32.97	964.45	-150.57	664.76	634.34	30.42	21.854		
4,200.00	4,178.20	4,119.48	3,970.49	15.71	19.82	-32.90	994.46	-154.89	686.01	654.82	31.19	21.994		
4,300.00	4,277.57	4,217.19	4,063.38	16.10	20.36	-32.84	1,024.48	-159.21	707.26	675.30	31.96	22.128		
4,400.00	4,376.95	4,314.90	4,156.27	16.49	20.90	-32.78	1,054.49	-163.53	728.51	695.78	32.73	22.255		
4,500.00	4,476.32	4,412.62	4,249.16	16.87	21.44	-32.73	1,084.50	-167.86	749.77	716.26	33.51	22.377		
4,600.00	4,575.70	4,510.33	4,342.05	17.26	21.98	-32.67	1,114.51	-172.18	771.02	736.74	34.28	22.492		
4,700.00	4,675.07	4,608.04	4,434.94	17.65	22.53	-32.63	1,144.53	-176.50	792.27	757.22	35.05	22.602		
4,800.00	4,774.45	4,705.76	4,527.83	18.03	23.07	-32.58	1,174.54	-180.82	813.53	777.70	35.83	22.707		
4,900.00	4,873.82	4,803.47	4,620.72	18.42	23.61	-32.53	1,204.55	-185.14	834.78	798.18	36.60	22.808		
5,000.00	4,973.20	4,901.18	4,713.61	18.80	24.16	-32.49	1,234.56	-189.46	856.03	818.66	37.37	22.904		
5,100.00	5,072.57	4,998.90	4,806.50	19.19	24.70	-32.45	1,264.58	-193.78	877.29	839.14	38.15	22.997		

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 603 3H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,171.95	5,096.61	4,899.39	19.58	25.24	-32.41	1,294.59	-198.10	898.54	859.62	38.92	23.085		
5,300.00	5,271.32	5,194.32	4,992.27	19.96	25.79	-32.37	1,324.60	-202.42	919.80	880.10	39.70	23.170		
5,400.00	5,370.69	5,292.03	5,085.16	20.35	26.33	-36.78	1,354.62	-206.75	941.07	900.59	40.47	23.251		
5,500.00	5,469.49	5,388.83	5,177.18	20.74	26.87	-75.97	1,384.35	-211.03	964.91	923.63	41.28	23.373		
5,600.00	5,565.90	5,482.67	5,266.39	21.13	27.39	-87.78	1,413.17	-215.18	993.25	951.11	42.14	23.568		
5,700.00	5,658.06	5,571.73	5,351.05	21.53	27.89	-92.41	1,440.52	-219.11	1,026.24	983.18	43.06	23.830		
5,800.00	5,744.16	5,645.19	5,420.88	21.93	28.30	-94.15	1,463.09	-222.50	1,064.35	1,020.38	43.97	24.207		
5,900.00	5,822.53	5,687.41	5,460.87	22.38	28.54	-93.52	1,476.00	-226.45	1,109.50	1,064.78	44.72	24.812		
6,000.00	5,891.65	5,719.25	5,490.85	22.93	28.72	-91.23	1,485.69	-231.06	1,162.03	1,116.51	45.52	25.526		
6,100.00	5,950.17	5,750.00	5,519.59	23.68	28.90	-87.78	1,494.97	-236.84	1,221.25	1,174.73	46.52	26.253		
6,200.00	5,996.95	5,750.00	5,519.59	24.69	28.90	-81.55	1,494.97	-236.84	1,285.77	1,238.46	47.31	27.178		
6,300.00	6,031.08	5,750.00	5,519.59	25.98	28.90	-74.39	1,494.97	-236.84	1,354.32	1,306.06	48.26	28.063		
6,400.00	6,051.90	5,750.00	5,519.59	27.55	28.90	-66.78	1,494.97	-236.84	1,425.08	1,375.74	49.34	28.882		
6,500.00	6,059.00	5,750.00	5,519.59	29.33	28.90	-59.27	1,494.97	-236.84	1,496.46	1,445.96	50.50	29.632		
6,600.00	6,059.27	5,750.00	5,519.59	31.29	28.90	-59.27	1,494.97	-236.84	1,569.28	1,517.63	51.65	30.385		
6,700.00	6,059.53	5,750.00	5,519.59	33.41	28.90	-59.27	1,494.97	-236.84	1,644.95	1,592.24	52.71	31.209		
6,800.00	6,059.80	5,731.72	5,502.54	35.66	28.79	-58.32	1,489.46	-233.25	1,722.82	1,669.38	53.44	32.236		
6,900.00	6,060.07	5,725.81	5,497.00	38.01	28.76	-58.01	1,487.67	-232.18	1,802.92	1,748.66	54.26	33.225		
7,000.00	6,060.33	5,720.41	5,491.94	40.45	28.73	-57.73	1,486.04	-231.25	1,884.88	1,829.86	55.01	34.262		
7,100.00	6,060.60	5,700.00	5,472.75	42.97	28.61	-56.68	1,479.84	-228.10	1,968.66	1,913.16	55.50	35.473		
7,200.00	6,060.87	5,700.00	5,472.75	45.54	28.61	-56.68	1,479.84	-228.10	2,053.56	1,997.38	56.18	36.551		
7,300.00	6,061.13	5,700.00	5,472.75	48.17	28.61	-56.68	1,479.84	-228.10	2,139.77	2,082.97	56.81	37.667		
7,400.00	6,061.40	5,700.00	5,472.75	50.84	28.61	-56.68	1,479.84	-228.10	2,227.14	2,169.76	57.38	38.816		
7,500.00	6,061.66	5,700.00	5,472.75	53.55	28.61	-56.68	1,479.84	-228.10	2,315.52	2,257.63	57.90	39.993		
7,600.00	6,061.93	5,700.00	5,472.75	56.28	28.61	-56.68	1,479.84	-228.10	2,404.82	2,346.44	58.38	41.195		
7,700.00	6,062.20	5,700.00	5,472.75	59.05	28.61	-56.68	1,479.84	-228.10	2,494.93	2,436.12	58.81	42.420		
7,800.00	6,062.46	5,700.00	5,472.75	61.83	28.61	-56.68	1,479.84	-228.10	2,585.77	2,526.55	59.22	43.665		
7,900.00	6,062.73	5,700.00	5,472.75	64.64	28.61	-56.68	1,479.84	-228.10	2,677.26	2,617.67	59.59	44.928		
8,000.00	6,063.00	5,700.00	5,472.75	67.46	28.61	-56.68	1,479.84	-228.10	2,769.33	2,709.40	59.93	46.206		
8,100.00	6,063.26	5,700.00	5,472.75	70.30	28.61	-56.68	1,479.84	-228.10	2,861.94	2,801.69	60.25	47.498		
8,200.00	6,063.53	5,679.50	5,453.39	73.16	28.49	-55.63	1,473.59	-225.52	2,954.69	2,894.39	60.30	48.999		
8,300.00	6,063.79	5,677.31	5,451.33	76.02	28.48	-55.52	1,472.92	-225.28	3,048.14	2,987.59	60.55	50.340		
8,400.00	6,064.06	5,675.25	5,449.37	78.90	28.47	-55.41	1,472.29	-225.06	3,141.99	3,081.21	60.79	51.690		
8,500.00	6,064.33	5,673.29	5,447.52	81.79	28.46	-55.31	1,471.69	-224.85	3,236.20	3,175.20	61.00	53.049		
8,600.00	6,064.59	5,671.43	5,445.77	84.68	28.45	-55.22	1,471.13	-224.67	3,330.74	3,269.54	61.21	54.416		
8,700.00	6,064.86	5,650.00	5,425.44	87.59	28.32	-54.13	1,464.56	-222.83	3,425.91	3,364.75	61.16	56.017		
8,800.00	6,065.13	5,650.00	5,425.44	90.50	28.32	-54.13	1,464.56	-222.83	3,520.98	3,459.62	61.36	57.381		
8,900.00	6,065.39	5,650.00	5,425.44	93.41	28.32	-54.13	1,464.56	-222.83	3,616.32	3,554.77	61.55	58.752		
9,000.00	6,065.66	5,650.00	5,425.44	96.33	28.32	-54.13	1,464.56	-222.83	3,711.91	3,650.18	61.73	60.128		
9,100.00	6,065.92	5,650.00	5,425.44	99.26	28.32	-54.13	1,464.56	-222.83	3,807.72	3,745.82	61.91	61.509		
9,200.00	6,066.19	5,650.00	5,425.44	102.20	28.32	-54.13	1,464.56	-222.83	3,903.75	3,841.68	62.07	62.894		
9,300.00	6,066.46	5,650.00	5,425.44	105.13	28.32	-54.13	1,464.56	-222.83	3,999.96	3,937.74	62.22	64.284		
9,400.00	6,066.72	5,650.00	5,425.44	108.07	28.32	-54.13	1,464.56	-222.83	4,096.36	4,033.99	62.37	65.677		
9,500.00	6,066.99	5,650.00	5,425.44	111.02	28.32	-54.13	1,464.56	-222.83	4,192.93	4,130.42	62.51	67.073		
9,600.00	6,067.25	5,650.00	5,425.44	113.97	28.32	-54.13	1,464.56	-222.83	4,289.66	4,227.01	62.65	68.472		
9,700.00	6,067.52	5,650.00	5,425.44	116.92	28.32	-54.13	1,464.56	-222.83	4,386.53	4,323.75	62.78	69.873		
9,800.00	6,067.79	5,650.00	5,425.44	119.87	28.32	-54.13	1,464.56	-222.83	4,483.54	4,420.64	62.90	71.276		
9,900.00	6,068.05	5,650.00	5,425.44	122.83	28.32	-54.13	1,464.56	-222.83	4,580.68	4,517.65	63.02	72.681		
10,000.00	6,068.32	5,650.00	5,425.44	125.79	28.32	-54.13	1,464.56	-222.83	4,677.94	4,614.80	63.14	74.088		
10,100.00	6,068.59	5,650.00	5,425.44	128.75	28.32	-54.13	1,464.56	-222.83	4,775.31	4,712.06	63.25	75.497		
10,200.00	6,068.85	5,650.00	5,425.44	131.71	28.32	-54.13	1,464.56	-222.83	4,872.79	4,809.43	63.36	76.906		
10,300.00	6,069.12	5,650.00	5,425.44	134.68	28.32	-54.13	1,464.56	-222.83	4,970.37	4,906.90	63.47	78.316		

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

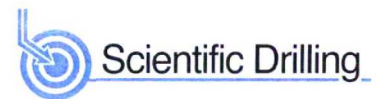
Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 603 3H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,400.00	6,069.38	5,650.00	5,425.44	137.65	28.32	-54.13	1,464.56	-222.83	5,068.04	5,004.47	63.57	79.727		
10,500.00	6,069.65	5,650.00	5,425.44	140.62	28.32	-54.13	1,464.56	-222.83	5,165.80	5,102.13	63.67	81.139		
10,600.00	6,069.92	5,650.00	5,425.44	143.59	28.32	-54.13	1,464.56	-222.83	5,263.65	5,199.88	63.76	82.551		
10,700.00	6,070.18	5,650.00	5,425.44	146.56	28.32	-54.13	1,464.56	-222.83	5,361.57	5,297.72	63.86	83.964		
10,800.00	6,070.45	5,650.00	5,425.44	149.54	28.32	-54.13	1,464.56	-222.83	5,459.57	5,395.63	63.95	85.376		
10,900.00	6,070.72	5,650.00	5,425.44	152.52	28.32	-54.13	1,464.56	-222.83	5,557.65	5,493.61	64.04	86.788		
11,000.00	6,070.98	5,650.00	5,425.44	155.49	28.32	-54.13	1,464.56	-222.83	5,655.79	5,591.66	64.12	88.201		
11,100.00	6,071.25	5,650.00	5,425.44	158.47	28.32	-54.13	1,464.56	-222.83	5,753.99	5,689.78	64.21	89.613		
11,200.00	6,071.51	5,650.00	5,425.44	161.45	28.32	-54.13	1,464.56	-222.83	5,852.25	5,787.96	64.29	91.024		
11,300.00	6,071.78	5,650.00	5,425.44	164.43	28.32	-54.13	1,464.56	-222.83	5,950.58	5,886.20	64.38	92.435		
11,400.00	6,072.05	5,650.00	5,425.44	167.42	28.32	-54.13	1,464.56	-222.83	6,048.95	5,984.50	64.46	93.846		
11,500.00	6,072.31	5,641.36	5,417.24	170.40	28.28	-53.69	1,461.91	-222.27	6,147.33	6,082.89	64.43	95.409		
11,600.00	6,072.58	5,640.78	5,416.69	173.38	28.27	-53.66	1,461.73	-222.24	6,245.80	6,181.29	64.50	96.830		
11,700.00	6,072.85	5,640.21	5,416.15	176.37	28.27	-53.63	1,461.56	-222.20	6,344.32	6,279.74	64.57	98.251		
11,800.00	6,073.11	5,639.66	5,415.62	179.36	28.27	-53.61	1,461.39	-222.17	6,442.88	6,378.24	64.64	99.670		
11,900.00	6,073.38	5,639.95	5,407.35	182.34	28.22	-53.17	1,458.71	-221.73	6,541.54	6,476.93	64.61	101.244		
12,000.00	6,073.64	5,630.95	5,407.35	185.33	28.22	-53.17	1,458.71	-221.73	6,640.18	6,575.49	64.69	102.653		
12,100.00	6,073.91	5,630.95	5,407.35	188.32	28.22	-53.17	1,458.71	-221.73	6,738.86	6,674.10	64.76	104.060		
12,200.00	6,074.18	5,630.95	5,407.35	191.31	28.22	-53.17	1,458.71	-221.73	6,837.58	6,772.75	64.83	105.467		
12,300.00	6,074.44	5,630.95	5,407.35	194.30	28.22	-53.17	1,458.71	-221.73	6,936.34	6,871.44	64.90	106.872		
12,400.00	6,074.71	5,630.95	5,407.35	197.29	28.22	-53.17	1,458.71	-221.73	7,035.13	6,970.16	64.97	108.275		
12,500.00	6,074.98	5,630.95	5,407.35	200.28	28.22	-53.17	1,458.71	-221.73	7,133.96	7,068.91	65.05	109.677		
12,600.00	6,075.24	5,630.95	5,407.35	203.27	28.22	-53.17	1,458.71	-221.73	7,232.82	7,167.70	65.12	111.078		
12,700.00	6,075.51	5,630.95	5,407.35	206.26	28.22	-53.17	1,458.71	-221.73	7,331.71	7,266.52	65.18	112.476		
12,800.00	6,075.77	5,630.95	5,407.35	209.26	28.22	-53.17	1,458.71	-221.73	7,430.62	7,365.37	65.25	113.873		
12,900.00	6,076.04	5,630.95	5,407.35	212.25	28.22	-53.17	1,458.71	-221.73	7,529.57	7,464.25	65.32	115.269		
13,000.00	6,076.31	5,630.95	5,407.35	215.24	28.22	-53.17	1,458.71	-221.73	7,628.55	7,563.16	65.39	116.662		
13,100.00	6,076.57	5,630.95	5,407.35	218.24	28.22	-53.17	1,458.71	-221.73	7,727.55	7,662.09	65.46	118.054		
13,200.00	6,076.84	5,630.95	5,407.35	221.23	28.22	-53.17	1,458.71	-221.73	7,826.57	7,761.05	65.53	119.443		
13,300.00	6,077.10	5,630.95	5,407.35	224.23	28.22	-53.17	1,458.71	-221.73	7,925.63	7,860.03	65.59	120.831		
13,400.00	6,077.37	5,630.95	5,407.35	227.22	28.22	-53.17	1,458.71	-221.73	8,024.70	7,959.04	65.66	122.217		
13,500.00	6,077.64	5,630.95	5,407.35	230.22	28.22	-53.17	1,458.71	-221.73	8,123.80	8,058.07	65.73	123.600		
13,600.00	6,077.90	5,630.95	5,407.35	233.21	28.22	-53.17	1,458.71	-221.73	8,222.92	8,157.12	65.79	124.982		
13,636.27	6,078.00	5,630.95	5,407.35	234.30	28.22	-53.17	1,458.71	-221.73	8,258.87	8,193.05	65.82	125.482		



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	160.94	-49.14	16.98	52.00					
100.00	100.00	100.00	100.00	0.18	0.18	160.94	-49.14	16.98	52.00	51.64	0.36	145.049		
200.00	200.00	200.00	200.00	0.54	0.54	160.94	-49.14	16.98	52.00	50.92	1.08	48.350		
300.00	300.00	300.00	300.00	0.90	0.90	160.94	-49.14	16.98	52.00	50.20	1.79	29.010		
400.00	400.00	400.00	400.00	1.25	1.25	160.94	-49.14	16.98	52.00	49.49	2.51	20.721		
500.00	500.00	500.00	500.00	1.61	1.61	160.94	-49.14	16.98	52.00	48.77	3.23	16.117 CC, ES		
600.00	599.98	598.28	598.26	1.97	1.95	150.25	-50.82	16.77	55.05	51.11	3.94	13.970		
700.00	699.84	695.86	695.71	2.33	2.28	154.30	-55.78	16.15	64.43	59.75	4.67	13.784 SF		
800.00	799.45	792.07	791.56	2.70	2.61	158.87	-63.90	15.13	80.49	75.07	5.42	14.843		
900.00	898.83	886.52	885.35	3.06	2.94	162.76	-74.98	13.74	102.35	96.18	6.17	16.597		
1,000.00	998.21	979.42	977.18	3.43	3.29	165.53	-88.85	11.99	127.73	120.83	6.89	18.532		
1,100.00	1,097.58	1,070.63	1,066.86	3.80	3.65	167.51	-105.34	9.92	156.37	148.77	7.60	20.579		
1,200.00	1,196.96	1,160.01	1,154.18	4.18	4.01	168.96	-124.24	7.54	188.14	179.84	8.29	22.687		
1,300.00	1,296.33	1,247.45	1,239.00	4.56	4.39	170.05	-145.34	4.89	222.89	213.92	8.97	24.860		
1,400.00	1,395.71	1,332.85	1,321.17	4.94	4.78	170.89	-168.42	1.99	260.50	250.88	9.62	27.084		
1,500.00	1,495.08	1,416.14	1,400.61	5.32	5.19	171.54	-193.25	-1.14	300.87	290.62	10.25	29.355		
1,600.00	1,594.46	1,500.00	1,479.82	5.70	5.61	172.06	-220.56	-4.57	343.88	333.01	10.87	31.649		
1,700.00	1,693.83	1,576.18	1,551.05	6.08	6.03	172.46	-247.35	-7.94	389.39	377.94	11.45	34.016		
1,800.00	1,793.21	1,659.33	1,628.10	6.46	6.50	172.81	-278.35	-11.84	436.96	424.92	12.05	36.276		
1,900.00	1,892.58	1,747.13	1,709.39	6.85	7.01	173.12	-311.28	-15.98	484.78	472.11	12.67	38.251		
2,000.00	1,991.96	1,834.93	1,790.67	7.23	7.52	173.37	-344.20	-20.12	532.61	519.30	13.31	40.012		
2,100.00	2,091.33	1,922.73	1,871.96	7.62	8.05	173.58	-377.13	-24.26	580.44	566.48	13.96	41.589		
2,200.00	2,190.71	2,010.53	1,953.25	8.00	8.58	173.75	-410.06	-28.40	628.28	613.67	14.61	43.006		
2,300.00	2,290.08	2,098.33	2,034.53	8.38	9.11	173.91	-442.98	-32.54	676.12	660.85	15.27	44.285		
2,400.00	2,389.46	2,186.13	2,115.82	8.77	9.65	174.04	-475.91	-36.68	723.97	708.04	15.93	45.443		
2,500.00	2,488.83	2,273.92	2,197.11	9.15	10.20	174.15	-508.84	-40.82	771.82	755.22	16.60	46.496		
2,600.00	2,588.20	2,361.72	2,278.39	9.54	10.74	174.26	-541.76	-44.96	819.67	802.40	17.27	47.456		
2,700.00	2,687.58	2,449.52	2,359.68	9.92	11.29	174.35	-574.69	-49.10	867.52	849.57	17.95	48.335		
2,800.00	2,786.95	2,537.32	2,440.96	10.31	11.84	174.43	-607.62	-53.24	915.37	896.75	18.63	49.141		
2,900.00	2,886.33	2,625.12	2,522.25	10.70	12.39	174.50	-640.55	-57.38	963.23	943.92	19.31	49.884		
3,000.00	2,985.70	2,712.92	2,603.54	11.08	12.95	174.57	-673.47	-61.52	1,011.09	991.09	19.99	50.569		
3,100.00	3,085.08	2,800.72	2,684.82	11.47	13.50	174.63	-706.40	-65.66	1,058.94	1,038.26	20.68	51.203		
3,200.00	3,184.45	2,888.52	2,766.11	11.85	14.06	174.68	-739.33	-69.80	1,106.80	1,085.43	21.37	51.792		
3,300.00	3,283.83	2,976.32	2,847.39	12.24	14.62	174.73	-772.25	-73.94	1,154.66	1,132.60	22.06	52.339		
3,400.00	3,383.20	3,064.12	2,928.68	12.62	15.18	174.78	-805.18	-78.08	1,202.52	1,179.77	22.75	52.849		
3,500.00	3,482.58	3,151.92	3,009.97	13.01	15.74	174.82	-838.11	-82.22	1,250.38	1,226.93	23.45	53.325		
3,600.00	3,581.95	3,239.72	3,091.25	13.40	16.30	174.86	-871.03	-86.36	1,298.24	1,274.10	24.14	53.771		
3,700.00	3,681.33	3,327.52	3,172.54	13.78	16.86	174.90	-903.96	-90.50	1,346.10	1,321.26	24.84	54.189		
3,800.00	3,780.70	3,415.32	3,253.83	14.17	17.42	174.93	-936.89	-94.64	1,393.96	1,368.42	25.54	54.581		
3,900.00	3,880.08	3,503.12	3,335.11	14.55	17.99	174.97	-969.81	-98.78	1,441.82	1,415.59	26.24	54.951		
4,000.00	3,979.45	3,590.92	3,416.40	14.94	18.55	175.00	-1,002.74	-102.92	1,489.69	1,462.75	26.94	55.299		
4,100.00	4,078.82	3,678.72	3,497.68	15.33	19.11	175.02	-1,035.67	-107.06	1,537.55	1,509.91	27.64	55.627		
4,200.00	4,178.20	3,766.52	3,578.97	15.71	19.68	175.05	-1,068.60	-111.20	1,585.41	1,557.07	28.34	55.938		
4,300.00	4,277.57	3,854.32	3,660.26	16.10	20.24	175.08	-1,101.52	-115.34	1,633.27	1,604.23	29.05	56.231		
4,400.00	4,376.95	3,942.12	3,741.54	16.49	20.81	175.10	-1,134.45	-119.48	1,681.14	1,651.39	29.75	56.510		
4,500.00	4,476.32	4,029.92	3,822.83	16.87	21.37	175.12	-1,167.38	-123.62	1,729.00	1,698.55	30.45	56.774		
4,600.00	4,575.70	4,117.71	3,904.11	17.26	21.94	175.14	-1,200.30	-127.76	1,776.86	1,745.71	31.16	57.025		
4,700.00	4,675.07	4,205.51	3,985.40	17.65	22.50	175.16	-1,233.23	-131.90	1,824.73	1,792.86	31.87	57.264		
4,800.00	4,774.45	4,293.31	4,066.69	18.03	23.07	175.18	-1,266.16	-136.04	1,872.59	1,840.02	32.57	57.492		
4,900.00	4,873.82	4,381.11	4,147.97	18.42	23.64	175.20	-1,299.08	-140.18	1,920.46	1,887.18	33.28	57.708		
5,000.00	4,973.20	4,468.91	4,229.26	18.80	24.20	175.22	-1,332.01	-144.32	1,968.32	1,934.33	33.99	57.915		
5,100.00	5,072.57	4,556.71	4,310.54	19.19	24.77	175.23	-1,364.94	-148.46	2,016.19	1,981.49	34.69	58.112		

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

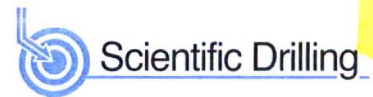
Offset Design Trieb Fed Pad - Trieb Federal Com 603 4H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,171.95	4,644.51	4,391.83	19.58	25.34	175.25	-1,397.86	-152.60	2,064.05	2,028.65	35.40	58.301		
5,300.00	5,271.32	4,732.31	4,473.12	19.96	25.90	175.26	-1,430.79	-156.74	2,111.91	2,075.80	36.11	58.482		
5,400.00	5,370.69	4,820.11	4,554.40	20.35	26.47	170.44	-1,463.72	-160.89	2,159.78	2,122.96	36.82	58.655		
5,500.00	5,469.49	4,907.03	4,634.87	20.74	27.03	125.62	-1,496.31	-164.98	2,208.38	2,170.86	37.53	58.845		
5,600.00	5,565.90	4,991.19	4,712.79	21.13	27.58	108.80	-1,527.88	-168.95	2,257.76	2,219.54	38.22	59.070		
5,700.00	5,658.06	5,070.96	4,786.64	21.53	28.09	99.60	-1,557.79	-172.71	2,307.31	2,268.41	38.90	59.315		
5,800.00	5,744.16	5,144.79	4,854.99	21.93	28.57	93.21	-1,585.48	-176.20	2,356.62	2,317.05	39.57	59.553		
5,900.00	5,822.53	5,211.23	4,916.51	22.38	29.00	88.19	-1,610.40	-179.33	2,405.38	2,365.11	40.27	59.738		
6,000.00	5,891.65	5,269.00	4,969.99	22.93	29.37	83.92	-1,632.06	-182.05	2,453.34	2,412.32	41.02	59.809		
6,100.00	5,950.17	5,316.97	5,014.40	23.68	29.69	80.10	-1,650.05	-184.31	2,500.29	2,458.41	41.88	59.704		
6,200.00	5,996.95	5,354.21	5,048.88	24.69	29.93	76.54	-1,664.02	-186.07	2,545.97	2,503.09	42.88	59.377		
6,300.00	6,031.08	5,379.99	5,072.75	25.98	30.09	73.17	-1,673.69	-187.29	2,590.06	2,546.03	44.03	58.825		
6,400.00	6,051.90	5,393.81	5,085.54	27.55	30.18	69.94	-1,678.87	-187.94	2,632.13	2,586.81	45.32	58.083		
6,500.00	6,059.00	5,395.40	5,087.02	29.33	30.19	66.89	-1,679.47	-188.01	2,671.67	2,624.98	46.69	57.222		
6,600.00	6,059.27	5,390.93	5,082.88	31.29	30.16	66.79	-1,677.79	-187.80	2,711.37	2,663.23	48.14	56.328		
6,700.00	6,059.53	5,386.46	5,078.74	33.41	30.14	66.69	-1,676.11	-187.59	2,754.11	2,704.46	49.65	55.469		
6,800.00	6,059.80	5,382.00	5,074.60	35.66	30.11	66.58	-1,674.44	-187.38	2,799.77	2,748.57	51.21	54.678		
6,900.00	6,060.07	5,377.53	5,070.47	38.01	30.08	66.48	-1,672.76	-187.17	2,848.21	2,795.44	52.77	53.974		
7,000.00	6,060.33	5,373.06	5,066.33	40.45	30.05	66.38	-1,671.09	-186.96	2,899.28	2,844.95	54.33	53.366		
7,100.00	6,060.60	5,368.59	5,062.19	42.97	30.02	66.27	-1,669.41	-186.75	2,952.85	2,896.98	55.86	52.859		
7,200.00	6,060.87	5,364.12	5,058.05	45.54	29.99	66.17	-1,667.73	-186.54	3,008.78	2,951.41	57.36	52.451		
7,300.00	6,061.13	5,359.65	5,053.92	48.17	29.96	66.07	-1,666.06	-186.33	3,066.94	3,008.12	58.82	52.140		
7,400.00	6,061.40	5,355.18	5,049.78	50.84	29.93	65.96	-1,664.38	-186.12	3,127.22	3,066.99	60.23	51.920		
7,500.00	6,061.66	5,350.71	5,045.64	53.55	29.90	65.86	-1,662.71	-185.91	3,189.48	3,127.90	61.59	51.787		
7,600.00	6,061.93	5,346.24	5,041.50	56.28	29.87	65.76	-1,661.03	-185.70	3,253.63	3,190.74	62.89	51.733		
7,700.00	6,062.20	5,341.77	5,037.37	59.05	29.85	65.65	-1,659.35	-185.48	3,319.54	3,255.40	64.14	51.754		
7,800.00	6,062.46	5,337.30	5,033.23	61.83	29.82	65.55	-1,657.68	-185.27	3,387.11	3,321.78	65.33	51.843		
7,900.00	6,062.73	5,332.84	5,029.09	64.64	29.79	65.45	-1,656.00	-185.06	3,456.25	3,389.78	66.47	51.996		
8,000.00	6,063.00	5,328.37	5,024.95	67.46	29.76	65.34	-1,654.33	-184.85	3,526.87	3,459.32	67.55	52.208		
8,100.00	6,063.26	5,323.90	5,020.82	70.30	29.73	65.24	-1,652.65	-184.64	3,598.87	3,530.29	68.58	52.473		
8,200.00	6,063.53	5,319.43	5,016.68	73.16	29.70	65.14	-1,650.97	-184.43	3,672.18	3,602.62	69.56	52.789		
8,300.00	6,063.79	5,314.96	5,012.54	76.02	29.67	65.03	-1,649.30	-184.22	3,746.72	3,676.23	70.49	53.150		
8,400.00	6,064.06	5,310.49	5,008.40	78.90	29.64	64.93	-1,647.62	-184.01	3,822.42	3,751.04	71.38	53.553		
8,500.00	6,064.33	5,306.02	5,004.27	81.79	29.61	64.83	-1,645.95	-183.80	3,899.21	3,826.99	72.21	53.995		
8,600.00	6,064.59	5,301.55	5,000.13	84.68	29.59	64.72	-1,644.27	-183.59	3,977.02	3,904.01	73.01	54.474		
8,700.00	6,064.86	5,297.08	4,995.99	87.59	29.56	64.62	-1,642.59	-183.38	4,055.80	3,982.04	73.76	54.985		
8,800.00	6,065.13	5,292.61	4,991.85	90.50	29.53	64.52	-1,640.92	-183.17	4,135.50	4,061.02	74.48	55.528		
8,900.00	6,065.39	5,288.14	4,987.72	93.41	29.50	64.41	-1,639.24	-182.96	4,216.05	4,140.90	75.15	56.100		
9,000.00	6,065.66	5,283.68	4,983.58	96.33	29.47	64.31	-1,637.57	-182.74	4,297.42	4,221.62	75.80	56.698		
9,100.00	6,065.92	5,279.21	4,979.44	99.26	29.44	64.21	-1,635.89	-182.53	4,379.55	4,303.15	76.40	57.321		
9,200.00	6,066.19	5,274.74	4,975.30	102.20	29.41	64.10	-1,634.21	-182.32	4,462.41	4,385.43	76.98	57.967		
9,300.00	6,066.46	5,270.27	4,971.17	105.13	29.38	64.00	-1,632.54	-182.11	4,545.96	4,468.43	77.53	58.636		
9,400.00	6,066.72	5,265.80	4,967.03	108.07	29.35	63.90	-1,630.86	-181.90	4,630.15	4,552.10	78.05	59.324		
9,500.00	6,066.99	5,261.33	4,962.89	111.02	29.33	63.79	-1,629.19	-181.69	4,714.96	4,636.41	78.54	60.031		
9,600.00	6,067.25	5,256.86	4,958.75	113.97	29.30	63.69	-1,627.51	-181.48	4,800.34	4,721.33	79.01	60.756		
9,700.00	6,067.52	5,252.39	4,954.62	116.92	29.27	63.59	-1,625.83	-181.27	4,886.28	4,806.83	79.45	61.498		
9,800.00	6,067.79	5,247.92	4,950.48	119.87	29.24	63.48	-1,624.16	-181.06	4,972.74	4,892.86	79.88	62.256		
9,900.00	6,068.05	5,243.45	4,946.34	122.83	29.21	63.38	-1,622.48	-180.85	5,059.69	4,979.42	80.28	63.028		
10,000.00	6,068.32	5,238.99	4,942.20	125.79	29.18	63.28	-1,620.81	-180.64	5,147.12	5,066.46	80.66	63.814		
10,100.00	6,068.59	5,234.52	4,938.07	128.75	29.15	63.18	-1,619.13	-180.43	5,234.99	5,153.97	81.02	64.613		
10,200.00	6,068.85	5,230.05	4,933.93	131.71	29.12	63.07	-1,617.45	-180.22	5,323.28	5,241.92	81.36	65.425		
10,300.00	6,069.12	5,225.58	4,929.79	134.68	29.09	62.97	-1,615.78	-180.01	5,411.98	5,330.29	81.69	66.249		

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,400.00	6,069.38	5,221.11	4,925.65	137.65	29.06	62.87	-1,614.10	-179.79	5,501.06	5,419.06	82.00	67.083		
10,500.00	6,069.65	5,216.64	4,921.52	140.62	29.04	62.76	-1,612.43	-179.58	5,590.51	5,508.21	82.30	67.928		
10,600.00	6,069.92	5,212.17	4,917.38	143.59	29.01	62.66	-1,610.75	-179.37	5,680.31	5,597.73	82.58	68.784		
10,700.00	6,070.18	5,207.70	4,913.24	146.56	28.98	62.56	-1,609.07	-179.16	5,770.44	5,687.59	82.85	69.648		
10,800.00	6,070.45	5,203.23	4,909.10	149.54	28.95	62.46	-1,607.40	-178.95	5,860.88	5,777.78	83.11	70.522		
10,900.00	6,070.72	5,198.76	4,904.97	152.52	28.92	62.35	-1,605.72	-178.74	5,951.63	5,868.28	83.35	71.404		
11,000.00	6,070.98	5,194.29	4,900.83	155.49	28.89	62.25	-1,604.05	-178.53	6,042.67	5,959.08	83.58	72.295		
11,100.00	6,071.25	5,189.83	4,896.69	158.47	28.86	62.15	-1,602.37	-178.32	6,133.98	6,050.17	83.81	73.193		
11,200.00	6,071.51	5,185.36	4,892.55	161.45	28.83	62.05	-1,600.69	-178.11	6,225.56	6,141.54	84.02	74.099		
11,300.00	6,071.78	5,180.89	4,888.41	164.43	28.80	61.94	-1,599.02	-177.90	6,317.38	6,233.17	84.22	75.012		
11,400.00	6,072.05	5,176.42	4,884.28	167.42	28.78	61.84	-1,597.34	-177.69	6,409.45	6,325.04	84.41	75.932		
11,500.00	6,072.31	5,171.95	4,880.14	170.40	28.75	61.74	-1,595.67	-177.48	6,501.76	6,417.16	84.59	76.858		
11,600.00	6,072.58	5,167.48	4,876.00	173.38	28.72	61.64	-1,593.99	-177.27	6,594.28	6,509.51	84.77	77.791		
11,700.00	6,072.85	5,163.01	4,871.86	176.37	28.69	61.53	-1,592.31	-177.05	6,687.01	6,602.08	84.94	78.729		
11,800.00	6,073.11	5,158.54	4,867.73	179.36	28.66	61.43	-1,590.64	-176.84	6,779.95	6,694.86	85.10	79.674		
11,900.00	6,073.38	5,154.07	4,863.59	182.34	28.63	61.33	-1,588.96	-176.63	6,873.09	6,787.84	85.25	80.623		
12,000.00	6,073.64	5,149.60	4,859.45	185.33	28.60	61.23	-1,587.29	-176.42	6,966.41	6,881.01	85.40	81.579		
12,100.00	6,073.91	5,145.13	4,855.31	188.32	28.57	61.13	-1,585.61	-176.21	7,059.91	6,974.38	85.53	82.539		
12,200.00	6,074.18	5,140.67	4,851.18	191.31	28.54	61.02	-1,583.93	-176.00	7,153.58	7,067.92	85.67	83.504		
12,300.00	6,074.44	5,136.20	4,847.04	194.30	28.52	60.92	-1,582.26	-175.79	7,247.42	7,161.63	85.79	84.474		
12,400.00	6,074.71	5,131.73	4,842.90	197.29	28.49	60.82	-1,580.58	-175.58	7,341.43	7,255.51	85.92	85.448		
12,500.00	6,074.98	5,127.26	4,838.76	200.28	28.46	60.72	-1,578.91	-175.37	7,435.58	7,349.55	86.03	86.427		
12,600.00	6,075.24	5,122.79	4,834.63	203.27	28.43	60.62	-1,577.23	-175.16	7,529.88	7,443.74	86.14	87.410		
12,700.00	6,075.51	5,118.32	4,830.49	206.26	28.40	60.51	-1,575.55	-174.95	7,624.33	7,538.08	86.25	88.397		
12,800.00	6,075.77	5,113.85	4,826.35	209.26	28.37	60.41	-1,573.88	-174.74	7,718.91	7,632.56	86.35	89.388		
12,900.00	6,076.04	5,109.38	4,822.21	212.25	28.34	60.31	-1,572.20	-174.53	7,813.63	7,727.18	86.45	90.383		
13,000.00	6,076.31	5,104.91	4,818.08	215.24	28.31	60.21	-1,570.53	-174.32	7,908.47	7,821.92	86.54	91.381		
13,100.00	6,076.57	5,100.44	4,813.94	218.24	28.28	60.11	-1,568.85	-174.10	8,003.43	7,916.80	86.63	92.383		
13,200.00	6,076.84	5,095.97	4,809.80	221.23	28.26	60.01	-1,567.17	-173.89	8,098.52	8,011.80	86.72	93.389		
13,300.00	6,077.10	5,091.51	4,805.66	224.23	28.23	59.90	-1,565.50	-173.68	8,193.72	8,106.92	86.80	94.397		
13,400.00	6,077.37	5,087.04	4,801.53	227.22	28.20	59.80	-1,563.82	-173.47	8,289.03	8,202.15	86.88	95.409		
13,500.00	6,077.64	5,082.57	4,797.39	230.22	28.17	59.70	-1,562.15	-173.26	8,384.44	8,297.49	86.95	96.424		
13,600.00	6,077.90	5,078.10	4,793.25	233.21	28.14	59.60	-1,560.47	-173.05	8,479.96	8,392.94	87.03	97.442		
13,636.27	6,078.00	5,076.48	4,791.75	234.30	28.13	59.56	-1,559.86	-172.97	8,514.63	8,427.58	87.05	97.812		



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Strat Test 600 #1 - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	143.82	-20.02	14.64	24.80					
100.00	100.00	100.00	100.00	0.18	0.18	143.82	-20.02	14.64	24.80	24.44	0.36	69.188		
200.00	200.00	200.00	200.00	0.54	0.54	143.82	-20.02	14.64	24.80	23.73	1.08	23.063		
300.00	300.00	300.00	300.00	0.90	0.90	143.82	-20.02	14.64	24.80	23.01	1.79	13.838		
400.00	400.00	400.00	400.00	1.25	1.25	143.82	-20.02	14.64	24.80	22.29	2.51	9.884		
500.00	500.00	500.00	500.00	1.61	1.61	143.82	-20.02	14.64	24.80	21.58	3.23	7.688 CC, ES		
600.00	599.98	599.98	599.98	1.97	1.97	134.33	-20.02	14.64	25.99	22.05	3.94	6.591		
700.00	699.84	699.84	699.84	2.33	2.33	141.47	-20.02	14.64	29.88	25.22	4.66	6.411 SF		
800.00	799.45	799.45	799.45	2.70	2.69	149.80	-20.02	14.64	37.11	31.72	5.38	6.894		
900.00	898.83	898.83	898.83	3.06	3.04	156.59	-20.02	14.64	47.04	40.93	6.10	7.709		
1,000.00	998.21	998.21	998.21	3.43	3.40	161.02	-20.02	14.64	57.46	50.64	6.82	8.428		
1,100.00	1,097.58	1,097.58	1,097.58	3.80	3.76	164.07	-20.02	14.64	68.12	60.59	7.53	9.041		
1,200.00	1,196.96	1,196.96	1,196.96	4.18	4.11	166.30	-20.02	14.64	78.92	70.67	8.25	9.564		
1,300.00	1,296.33	1,296.33	1,296.33	4.56	4.47	167.98	-20.02	14.64	89.82	80.85	8.97	10.013		
1,400.00	1,395.71	1,395.71	1,395.71	4.94	4.82	169.31	-20.02	14.64	100.77	91.08	9.69	10.401		
1,500.00	1,495.08	1,495.08	1,495.08	5.32	5.18	170.37	-20.02	14.64	111.76	101.35	10.41	10.739		
1,600.00	1,594.46	1,594.46	1,594.46	5.70	5.54	171.24	-20.02	14.64	122.78	111.66	11.13	11.036		
1,700.00	1,693.83	1,693.83	1,693.83	6.08	5.89	171.97	-20.02	14.64	133.83	121.99	11.85	11.298		
1,800.00	1,793.21	1,793.21	1,793.21	6.46	6.25	172.58	-20.02	14.64	144.90	132.33	12.56	11.532		
1,900.00	1,892.58	1,892.58	1,892.58	6.85	6.61	173.11	-20.02	14.64	155.98	142.69	13.28	11.742		
2,000.00	1,991.96	1,991.96	1,991.96	7.23	6.96	173.57	-20.02	14.64	167.07	153.06	14.00	11.930		
2,100.00	2,091.33	2,091.33	2,091.33	7.62	7.32	173.97	-20.02	14.64	178.17	163.44	14.72	12.101		
2,200.00	2,190.71	2,190.71	2,190.71	8.00	7.67	174.33	-20.02	14.64	189.28	173.83	15.44	12.256		
2,300.00	2,290.08	2,290.08	2,290.08	8.38	8.03	174.64	-20.02	14.64	200.39	184.23	16.16	12.397		
2,400.00	2,389.46	2,389.46	2,389.46	8.77	8.39	174.93	-20.02	14.64	211.51	194.63	16.88	12.527		
2,500.00	2,488.83	2,488.83	2,488.83	9.15	8.74	175.18	-20.02	14.64	222.64	205.03	17.60	12.646		
2,600.00	2,588.20	2,588.20	2,588.20	9.54	9.10	175.41	-20.02	14.64	233.76	215.44	18.32	12.757		
2,700.00	2,687.58	2,687.58	2,687.58	9.92	9.45	175.62	-20.02	14.64	244.90	225.85	19.05	12.859		
2,800.00	2,786.95	2,786.95	2,786.95	10.31	9.81	175.81	-20.02	14.64	256.03	236.27	19.77	12.953		
2,900.00	2,886.33	2,886.33	2,886.33	10.70	10.17	175.99	-20.02	14.64	267.17	246.68	20.49	13.041		
3,000.00	2,985.70	2,985.70	2,985.70	11.08	10.52	176.15	-20.02	14.64	278.31	257.10	21.21	13.123		
3,100.00	3,085.08	3,085.08	3,085.08	11.47	10.88	176.30	-20.02	14.64	289.45	267.52	21.93	13.200		
3,200.00	3,184.45	3,184.45	3,184.45	11.85	11.24	176.43	-20.02	14.64	300.59	277.95	22.65	13.272		
3,300.00	3,283.83	3,283.83	3,283.83	12.24	11.59	176.56	-20.02	14.64	311.74	288.37	23.37	13.340		
3,400.00	3,383.20	3,383.20	3,383.20	12.62	11.95	176.68	-20.02	14.64	322.88	298.80	24.09	13.403		
3,500.00	3,482.58	3,482.58	3,482.58	13.01	12.30	176.79	-20.02	14.64	334.03	309.22	24.81	13.463		
3,600.00	3,581.95	3,581.95	3,581.95	13.40	12.66	176.89	-20.02	14.64	345.18	319.65	25.53	13.520		
3,700.00	3,681.33	3,681.33	3,681.33	13.78	13.02	176.99	-20.02	14.64	356.33	330.08	26.25	13.573		
3,800.00	3,780.70	3,780.70	3,780.70	14.17	13.37	177.08	-20.02	14.64	367.48	340.51	26.97	13.624		
3,900.00	3,880.08	3,880.08	3,880.08	14.55	13.73	177.17	-20.02	14.64	378.63	350.94	27.69	13.672		
4,000.00	3,979.45	3,979.45	3,979.45	14.94	14.09	177.25	-20.02	14.64	389.79	361.37	28.41	13.718		
4,100.00	4,078.82	4,078.82	4,078.82	15.33	14.44	177.33	-20.02	14.64	400.94	371.80	29.14	13.761		
4,200.00	4,178.20	4,178.20	4,178.20	15.71	14.80	177.40	-20.02	14.64	412.09	382.24	29.86	13.802		
4,300.00	4,277.57	4,277.57	4,277.57	16.10	15.15	177.47	-20.02	14.64	423.25	392.67	30.58	13.842		
4,400.00	4,376.95	4,376.95	4,376.95	16.49	15.51	177.53	-20.02	14.64	434.40	403.11	31.30	13.879		
4,500.00	4,476.32	4,476.32	4,476.32	16.87	15.87	177.59	-20.02	14.64	445.56	413.54	32.02	13.915		
4,600.00	4,575.70	4,575.70	4,575.70	17.26	16.22	177.65	-20.02	14.64	456.72	423.98	32.74	13.950		
4,700.00	4,675.07	4,675.07	4,675.07	17.65	16.58	177.71	-20.02	14.64	467.87	434.41	33.46	13.982		
4,800.00	4,774.45	4,774.45	4,774.45	18.03	16.94	177.76	-20.02	14.64	479.03	444.85	34.18	14.014		
4,900.00	4,873.82	4,873.82	4,873.82	18.42	17.29	177.81	-20.02	14.64	490.19	455.28	34.90	14.044		
5,000.00	4,973.20	4,973.20	4,973.20	18.80	17.65	177.86	-20.02	14.64	501.34	465.72	35.62	14.073		
5,100.00	5,072.57	5,072.57	5,072.57	19.19	18.00	177.91	-20.02	14.64	512.50	476.16	36.35	14.101		

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Strat Test 600 #1 - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
5,200.00	5,171.95	5,171.95	5,171.95	19.58	18.36	177.95	-20.02	14.64	523.66	486.59	37.07	14.128			
5,300.00	5,271.32	5,271.32	5,271.32	19.96	18.72	178.00	-20.02	14.64	534.82	497.03	37.79	14.153			
5,400.00	5,370.69	5,370.69	5,370.69	20.35	19.07	173.43	-20.02	14.64	545.98	507.48	38.51	14.178			
5,500.00	5,469.49	5,469.49	5,469.49	20.74	19.43	132.64	-20.02	14.64	558.56	519.34	39.23	14.239			
5,600.00	5,565.90	5,565.90	5,565.90	21.13	19.77	120.62	-20.02	14.64	574.02	534.09	39.93	14.374			
5,700.00	5,658.06	5,658.06	5,658.06	21.53	20.10	116.66	-20.02	14.64	593.45	552.83	40.62	14.609			
5,800.00	5,744.16	5,744.16	5,744.16	21.93	20.41	115.51	-20.02	14.64	618.42	577.13	41.29	14.976			
5,900.00	5,822.53	5,822.53	5,822.53	22.38	20.69	115.28	-20.02	14.64	650.56	608.61	41.95	15.509			
6,000.00	5,891.65	5,891.65	5,891.65	22.93	20.94	114.92	-20.02	14.64	691.15	648.57	42.58	16.230			
6,100.00	5,950.17	5,950.17	5,950.17	23.68	21.15	113.72	-20.02	14.64	740.87	697.67	43.20	17.149			
6,200.00	5,996.95	5,996.95	5,996.95	24.69	21.32	111.09	-20.02	14.64	799.57	755.79	43.78	18.263			
6,300.00	6,031.08	6,031.08	6,031.08	25.98	21.44	106.52	-20.02	14.64	866.38	822.08	44.30	19.559			
6,400.00	6,051.90	6,051.90	6,051.90	27.55	21.52	99.57	-20.02	14.64	939.81	895.09	44.73	21.013			
6,500.00	6,059.00	6,059.00	6,059.00	29.33	21.54	90.20	-20.02	14.64	1,018.01	972.96	45.05	22.597			
6,600.00	6,059.27	6,059.27	6,059.27	31.29	21.54	90.23	-20.02	14.64	1,099.54	1,054.23	45.31	24.266			
6,700.00	6,059.53	6,059.53	6,059.53	33.41	21.54	90.25	-20.02	14.64	1,183.91	1,138.36	45.55	25.993			
6,800.00	6,059.80	6,059.80	6,059.80	35.66	21.54	90.28	-20.02	14.64	1,270.55	1,224.79	45.76	27.767			
6,900.00	6,060.07	6,060.07	6,060.07	38.01	21.54	90.30	-20.02	14.64	1,359.02	1,313.08	45.95	29.578			
7,000.00	6,060.33	6,060.33	6,060.33	40.45	21.55	90.33	-20.02	14.64	1,449.00	1,402.88	46.12	31.420			
7,100.00	6,060.60	6,060.60	6,060.60	42.97	21.55	90.35	-20.02	14.64	1,540.21	1,493.94	46.27	33.289			
7,200.00	6,060.87	6,060.87	6,060.87	45.54	21.55	90.38	-20.02	14.64	1,632.45	1,586.04	46.41	35.178			
7,300.00	6,061.13	6,061.13	6,061.13	48.17	21.55	90.40	-20.02	14.64	1,725.56	1,679.03	46.53	37.085			
7,400.00	6,061.40	6,061.40	6,061.40	50.84	21.55	90.43	-20.02	14.64	1,819.39	1,772.75	46.64	39.006			
7,500.00	6,061.66	6,061.66	6,061.66	53.55	21.55	90.45	-20.02	14.64	1,913.86	1,867.11	46.75	40.940			
7,600.00	6,061.93	6,061.93	6,061.93	56.28	21.55	90.48	-20.02	14.64	2,008.85	1,962.01	46.84	42.884			
7,700.00	6,062.20	6,062.20	6,062.20	59.05	21.55	90.50	-20.02	14.64	2,104.31	2,057.38	46.93	44.836			
7,800.00	6,062.46	6,062.46	6,062.46	61.83	21.55	90.53	-20.02	14.64	2,200.18	2,153.16	47.02	46.796			
7,900.00	6,062.73	6,062.73	6,062.73	64.64	21.55	90.55	-20.02	14.64	2,296.40	2,249.30	47.09	48.761			
8,000.00	6,063.00	6,063.00	6,063.00	67.46	21.55	90.58	-20.02	14.64	2,392.92	2,345.76	47.17	50.731			
8,100.00	6,063.26	6,063.26	6,063.26	70.30	21.56	90.60	-20.02	14.64	2,489.73	2,442.49	47.24	52.705			
8,200.00	6,063.53	6,063.53	6,063.53	73.16	21.56	90.63	-20.02	14.64	2,586.77	2,539.47	47.31	54.682			
8,300.00	6,063.79	6,063.79	6,063.79	76.02	21.56	90.65	-20.02	14.64	2,684.03	2,636.66	47.37	56.661			
8,400.00	6,064.06	6,064.06	6,064.06	78.90	21.56	90.68	-20.02	14.64	2,781.49	2,734.06	47.43	58.642			
8,500.00	6,064.33	6,064.33	6,064.33	81.79	21.56	90.70	-20.02	14.64	2,879.12	2,831.63	47.49	60.624			
8,600.00	6,064.59	6,064.59	6,064.59	84.68	21.56	90.73	-20.02	14.64	2,976.91	2,929.36	47.55	62.607			
8,700.00	6,064.86	6,064.86	6,064.86	87.59	21.56	90.75	-20.02	14.64	3,074.84	3,027.23	47.60	64.591			
8,800.00	6,065.13	6,065.13	6,065.13	90.50	21.56	90.78	-20.02	14.64	3,172.90	3,125.24	47.66	66.574			
8,900.00	6,065.39	6,065.39	6,065.39	93.41	21.56	90.80	-20.02	14.64	3,271.07	3,223.36	47.71	68.557			
9,000.00	6,065.66	6,065.66	6,065.66	96.33	21.56	90.83	-20.02	14.64	3,369.36	3,321.59	47.77	70.539			
9,100.00	6,065.92	6,065.92	6,065.92	99.26	21.57	90.85	-20.02	14.64	3,467.74	3,419.92	47.82	72.520			
9,200.00	6,066.19	6,066.19	6,066.19	102.20	21.57	90.88	-20.02	14.64	3,566.21	3,518.34	47.87	74.499			
9,300.00	6,066.46	6,066.46	6,066.46	105.13	21.57	90.90	-20.02	14.64	3,664.77	3,616.85	47.92	76.477			
9,400.00	6,066.72	6,066.72	6,066.72	108.07	21.57	90.92	-20.02	14.64	3,763.40	3,715.43	47.97	78.454			
9,500.00	6,066.99	6,066.99	6,066.99	111.02	21.57	90.95	-20.02	14.64	3,862.10	3,814.08	48.02	80.428			
9,600.00	6,067.25	6,067.25	6,067.25	113.97	21.57	90.97	-20.02	14.64	3,960.86	3,912.80	48.07	82.400			
9,700.00	6,067.52	6,067.52	6,067.52	116.92	21.57	91.00	-20.02	14.64	4,059.69	4,011.57	48.12	84.369			
9,800.00	6,067.79	6,067.79	6,067.79	119.87	21.57	91.02	-20.02	14.64	4,158.57	4,110.41	48.17	86.336			
9,900.00	6,068.05	6,068.05	6,068.05	122.83	21.57	91.05	-20.02	14.64	4,257.51	4,209.29	48.22	88.300			
10,000.00	6,068.32	6,068.32	6,068.32	125.79	21.57	91.07	-20.02	14.64	4,356.49	4,308.23	48.27	90.261			
10,100.00	6,068.59	6,068.59	6,068.59	128.75	21.57	91.10	-20.02	14.64	4,455.52	4,407.21	48.31	92.219			
10,200.00	6,068.85	6,068.85	6,068.85	131.71	21.58	91.12	-20.02	14.64	4,554.59	4,506.23	48.36	94.174			
10,300.00	6,069.12	6,069.12	6,069.12	134.68	21.58	91.15	-20.02	14.64	4,653.70	4,605.29	48.41	96.125			

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Strat Test 600 #1 - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,400.00	6,069.38	6,069.38	6,069.38	137.65	21.58	91.17	-20.02	14.64	4,752.85	4,704.39	48.46	98.073		
10,500.00	6,069.65	6,069.65	6,069.65	140.62	21.58	91.20	-20.02	14.64	4,852.04	4,803.52	48.51	100.018		
10,600.00	6,069.92	6,069.92	6,069.92	143.59	21.58	91.22	-20.02	14.64	4,951.25	4,902.69	48.56	101.958		
10,700.00	6,070.18	6,070.18	6,070.18	146.56	21.58	91.25	-20.02	14.64	5,050.50	5,001.89	48.61	103.895		
10,800.00	6,070.45	6,070.45	6,070.45	149.54	21.58	91.27	-20.02	14.64	5,149.78	5,101.11	48.66	105.827		
10,900.00	6,070.72	6,070.72	6,070.72	152.52	21.58	91.30	-20.02	14.64	5,249.08	5,200.37	48.71	107.756		
11,000.00	6,070.98	6,070.98	6,070.98	155.49	21.58	91.32	-20.02	14.64	5,348.41	5,299.65	48.76	109.680		
11,100.00	6,071.25	6,071.25	6,071.25	158.47	21.58	91.35	-20.02	14.64	5,447.76	5,398.95	48.81	111.600		
11,200.00	6,071.51	6,071.51	6,071.51	161.45	21.59	91.37	-20.02	14.64	5,547.14	5,498.27	48.87	113.516		
11,300.00	6,071.78	6,071.78	6,071.78	164.43	21.59	91.40	-20.02	14.64	5,646.54	5,597.62	48.92	115.427		
11,400.00	6,072.05	6,072.05	6,072.05	167.42	21.59	91.42	-20.02	14.64	5,745.96	5,696.99	48.97	117.334		
11,500.00	6,072.31	6,072.31	6,072.31	170.40	21.59	91.45	-20.02	14.64	5,845.40	5,796.38	49.02	119.236		
11,600.00	6,072.58	6,072.58	6,072.58	173.38	21.59	91.47	-20.02	14.64	5,944.86	5,895.78	49.08	121.134		
11,700.00	6,072.85	6,072.85	6,072.85	176.37	21.59	91.50	-20.02	14.64	6,044.34	5,995.20	49.13	123.026		
11,800.00	6,073.11	6,073.11	6,073.11	179.36	21.59	91.52	-20.02	14.64	6,143.83	6,094.64	49.18	124.914		
11,900.00	6,073.38	6,073.38	6,073.38	182.34	21.59	91.55	-20.02	14.64	6,243.34	6,194.10	49.24	126.796		
12,000.00	6,073.64	6,073.64	6,073.64	185.33	21.59	91.57	-20.02	14.64	6,342.86	6,293.57	49.29	128.674		
12,100.00	6,073.91	6,073.91	6,073.91	188.32	21.59	91.60	-20.02	14.64	6,442.40	6,393.05	49.35	130.547		
12,200.00	6,074.18	6,074.18	6,074.18	191.31	21.59	91.62	-20.02	14.64	6,541.96	6,492.55	49.41	132.414		
12,300.00	6,074.44	6,074.44	6,074.44	194.30	21.60	91.65	-20.02	14.64	6,641.52	6,592.06	49.46	134.276		
12,400.00	6,074.71	6,074.71	6,074.71	197.29	21.60	91.67	-20.02	14.64	6,741.10	6,691.59	49.52	136.133		
12,500.00	6,074.98	6,074.98	6,074.98	200.28	21.60	91.70	-20.02	14.64	6,840.70	6,791.12	49.58	137.985		
12,600.00	6,075.24	6,075.24	6,075.24	203.27	21.60	91.72	-20.02	14.64	6,940.30	6,890.67	49.63	139.831		
12,700.00	6,075.51	6,075.51	6,075.51	206.26	21.60	91.75	-20.02	14.64	7,039.92	6,990.22	49.69	141.671		
12,800.00	6,075.77	6,075.77	6,075.77	209.26	21.60	91.77	-20.02	14.64	7,139.54	7,089.79	49.75	143.506		
12,900.00	6,076.04	6,076.04	6,076.04	212.25	21.60	91.80	-20.02	14.64	7,239.18	7,189.37	49.81	145.336		
13,000.00	6,076.31	6,076.31	6,076.31	215.24	21.60	91.82	-20.02	14.64	7,338.82	7,288.95	49.87	147.160		
13,100.00	6,076.57	6,076.57	6,076.57	218.24	21.60	91.85	-20.02	14.64	7,438.48	7,388.55	49.93	148.978		
13,200.00	6,076.84	6,076.84	6,076.84	221.23	21.60	91.87	-20.02	14.64	7,538.14	7,488.15	49.99	150.791		
13,300.00	6,077.10	6,077.10	6,077.10	224.23	21.61	91.90	-20.02	14.64	7,637.82	7,587.77	50.05	152.598		
13,400.00	6,077.37	6,077.37	6,077.37	227.22	21.61	91.92	-20.02	14.64	7,737.50	7,687.39	50.11	154.398		
13,500.00	6,077.64	6,077.64	6,077.64	230.22	21.61	91.95	-20.02	14.64	7,837.19	7,787.01	50.18	156.194		
13,600.00	6,077.90	6,077.90	6,077.90	233.21	21.61	91.97	-20.02	14.64	7,936.89	7,886.65	50.24	157.983		
13,636.27	6,078.00	6,078.00	6,078.00	234.30	21.61	91.98	-20.02	14.64	7,973.05	7,922.78	50.26	158.630		



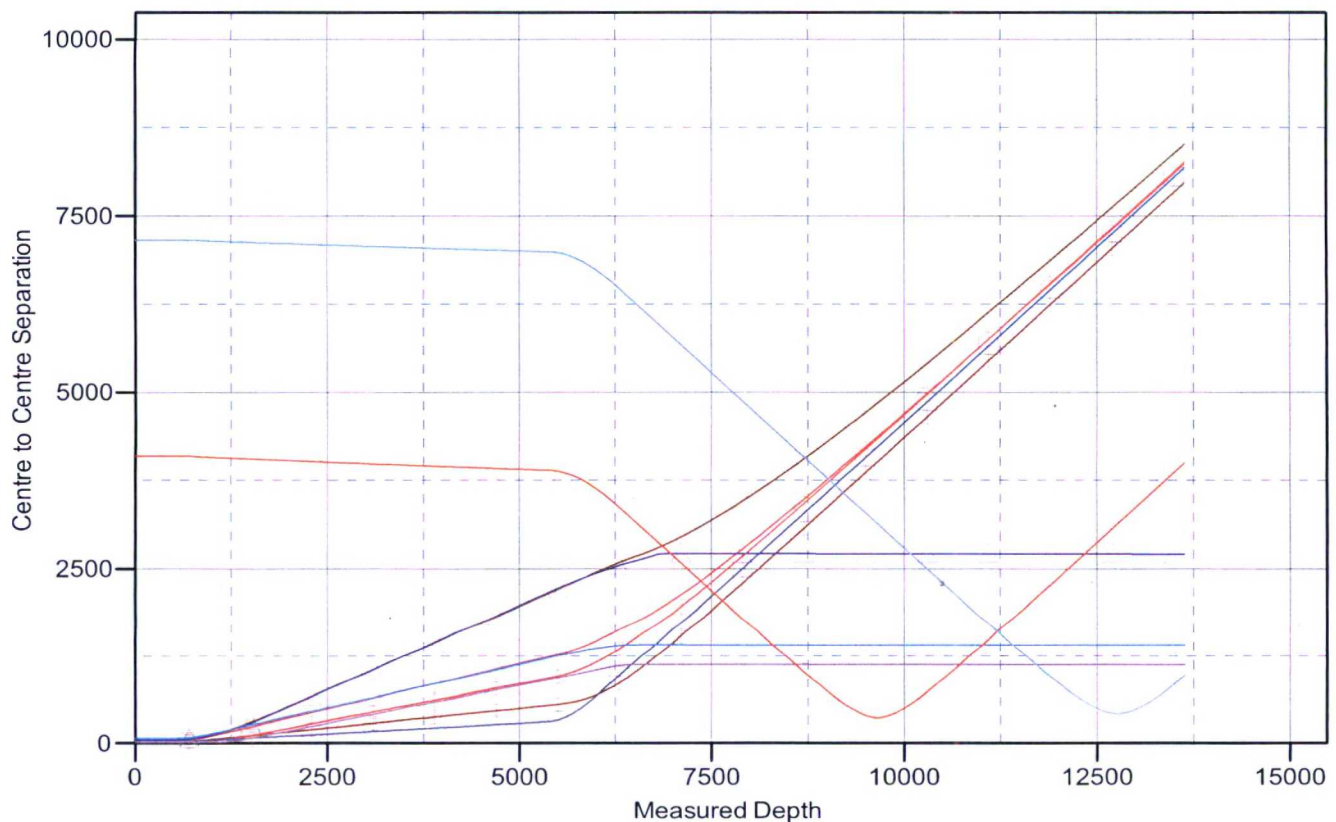
Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Reference Depths are relative to GL 6050' @ 6050.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -107.833334

Coordinates are relative to: Trieb Federal Com 601 1H - Slot B02
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
Grid Convergence at Surface is: -0.03°

Ladder Plot



LEGEND

- | | | |
|---|--|-----------------------|
| Trieb Federal Strat Test 600 #1, OH, Plan #1 V0 | Trieb Federal Com 603 1H, OH, Plan #2 V0 | Grenier A3, OH, OH V0 |
| Trieb Federal Com 603 4H, OH, Plan #2 V0 | Trieb Federal Com 602 2H, OH, Plan #2 V0 | Grenier A8, OH, OH V0 |
| Trieb Federal Com 603 3H, OH, Plan #2 V0 | Trieb Federal Com 602 1H, OH, Plan #2 V0 | |
| Trieb Federal Com 603 2H, OH, Plan #2 V0 | Trieb Federal Com 601 2H, OH, Plan #2 V0 | |



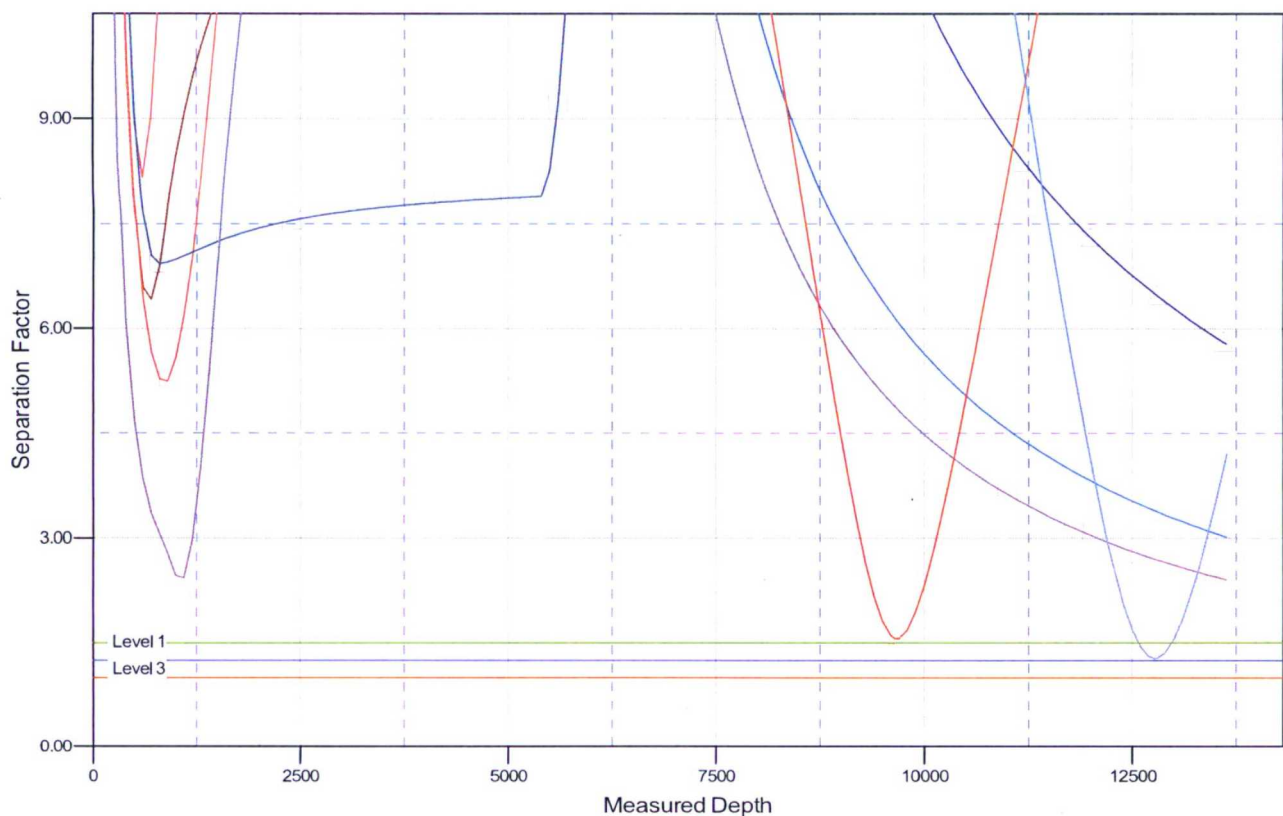
Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Reference Depths are relative to GL 6050' @ 6050.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333334

Coordinates are relative to: Trieb Federal Com 601 1H - Slot B02
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
Grid Convergence at Surface is: -0.03°

Separation Factor Plot



LEGEND

- | | | |
|---|--|-----------------------|
| Trieb Federal Strat Test 600 #1, OH, Plan #1 V0 | Trieb Federal Com 603 1H, OH, Plan #2 V0 | Grenier A3, OH, OH V0 |
| Trieb Federal Com 603 4H, OH, Plan #2 V0 | Trieb Federal Com 602 2H, OH, Plan #2 V0 | Grenier A8, OH, OH V0 |
| Trieb Federal Com 603 3H, OH, Plan #2 V0 | Trieb Federal Com 602 1H, OH, Plan #2 V0 | |
| Trieb Federal Com 603 2H, OH, Plan #2 V0 | Trieb Federal Com 601 2H, OH, Plan #2 V0 | |



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Site: Trieb Fed Pad
Well: Trieb Federal Com 601 1H
Wellbore: OH
Design: Plan #2

PROJECT DETAILS: San Juan, NM NAD27

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico West 3003
System Datum: Mean Sea Level
Local North: True



Azimuths to True North
Magnetic North: 9.02°

Magnetic Field
Strength: 49811.5snT
Dip Angle: 63.30°
Date: 8/29/2018
Model: HDGM

WELL DETAILS: Trieb Federal Com 601 1H

GL 6050' @ 6050.00usft
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 2099218.10 485873.74 36.7691130 -107.8815630 B02

Plan: Plan #2 (Trieb Federal Com 601 1H/OH)

Created By: Janie Collins Date: 14:14, November 09 2018

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Trieb 601 1H LP	6059.00	592.32	827.22	2099810.00	486701.26	36.7707400	-107.8787386
Trieb 601 1H BHL	6078.00	592.31	7964.14	2099806.40	493838.17	36.7707369	-107.8543714

SECTION DETAILS

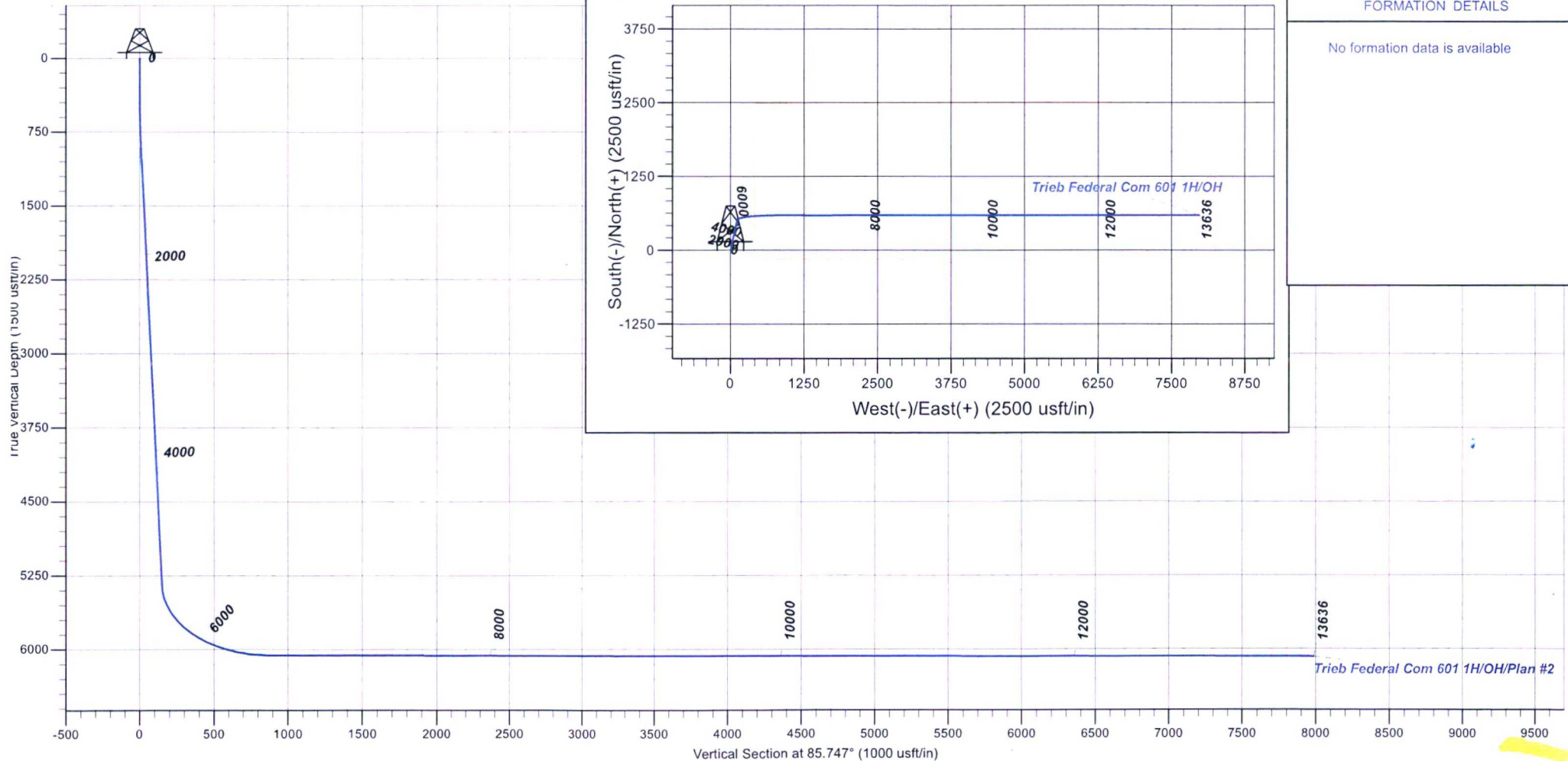
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	
820.54	6.41	12.359	819.87	17.50	3.83	2.00	12.36	5.12	
5393.34	6.41	12.359	5364.07	516.25	113.12	0.00	0.00	151.10	
6499.32	89.85	90.000	6059.00	592.32	827.22	8.00	77.73	868.87	Trieb 601 1H LP
13636.27	89.85	90.000	6078.00	592.31	7964.14	0.00	0.00	7986.13	Trieb 601 1H BHL

CASING DETAILS

No casing data is available

FORMATION DETAILS

No formation data is available





Hilcorp Energy Corp.

San Juan, NM NAD27

Trieb Fed Pad

Trieb Federal Com 601 1H - Slot B02

OH

Plan: Plan #2

Standard Planning Report

09 November, 2018



Scientific Drilling

www.scientificdrilling.com





Scientific Drilling, Intl Planning Report



Database: Grand Junction District
Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Site: Trieb Fed Pad
Well: Trieb Federal Com 601 1H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	San Juan, 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	Trieb Fed Pad			
Site Position:		Northing:	2,099,223.94 usft	Latitude: 36.7691290
From:	Map	Easting:	485,838.88 usft	Longitude: -107.8816820
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -0.03 °

Well	Trieb Federal Com 601 1H - Slot B02			
Well Position	+N/-S	-5.82 usft	Northing:	2,099,218.10 usft
	+E/-W	34.86 usft	Easting:	485,873.74 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level: 6,050.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/29/2018	9.02	63.30	49,812

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	85.747

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
820.54	6.41	12.359	819.87	17.50	3.83	2.00	2.00	0.00	12.36	
5,393.34	6.41	12.359	5,364.07	516.25	113.12	0.00	0.00	0.00	0.00	
6,499.32	89.85	90.000	6,059.00	592.32	827.22	8.00	7.54	7.02	77.73	Trieb 601 1H LP
13,636.27	89.85	90.000	6,078.00	592.31	7,964.14	0.00	0.00	0.00	0.00	Trieb 601 1H BHL



Scientific Drilling, Intl Planning Report



Database: Grand Junction District
Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Site: Trieb Fed Pad
Well: Trieb Federal Com 601 1H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	2.00	12.359	599.98	1.70	0.37	0.50	2.00	2.00	0.00
700.00	4.00	12.359	699.84	6.82	1.49	2.00	2.00	2.00	0.00
800.00	6.00	12.359	799.45	15.33	3.36	4.49	2.00	2.00	0.00
820.54	6.41	12.359	819.87	17.50	3.83	5.12	2.00	2.00	0.00
900.00	6.41	12.359	898.83	26.17	5.73	7.66	0.00	0.00	0.00
1,000.00	6.41	12.359	998.21	37.07	8.12	10.85	0.00	0.00	0.00
1,100.00	6.41	12.359	1,097.58	47.98	10.51	14.04	0.00	0.00	0.00
1,200.00	6.41	12.359	1,196.96	58.89	12.90	17.24	0.00	0.00	0.00
1,300.00	6.41	12.359	1,296.33	69.79	15.29	20.43	0.00	0.00	0.00
1,400.00	6.41	12.359	1,395.71	80.70	17.68	23.62	0.00	0.00	0.00
1,500.00	6.41	12.359	1,495.08	91.61	20.07	26.81	0.00	0.00	0.00
1,600.00	6.41	12.359	1,594.46	102.51	22.46	30.00	0.00	0.00	0.00
1,700.00	6.41	12.359	1,693.83	113.42	24.85	33.20	0.00	0.00	0.00
1,800.00	6.41	12.359	1,793.21	124.33	27.24	36.39	0.00	0.00	0.00
1,900.00	6.41	12.359	1,892.58	135.23	29.63	39.58	0.00	0.00	0.00
2,000.00	6.41	12.359	1,991.96	146.14	32.02	42.77	0.00	0.00	0.00
2,100.00	6.41	12.359	2,091.33	157.05	34.41	45.97	0.00	0.00	0.00
2,200.00	6.41	12.359	2,190.71	167.95	36.80	49.16	0.00	0.00	0.00
2,300.00	6.41	12.359	2,290.08	178.86	39.19	52.35	0.00	0.00	0.00
2,400.00	6.41	12.359	2,389.46	189.77	41.58	55.54	0.00	0.00	0.00
2,500.00	6.41	12.359	2,488.83	200.68	43.97	58.73	0.00	0.00	0.00
2,600.00	6.41	12.359	2,588.20	211.58	46.36	61.93	0.00	0.00	0.00
2,700.00	6.41	12.359	2,687.58	222.49	48.75	65.12	0.00	0.00	0.00
2,800.00	6.41	12.359	2,786.95	233.40	51.14	68.31	0.00	0.00	0.00
2,900.00	6.41	12.359	2,886.33	244.30	53.53	71.50	0.00	0.00	0.00
3,000.00	6.41	12.359	2,985.70	255.21	55.92	74.70	0.00	0.00	0.00
3,100.00	6.41	12.359	3,085.08	266.12	58.31	77.89	0.00	0.00	0.00
3,200.00	6.41	12.359	3,184.45	277.02	60.70	81.08	0.00	0.00	0.00
3,300.00	6.41	12.359	3,283.83	287.93	63.09	84.27	0.00	0.00	0.00
3,400.00	6.41	12.359	3,383.20	298.84	65.48	87.47	0.00	0.00	0.00
3,500.00	6.41	12.359	3,482.58	309.74	67.87	90.66	0.00	0.00	0.00
3,600.00	6.41	12.359	3,581.95	320.65	70.26	93.85	0.00	0.00	0.00
3,700.00	6.41	12.359	3,681.33	331.56	72.65	97.04	0.00	0.00	0.00
3,800.00	6.41	12.359	3,780.70	342.46	75.04	100.23	0.00	0.00	0.00
3,900.00	6.41	12.359	3,880.08	353.37	77.43	103.43	0.00	0.00	0.00
4,000.00	6.41	12.359	3,979.45	364.28	79.82	106.62	0.00	0.00	0.00
4,100.00	6.41	12.359	4,078.82	375.19	82.21	109.81	0.00	0.00	0.00
4,200.00	6.41	12.359	4,178.20	386.09	84.60	113.00	0.00	0.00	0.00
4,300.00	6.41	12.359	4,277.57	397.00	86.99	116.20	0.00	0.00	0.00
4,400.00	6.41	12.359	4,376.95	407.91	89.38	119.39	0.00	0.00	0.00
4,500.00	6.41	12.359	4,476.32	418.81	91.77	122.58	0.00	0.00	0.00
4,600.00	6.41	12.359	4,575.70	429.72	94.16	125.77	0.00	0.00	0.00
4,700.00	6.41	12.359	4,675.07	440.63	96.55	128.97	0.00	0.00	0.00
4,800.00	6.41	12.359	4,774.45	451.53	98.94	132.16	0.00	0.00	0.00
4,900.00	6.41	12.359	4,873.82	462.44	101.33	135.35	0.00	0.00	0.00
5,000.00	6.41	12.359	4,973.20	473.35	103.72	138.54	0.00	0.00	0.00
5,100.00	6.41	12.359	5,072.57	484.25	106.11	141.73	0.00	0.00	0.00
5,200.00	6.41	12.359	5,171.95	495.16	108.50	144.93	0.00	0.00	0.00



Scientific Drilling, Intl Planning Report



Database: Grand Junction District
Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Site: Trieb Fed Pad
Well: Trieb Federal Com 601 1H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	6.41	12.359	5,271.32	506.07	110.89	148.12	0.00	0.00	0.00
5,393.34	6.41	12.359	5,364.07	516.25	113.12	151.10	0.00	0.00	0.00
5,400.00	6.54	16.935	5,370.69	516.97	113.31	151.34	8.00	2.01	68.66
5,500.00	11.70	58.007	5,469.49	527.82	123.59	162.39	8.00	5.15	41.07
5,600.00	18.93	71.353	5,565.90	538.39	147.59	187.12	8.00	7.23	13.35
5,700.00	26.60	77.353	5,658.06	548.50	184.87	225.04	8.00	7.67	6.00
5,800.00	34.41	80.794	5,744.16	557.93	234.68	275.41	8.00	7.81	3.44
5,900.00	42.28	83.084	5,822.53	566.52	296.06	337.26	8.00	7.87	2.29
6,000.00	50.19	84.767	5,891.65	574.08	367.82	409.38	8.00	7.91	1.68
6,100.00	58.12	86.101	5,950.17	580.48	448.56	490.37	8.00	7.93	1.33
6,200.00	66.05	87.223	5,996.95	585.59	536.70	578.65	8.00	7.94	1.12
6,300.00	74.00	88.213	6,031.08	589.31	630.53	672.50	8.00	7.95	0.99
6,400.00	81.95	89.127	6,051.90	591.57	728.23	770.10	8.00	7.95	0.91
6,499.32	89.85	90.000	6,059.00	592.32	827.22	868.87	8.00	7.95	0.88
6,500.00	89.85	90.000	6,059.00	592.32	827.90	869.55	0.00	0.00	0.00
6,600.00	89.85	90.000	6,059.27	592.32	927.90	969.27	0.00	0.00	0.00
6,700.00	89.85	90.000	6,059.53	592.32	1,027.90	1,069.00	0.00	0.00	0.00
6,800.00	89.85	90.000	6,059.80	592.32	1,127.90	1,168.72	0.00	0.00	0.00
6,900.00	89.85	90.000	6,060.07	592.32	1,227.90	1,268.44	0.00	0.00	0.00
7,000.00	89.85	90.000	6,060.33	592.32	1,327.90	1,368.17	0.00	0.00	0.00
7,100.00	89.85	90.000	6,060.60	592.32	1,427.89	1,467.89	0.00	0.00	0.00
7,200.00	89.85	90.000	6,060.87	592.32	1,527.89	1,567.62	0.00	0.00	0.00
7,300.00	89.85	90.000	6,061.13	592.32	1,627.89	1,667.34	0.00	0.00	0.00
7,400.00	89.85	90.000	6,061.40	592.32	1,727.89	1,767.07	0.00	0.00	0.00
7,500.00	89.85	90.000	6,061.66	592.32	1,827.89	1,866.79	0.00	0.00	0.00
7,600.00	89.85	90.000	6,061.93	592.32	1,927.89	1,966.51	0.00	0.00	0.00
7,700.00	89.85	90.000	6,062.20	592.32	2,027.89	2,066.24	0.00	0.00	0.00
7,800.00	89.85	90.000	6,062.46	592.32	2,127.89	2,165.96	0.00	0.00	0.00
7,900.00	89.85	90.000	6,062.73	592.32	2,227.89	2,265.69	0.00	0.00	0.00
8,000.00	89.85	90.000	6,063.00	592.32	2,327.89	2,365.41	0.00	0.00	0.00
8,100.00	89.85	90.000	6,063.26	592.32	2,427.89	2,465.13	0.00	0.00	0.00
8,200.00	89.85	90.000	6,063.53	592.32	2,527.89	2,564.86	0.00	0.00	0.00
8,300.00	89.85	90.000	6,063.79	592.32	2,627.89	2,664.58	0.00	0.00	0.00
8,400.00	89.85	90.000	6,064.06	592.32	2,727.89	2,764.31	0.00	0.00	0.00
8,500.00	89.85	90.000	6,064.33	592.32	2,827.89	2,864.03	0.00	0.00	0.00
8,600.00	89.85	90.000	6,064.59	592.32	2,927.89	2,963.76	0.00	0.00	0.00
8,700.00	89.85	90.000	6,064.86	592.32	3,027.89	3,063.48	0.00	0.00	0.00
8,800.00	89.85	90.000	6,065.13	592.32	3,127.89	3,163.20	0.00	0.00	0.00
8,900.00	89.85	90.000	6,065.39	592.32	3,227.89	3,262.93	0.00	0.00	0.00
9,000.00	89.85	90.000	6,065.66	592.32	3,327.89	3,362.65	0.00	0.00	0.00
9,100.00	89.85	90.000	6,065.92	592.32	3,427.89	3,462.38	0.00	0.00	0.00
9,200.00	89.85	90.000	6,066.19	592.32	3,527.89	3,562.10	0.00	0.00	0.00
9,300.00	89.85	90.000	6,066.46	592.32	3,627.89	3,661.83	0.00	0.00	0.00
9,400.00	89.85	90.000	6,066.72	592.32	3,727.89	3,761.55	0.00	0.00	0.00
9,500.00	89.85	90.000	6,066.99	592.32	3,827.89	3,861.27	0.00	0.00	0.00
9,600.00	89.85	90.000	6,067.25	592.32	3,927.89	3,961.00	0.00	0.00	0.00
9,700.00	89.85	90.000	6,067.52	592.32	4,027.89	4,060.72	0.00	0.00	0.00
9,800.00	89.85	90.000	6,067.79	592.32	4,127.89	4,160.45	0.00	0.00	0.00
9,900.00	89.85	90.000	6,068.05	592.32	4,227.88	4,260.17	0.00	0.00	0.00
10,000.00	89.85	90.000	6,068.32	592.32	4,327.88	4,359.90	0.00	0.00	0.00
10,100.00	89.85	90.000	6,068.59	592.32	4,427.88	4,459.62	0.00	0.00	0.00
10,200.00	89.85	90.000	6,068.85	592.32	4,527.88	4,559.34	0.00	0.00	0.00
10,300.00	89.85	90.000	6,069.12	592.32	4,627.88	4,659.07	0.00	0.00	0.00
10,400.00	89.85	90.000	6,069.38	592.32	4,727.88	4,758.79	0.00	0.00	0.00



Scientific Drilling, Intl

Planning Report



Database: Grand Junction District
Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Site: Trieb Fed Pad
Well: Trieb Federal Com 601 1H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 1H - Slot B02
TVD Reference: GL 6050' @ 6050.00usft
MD Reference: GL 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,500.00	89.85	90.000	6,069.65	592.32	4,827.88	4,858.52	0.00	0.00	0.00
10,600.00	89.85	90.000	6,069.92	592.32	4,927.88	4,958.24	0.00	0.00	0.00
10,700.00	89.85	90.000	6,070.18	592.32	5,027.88	5,057.96	0.00	0.00	0.00
10,800.00	89.85	90.000	6,070.45	592.32	5,127.88	5,157.69	0.00	0.00	0.00
10,900.00	89.85	90.000	6,070.72	592.32	5,227.88	5,257.41	0.00	0.00	0.00
11,000.00	89.85	90.000	6,070.98	592.32	5,327.88	5,357.14	0.00	0.00	0.00
11,100.00	89.85	90.000	6,071.25	592.32	5,427.88	5,456.86	0.00	0.00	0.00
11,200.00	89.85	90.000	6,071.51	592.32	5,527.88	5,556.59	0.00	0.00	0.00
11,300.00	89.85	90.000	6,071.78	592.32	5,627.88	5,656.31	0.00	0.00	0.00
11,400.00	89.85	90.000	6,072.05	592.32	5,727.88	5,756.03	0.00	0.00	0.00
11,500.00	89.85	90.000	6,072.31	592.32	5,827.88	5,855.76	0.00	0.00	0.00
11,600.00	89.85	90.000	6,072.58	592.32	5,927.88	5,955.48	0.00	0.00	0.00
11,700.00	89.85	90.000	6,072.85	592.32	6,027.88	6,055.21	0.00	0.00	0.00
11,800.00	89.85	90.000	6,073.11	592.32	6,127.88	6,154.93	0.00	0.00	0.00
11,900.00	89.85	90.000	6,073.38	592.32	6,227.88	6,254.66	0.00	0.00	0.00
12,000.00	89.85	90.000	6,073.64	592.32	6,327.88	6,354.38	0.00	0.00	0.00
12,100.00	89.85	90.000	6,073.91	592.32	6,427.88	6,454.10	0.00	0.00	0.00
12,200.00	89.85	90.000	6,074.18	592.32	6,527.88	6,553.83	0.00	0.00	0.00
12,300.00	89.85	90.000	6,074.44	592.32	6,627.88	6,653.55	0.00	0.00	0.00
12,400.00	89.85	90.000	6,074.71	592.32	6,727.88	6,753.28	0.00	0.00	0.00
12,500.00	89.85	90.000	6,074.98	592.32	6,827.88	6,853.00	0.00	0.00	0.00
12,600.00	89.85	90.000	6,075.24	592.32	6,927.88	6,952.73	0.00	0.00	0.00
12,700.00	89.85	90.000	6,075.51	592.32	7,027.87	7,052.45	0.00	0.00	0.00
12,800.00	89.85	90.000	6,075.77	592.32	7,127.87	7,152.17	0.00	0.00	0.00
12,900.00	89.85	90.000	6,076.04	592.32	7,227.87	7,251.90	0.00	0.00	0.00
13,000.00	89.85	90.000	6,076.31	592.32	7,327.87	7,351.62	0.00	0.00	0.00
13,100.00	89.85	90.000	6,076.57	592.32	7,427.87	7,451.35	0.00	0.00	0.00
13,200.00	89.85	90.000	6,076.84	592.32	7,527.87	7,551.07	0.00	0.00	0.00
13,300.00	89.85	90.000	6,077.10	592.32	7,627.87	7,650.79	0.00	0.00	0.00
13,400.00	89.85	90.000	6,077.37	592.32	7,727.87	7,750.52	0.00	0.00	0.00
13,500.00	89.85	90.000	6,077.64	592.32	7,827.87	7,850.24	0.00	0.00	0.00
13,600.00	89.85	90.000	6,077.90	592.32	7,927.87	7,949.97	0.00	0.00	0.00
13,636.27	89.85	90.000	6,078.00	592.31	7,964.14	7,986.13	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Trieb 601 1H LP - plan hits target center - Point	0.00	0.000	6,059.00	592.32	827.22	2,099,809.99	486,701.26	36.7707400	-107.8787387
Trieb 601 1H BHL - plan hits target center - Point	0.00	0.000	6,078.00	592.31	7,964.14	2,099,806.40	493,838.18	36.7707369	-107.8543714

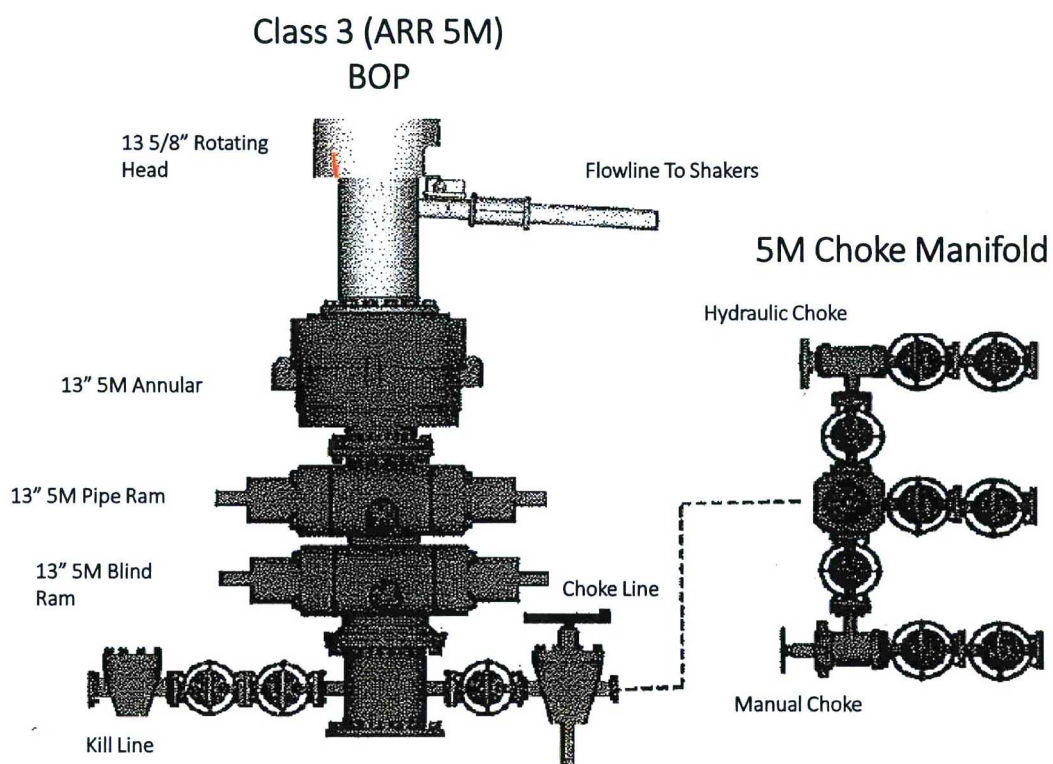


Hilcorp Energy Company

Trieb Federal Com 601 1H

BOPE & Choke Manifold Schematic

13-5/8" BOPE



Directions from the Intersection of US Hwy 550 & State Hwy 173

in Aztec, NM to Hilcorp Energy Company Trieb Federal Com 601 #1H

2492' FNL & 405' FEL, Section 33, T30N, R10W, N.M.P.M., San Juan County, NM

Latitude: 36.769118°N Longitude: 107.882183°W Datum: NAD1983

From the intersection of US Hwy 550 & State Hwy 173 in Aztec, NM, travel Easterly on State Hwy 173 for 1.0 mile to fork in roadway;

Go Left (Easterly) remaining on State Hwy 173 for 3.2 miles to State Hwy 575 on right-hand side of roadway @ Mile Marker 4.2;

Go Right (South-easterly) exiting State Hwy 173 onto State Hwy 575 for 3.1 miles to fork in roadway;

Go Left (Northerly) exiting State Hwy 575 onto existing roadway for 0.1 mile to fork in roadway;

Go Right (South-easterly) for 0.2 mile to existing Hilcorp Trieb Federal Com #2B location, with begin proposed access on south edge of existing wellpad continuing for an additional 295.3' to staked Trieb Federal Com 601 #1H location.